

## **IT'S ALIVE! OR IS IT?**

(Modified for ADEED)

This Alaska Department of Fish and Game lesson has been selected for Yukon Flats School District use by a team of education specialists at the University of Alaska Fairbanks Geophysical Institute.

This lesson was taken from the *Alaska's Ecology* notebook (2005). Page numbering is not consecutive as material has been obtained from different sections of the publication.

The lesson addresses the following Alaska Grade Level Expectations:

### ***Science***

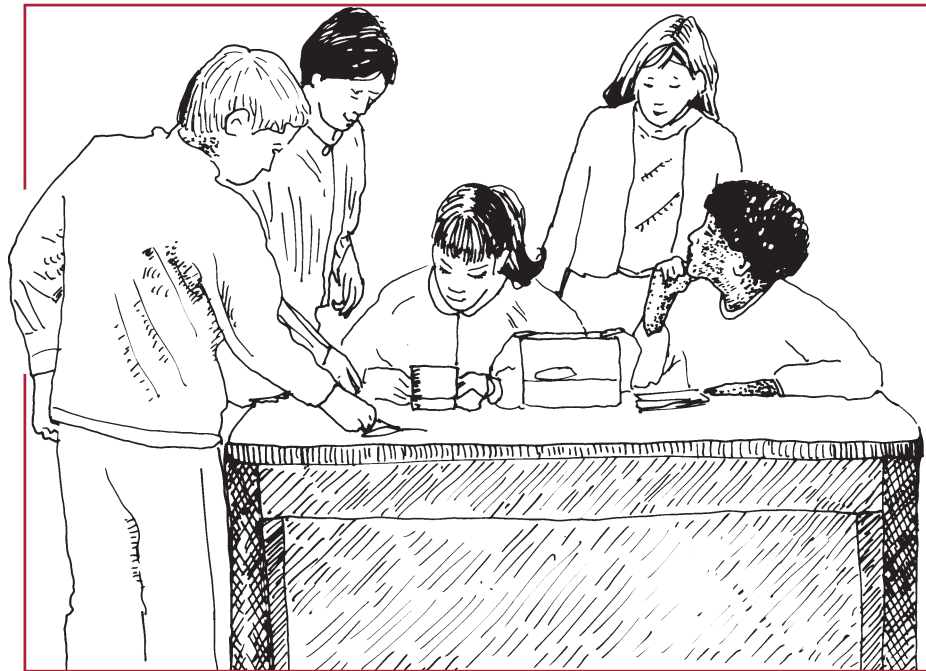
- [3] SC3.1 The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by identifying and sorting examples of living and non-living things in the local environment (L).
- [4] SC2.2 The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by describing the basic characteristics and requirements of living things.

### **Added Materials**

*Alaska Ecology Cards*

# It's Alive! Or is It?

## 1 EXTENSION



### Section 1 ECOLOGY ACTIVITIES

**Grade Level:** 3 - 12

**State Standards:** S B-1,  
S B-2, S B-5, S B-6

**Subject:** Science, language  
arts

**Skills:** Observing, classifying,  
note-taking, predicting

**Duration:** One or two 50-  
minute periods over one  
week

**Group Size:** 2-3

**Setting:** Indoors

**Vocabulary:** Ecosystem,  
living, microscopic, mold,  
nonliving, organism,  
spores, yeast

### Objectives:

1. Given a variety of living and nonliving objects, students will be able to identify some of the differences between living and nonliving things.
2. Students will work in groups to describe and perform some experiments to determine whether an object is living or nonliving.

### Teaching Strategy:

Students examine and classify a variety of living and nonliving things and then test their conclusions.

### Complementary Activities:

“Five Kingdoms But No King,” “Investigating Heat Energy,” “Investigating Soil,” “Investigating Water,” “Investigating Air,” and “Take a Deep Breath” in this section. All the “Investigating ...” activities in Section 3, *Living Things in Their Habitats*.

### Materials:

A jar of water, a jar of air, soil, a rock, a ray of sunlight (if possible), a wind-up toy, a group of rocks (two large and several small), sugar crystals (a jar of water with sugar

dissolved in it and a string – allow to set for a day prior to class). Photocopies of data sheet – one per group per station (following), microscopes, slides and covers, hand lenses, or bug boxes.

A small bird or mammal, several different live insects and/or other invertebrates (such as flat worms, shellfish), microscopic organisms, yeast, bread mold, spores from a fern or mushroom, and various kinds of plant seeds. Try to include at least some small living things that are unfamiliar to your students. Number the objects.

### Background:

See *INSIGHTS, Section 1, Elements of Ecosystems*.

### Procedure:

**IN ADVANCE:** at least one day earlier, dissolve sugar in hot water and hang a string into the water so that crystals will form. Number the objects to be identified and label them or their containers with any specific rules (e.g. “Do not open” or “Handle Gently”).

**BEFORE CLASS:** place the selected materials at numbered stations around the room.



1. IN CLASS, discuss the differences between living and nonliving things. *All living things are able to move, to reproduce in some way, to change, and to respond to stimuli from their outside environment.* Use examples of things commonly found in the classroom as a basis for discussion.

2. On the chalkboard, create a class list of the traits of living things.

3. Explain that students are scientists from another planet, and that the items placed around the room were found on Planet Earth by their expedition. As scientists, they must create and use tests to determine which of the objects are living and which are nonliving.

4. Discuss a few questions that might be asked in these tests to start the students thinking. *Does the object die without sun, water, or oxygen? Does it move? What happens when you poke it?* The students may conclude that further tests are needed, but they must describe these further tests.

5. Divide into groups. Each group determines the tests that it will use to decide whether an object is alive.

6. Groups then visit each station, performing their tests on each object and recording the results. Tasks can be divided so that all students are involved in testing and recording data during the experiments.

*(Teachers may want to model how to take data and summarize findings into conclusions before sending groups out to the stations.)*

7. Before leaving each station, students should summarize their conclusions regarding which objects are living and which are not, based on the tests performed by their group. Before students switch stations, give them five minutes to write their summaries. Remind the scientists that before they return to the spaceship, all data must be in writing!

8. After students have visited all stations, tally the class findings for each item on the blackboard.

9. Ask students to explain why their group classified the item as living or nonliving. What tests did they conduct and what were the results? What other tests might they conduct to better determine the classification of items? *Prompt students to think of observing the questionable objects over time to see if they grow, change or reproduce.*

10. Keep the stations in question in place for several days or a week, so students can compare the items over time. You may want to grow the seeds and the spores to prove they are alive, but explain they need to be placed in the proper environment to grow.

11. Ask whether further observations change any opinions about the classification of the various items. In the end, reveal the actual classification of the items, and discuss any discrepancies between the students' conclusions and the facts.

### **Evaluation:**

1. Students name living and nonliving things in their report as space scientists and tell what tests they used as the basis for their conclusions.

2. Give students a set of new, ambiguous objects. Have them tell or write how they would test the objects to see if they are living or nonliving.

3. Students write their own definitions of the terms "living" and "nonliving."

### **EXTENSION:**

**Living and nonliving charades.** Review the differences between living and nonliving things (*the ability to move, respond to environment, grow, and reproduce*) with the class. Place drawings, photos, or names of various living and nonliving things in a jar. Divide the class into groups and have each group choose an item from the jar. Allow the group time to decide how to pantomime their item. Groups take turns performing.

Each group in the audience has one chance to determine if the item is a living or nonliving thing. Each group should either write down its answer or tell it to the teacher. Each group that answers living



or nonliving correctly, gets one point. The actors receive one point for each group that answered correctly, indicating that they were good actors.

You may choose to award bonus points to both the actors and answering groups if any can identify the pantomimed item more specifically (*i.e.*, *animal, plant, fungi, microscopic organism, seaweed, or other categories*). Play one or more rounds. The group with the most points wins.

### Curriculum Connections:

(See appendix for full citations)

### Books:

*Ecology* (Pollock)

*DK Science Encyclopedia* (also on CD)

*How Nature Works* (Burnie)

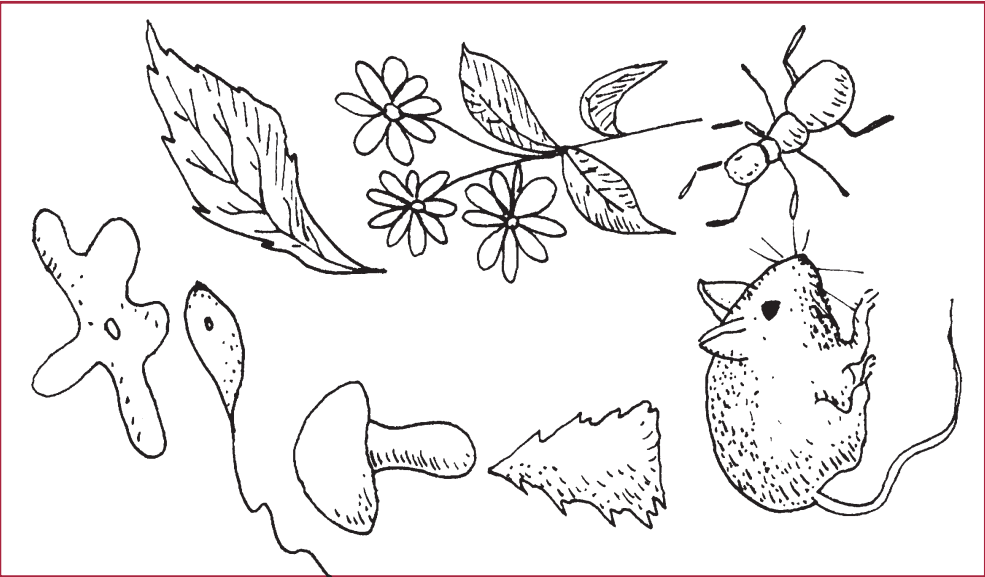
### Teacher Resources:

(See appendix)

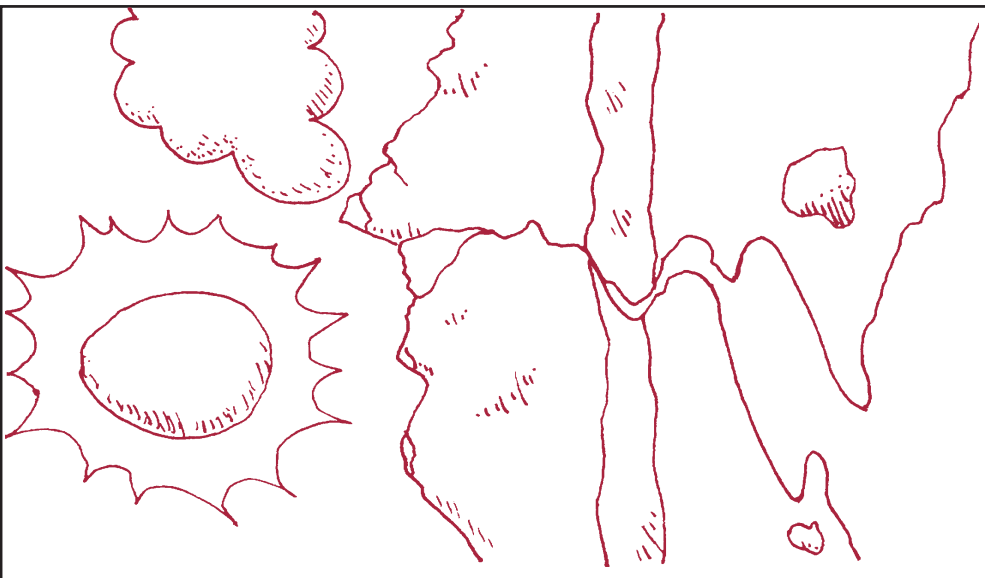




Ecosystems



Living Things



Non-living Things





# Elements of ECOSYSTEMS

**Climate** (*temperature, sunlight, wind, rain*), **topography** (*elevation, steepness, aspect*), and **soil** (*composition, depth, permafrost*) are the major **nonliving** elements that shape **ecosystems** for all **living things** and the **energy** exchange that links them.

Imagine a landscape devoid of living things. In a way, a lunar landscape, but with familiar landmarks. That is the canvas for painting an ecosystem – *the complex of living organisms and their physical environment*. These living and nonliving elements are *linked by a flow of energy and a cycling of materials*.

An ecosystem can be as small as a pond or as large as a continent. Prairie, rainforest, tundra, wetlands, coral reef – all are examples of ecosystems. All run on energy from the sun.

## SUN'S ENERGY – ESSENTIAL FOR LIFE

Energy from the sun heats the surface of the earth to temperatures where life can exist. Both the amount of energy that reaches the surface and the duration of time the energy is present determine the **temperature**. The tilt of the earth's axis changes both of these factors on a daily and seasonal basis. This sets the stage for world **climate** differences, a major determinant of whether our local ecosystem is tundra, trees, or desert.

## CLIMATE & ECOSYSTEMS

The sun's energy not only warms the environment to a degree where life can occur, but is a key ingredient in **photosynthesis** (food production from light energy, water, and carbon dioxide). This food production serves as the foundation for all life.

**Photosynthesis Process.** Plants and fungi absorb **photons** of sunlight from dawn to dusk. The energy contained in the photons is used by the cells to restructure chemical bonds and manufacture food sugars from mineral nutrients and water from the soil and carbon dioxide from the air.

**Winter Dormancy.** Plants cannot photosynthesize at temperatures below 19.4°F (-7°C). Other metabolic processes such as respiration also do not occur at temperatures much below this point. When cold temperatures and meager sunlight halt photosynthesis, growth stops and plants become dormant.

**Summer Growth Surge.** When temperature and sunlight allows, Alaska's plants grow more rapidly in order to complete their cycle in the short time available. Scientists studying white spruce in Alaska and Massachusetts found that the Alaska trees produced the same number of a certain cell, but in half as much time.

### Section 1

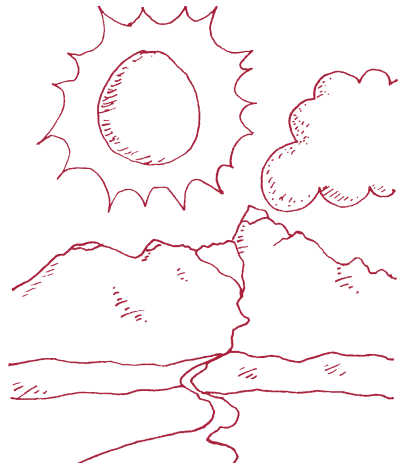
### ECOSYSTEM INSIGHTS

Sun's Energy  
Alaska's Landscape  
poster: *Nonliving+Living Things=Ecosystem*  
Nonliving Elements  
Climate & Ecosystems  
Snowy Blanket  
Topography  
Soil  
Living Things – 5 Kingdoms  
Monerans  
Protists  
Fungi  
Plants  
Animals (Invertebrate)  
Animals (Vertebrate)  
Energy Exchange



**Comparative Study.** Ironically, when scientists moved Alaskan trees to the Lower 48, they grew very slowly. In order to make them grow as fast as they do in Alaska, the length of daylight has to be increased to match Alaska summers.

## ALASKA'S LANDSCAPE ICE AND FIRE



Glaciers and volcanoes have played major roles in shaping Alaska's landscape. About 100,000 glaciers still exist in Alaska, covering about 29,000 square miles or 5 percent of the state. Active volcanoes number more than 80.

**Superlatives.** Alaska's 365 million acres encompass about 34,000 miles of marine coastline, more than 3 million lakes, 39 mountain ranges (including North America's tallest mountain at 20,320 feet), places with more than 200 inches of precipitation annually, and places receiving as little as 5 to 7 inches of total precipitation.

**Extremes.** Alaska spans the latitudes of 51°13' to 71°23' north. The state experiences temperatures ranging from the 30s to 90s during the summer to the 50s to minus 70s during the winter. Daily sunlight varies from several months of total darkness to several months of total daylight above the Arctic Circle.

**Permafrost Enhances Precipitation.** Areas of **permafrost** (*perennially frozen ground*) which underlie a majority of Alaska keep water on or near the surface. Water seems abundant because snowmelt and rain cannot drain away. Because of that, even though **precipitation** in Arctic and Interior Alaska is similar to that of deserts, it is enough to support plant growth.

**Rainy Coast.** By contrast, Southeast and Southcentral Alaska's coastal lands are awash in rainfall. There is no permafrost. The rain makes the area prone to erosion if vegetation is stripped from the steep slopes.

## ALASKA'S SNOWY BLANKET

Precipitation in Alaska comes from snow as well as rain. Snow affects the ecosystem in several ways.

**1. Extends Darkness.** Deep snow cover significantly reduces the amount of sunlight reaching buried plants, extending the period of darkness and reducing the time available for photosynthesis. (*See adaptation fact sheets in Alaska's Tundra & Wildlife, INSIGHTS Section 3.*)

**2. Protects or Scours.** In many wind-blown areas, snow helps to shape vegetation patterns. Under its protective drifts, more plants can survive and thrive. On exposed ridges, wind-blown snow acts as an abrasive to scour away all but the most hardiest or smallest plants.

**3. Retains Earth's Heat.** Snow has great insulating qualities that help life survive in severe environments. Snow is a good **insulator** because air is trapped in between **snow crystals**. The trapped air, a poor **conductor** of **heat energy**, insulates the ground from winter temperatures.

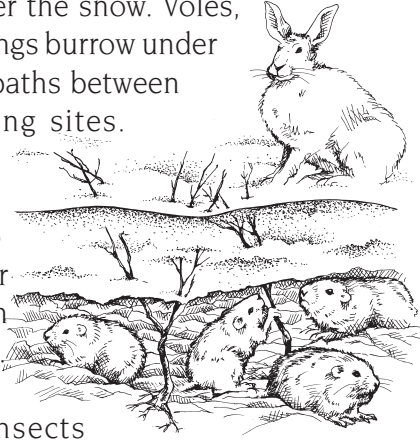
When snow falls in autumn it covers soil that has stored heat energy over the summer. Without additional input of radiant energy from the sun, the ground cools gradually, but **uncompacted** snow acts as an insulating blanket and traps some of the heat given up by the ground. As a result, the ground stays



warmer than winter air, remaining close to 32°F (0°C) – as long as there is a sufficient covering of snow. The ground cools, or gives up heat energy relatively slowly as winter progresses.

**Life Under Snow.** Some animals are **subnivean** and remain active under the snow. Voles, shrews, and lemmings burrow under the snow and dig paths between feeding and resting sites.

Ptarmigan and grouse fold their wings and dive into loose snow for protection from cold and predators.



Some dormant insects rely on the insulating properties of snow to protect them from cold and wind. Insect eggs, cocoons and adults find shelter under vegetation and in the soil.

## TOPOGRAPHY & ECOSYSTEMS

**Sea Level to Mt. McKinley.** Since Alaska rises from sea level to the highest mountain on the continent, the topography of the land plays an important role in shaping the pattern of our weather and our ecosystems. Mountain ranges block rain systems, make their own weather and winds, or concentrate rainfall.

**Drainage or Pooling?** Steep slopes drain moisture quickly and hamper soil development, limiting what can grow there. Low-lying areas or flats may be underlain by permafrost, creating boggy soils that limit plant growth by drowning their roots. Plant growth on dry sites are different from those on wet sites.

**Look for a Sunny Slope.** The **aspect** or compass direction of a slope determines exposure to sunshine or wind, how soon the soil warms in spring, and if snow will be scoured away or lay as a protective blanket. Plant communities on north-facing slopes have different members from those on south-facing slopes.

## SOIL & ECOSYSTEMS

**Alaska's Young Soils.** Recent glaciation over much of Alaska left behind coarsely crushed rock and fine rock flour devoid of organic material. These **young soils** lack variety and depth.

**Other Plants Prepare a Base.** Plants need a foundation for their **roots**. Trees especially depend on many years of other plant growth and accumulation of plant debris to form the **organic soils** that will support their growth.

**Permafrost's Chilling Effect.** Permafrost is most common in areas with a mean annual soil temperature below 27°F ( -3°C). Locally, on south facing slopes or in areas of good drainage, no permafrost may exist.

**Roots Need to Breathe.** Soil depth and standing water affect a plant's ability to "breathe." Cells in leaves and the branches absorb **oxygen** from the air, but the cells in the roots must absorb oxygen from the soil. Trees literally drown if their roots become waterlogged. Even in arid environments like the Interior, trees and other plants can become waterlogged because permafrost does not permit water to drain away from their roots.

**Cold Creates Treeless Muskeg Soils.** Cold temperatures slow the growth and decay of plant materials and that slows the development of organic soils. If dead plants accumulate faster than they can be decomposed, an acidic basin called a **muskeg** forms. Muskeg soils, often found within boreal forests, are notoriously poor environments for most tree and plant growth.

**Bacteria Make Nutritious Soil.** Plants must also have **nitrogen** in order to grow. Most of the nitrogen on earth is in the air, but plants are only able to use nitrogen that is in the soil. Without the soil's nitrogen provided by microscopic bacteria called "nitrogen-fixers," plants could not survive.



## LIVING THINGS – 5 KINGDOMS

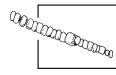
To the various nonliving environments we now add a cast of living things. Living things can move in response to their surroundings they grow and they reproduce. The presence or absence of certain nonliving things dictates which living creatures will survive in a certain area.

**Stars are Easier to Count.** It is said that scientists have a better understanding of how many stars are in our galaxy than how many species are on Earth. Estimates range from two million to 100 million. New species are still being discovered.

**Hey, You!** Only 1.4 million species have been named. Only a small fraction of the insects, fish, and non-animal species have been scientifically described and catalogued.

**Naming Things.** The Swedish naturalist, Carolus Linnaeus, was the first person to devise a method of naming living things. Linnaeus used two categories or **kingdoms** to classify all living things: **Plants** and **Animals**. His system has been modified many times, evolving along with the expanding knowledge of biologists.

**More Kingdoms.** While scientists are still debating about how to classify some organisms, they now agree on the following five classifications of living things:



monerans (one-celled organisms such as blue-green algae and bacteria)



protists (one-celled organisms including algae and protozoans)



fungi (such as mushrooms and lichens)



plants



animals

The following fact sheets explain the characteristics of each kingdom and highlight some of its members found in Alaska.



## 1 AND 2 – MONERANS AND PROTISTS

### *Small but mighty*

Monerans and protists create soil and clean up plant debris. Until recently, these microscopic living things were considered to be small versions of plants and animals. But the more scientists learned about them, the less they seemed to fit in either category.

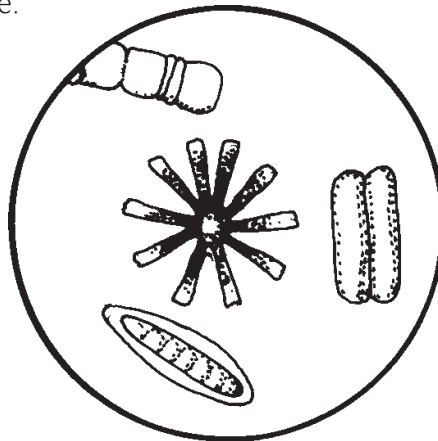
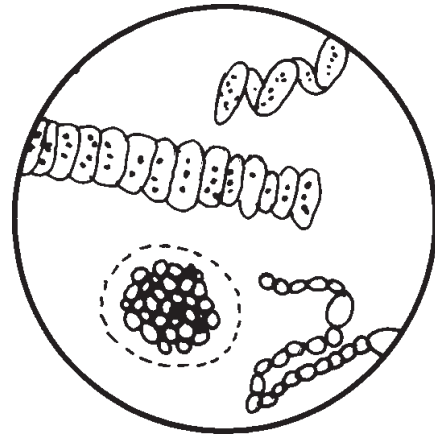
**Given Their Own Kingdoms.** Some not only make their own food, like plants, but also move around and catch and eat other living things. Additionally, their cell structure is quite different from those of either plants or animals.

MONERANS, the smallest and most primitive microscopic organisms, are **prokaryotic** (they lack a cell nucleus). **Bacteria** and **cyanobacteria** (or **blue-green algae**) are examples of monerans. Some live together in colonies or in **symbiosis** with other living things. *A million monerans would fit on the head of pin.*

PROTISTS are larger microscopic organisms that have cell nuclei (they are **eukaryotic**). These include **algae**, **paramecia**, **amoebas**, and many others. They move by use of flagella, cilia, or pseudopodia. Some do not move.

**Ecological Roles.** Some monerans and protists are **producers**. Like plants, they are able to photosynthesize (to make food from air, water, and sunlight) and are food for very small animals. Others are **herbivores** or **carnivores**.

**Unsung Heroes.** The majority, however, are **decomposers** and **detritivores**, especially monerans. Some are “nitrogen-fixers,” taking nitrogen from the air and converting it to a form usable by plants. These unsung heroes recycle waste and dead things. Their recycling allows life to continue.



Microscopic organisms are abundant and important in all ecosystems. The majority are detritivores that replenish the soil with recycled nutrients.

### 3 – FUNGI

#### *An out-of-body phenomenon*

Fungi are prolific **decomposers** and **detritivores**. Mushrooms, shelf fungi, and less noticeable molds, mildews, yeasts, and rots are some examples.

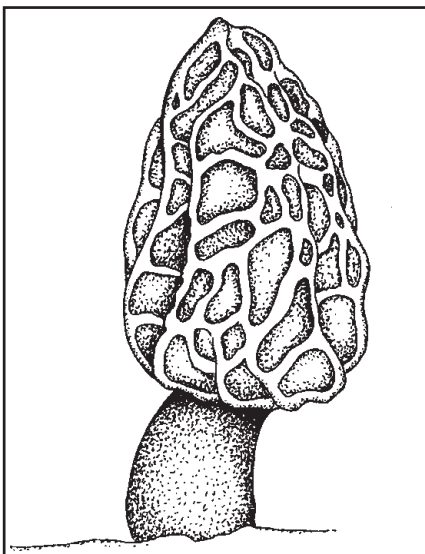
Fungi are similar to plants in that they are immobile. In fact, scientists used to consider them to be plants. But fungi are very different from plants in cell structure and in the ways they live, so scientists now place them in a separate kingdom of living things.

**More Than Meets the Eye.** Usually, we see only the fruiting, or reproductive part of a fungi (*a mushroom, for example*). Its main body is hidden from view. The body of a fungus is made up of **hyphae**, microscopic hair-like structures that reach out through the wood, soil, leaf litter, roots, or other material on which the fungi is growing. A handful of forest soil may contain over two miles of fungal hyphae!

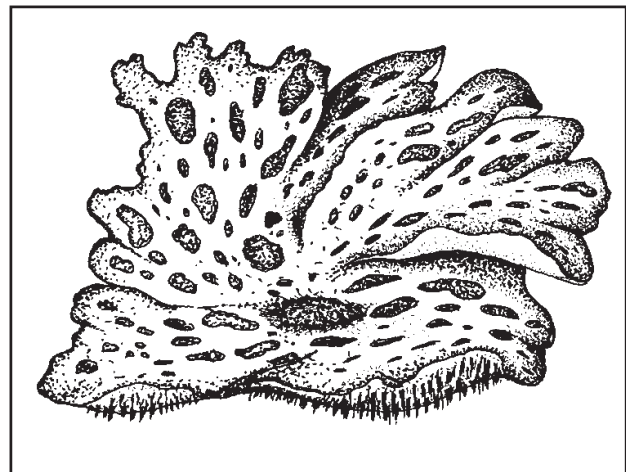
**Unusual Way of Eating.** Fungi use their hyphae and digest their food outside their bodies! The cells of fungal hyphae give off digestive enzymes like those found in human stomachs. These enzymes break down wood, leaves, and other material. Then the fungal hyphae absorb the scattered sugars and minerals and use them to grow.

**Trading Minerals for Sugars.** Some fungi form symbiotic associations with plants and help them obtain needed minerals (*nitrogen, potassium, phosphorus*) from the soil in exchange for the sugars the plant produces. More than 90 percent of the plants in Alaska, including all our trees and berry-producing plants, could not grow without these mycorrhizal fungi.

**Mutual Symbiosis.** Lichens, one of the most visible fungi, are actually a partnership between a fungus and algae or cyanobacteria (moneran). The fungus provides the structural protection, and the alga produces the food.



Mushrooms are the fruiting, or reproductive parts of certain fungi. Tiny hair-like structures, called hyphae, are the main body of many fungi.



Lichens are the most visible fungi in forest ecosystems.



## 4 – PLANTS

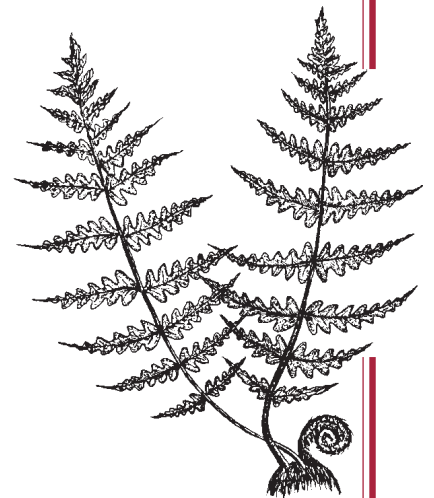
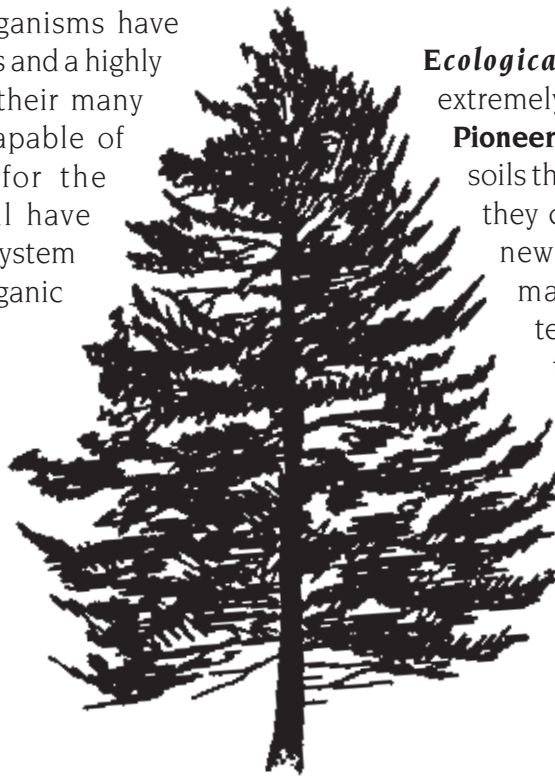
### *From small to tall*

Plants are visually dominant in ecosystems and produce the food for other life forms. This kingdom includes small to tall – mosses, liverworts, ferns, and horsetails to spruce and birch trees.

**Green Producers.** These organisms have cells with nuclei and cell walls and a highly organized arrangement of their many cells. All are green and capable of photosynthesis. Except for the mosses and liverworts, all have leaves, roots, stems, and a system for transporting water and organic materials among the cells.

**Help Accepted.** All plants live a stationary life. Many rely on wind, insects, birds, and some mammals to pollinate their flowers or to help carry their seeds to new areas. Plants can live for a remarkably long time. Some bristlecone pines are more than 4,000 years old.

**Ecological Champions.** Plants are extremely important ecologically. (1) **Pioneer** plants help create the organic soils that all other plants need before they can become established in a new location. (2) They are the major **producers** (*of food*) in terrestrial ecosystems. Without them, the animal kingdom would not survive.



## 5A – ANIMALS (Invertebrates)

### *Mind-boggling multitudes*

Invertebrate animals are multicellular organisms that lack backbones or spinal columns. They make up the majority of the animal kingdom, both in number of species and in populations.

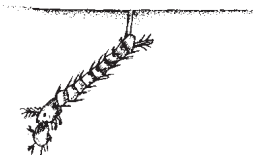
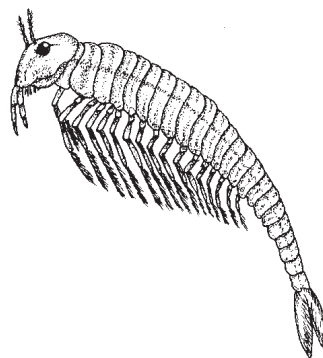
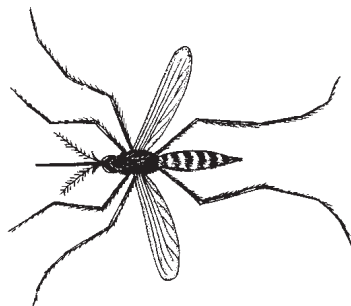
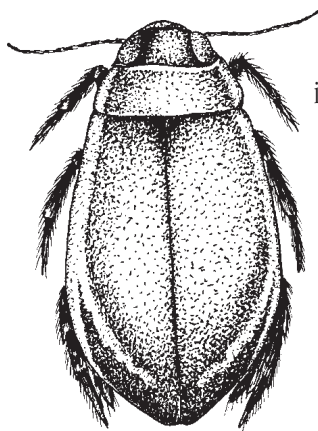
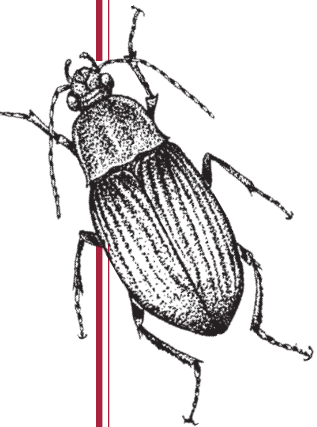
Like other animals, invertebrates obtain energy and minerals by eating other living things – plants, fungi, or other animals. They are **consumers**. Many also function as **detritivores**, helping to recycle the minerals and nutrients in dead organic material.

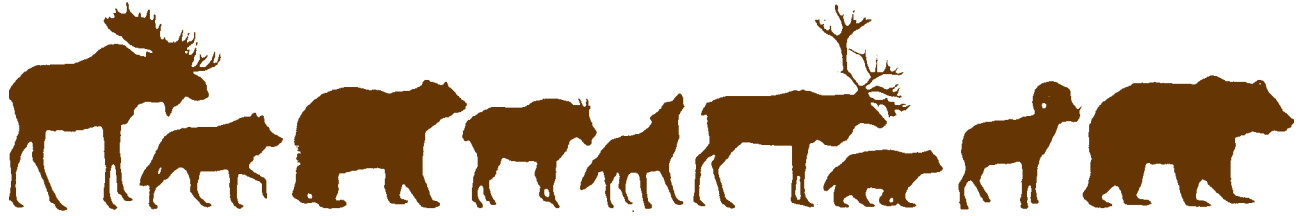
**Need External Warmth.** Invertebrates need external warmth to function. The majority of invertebrates are only active during the warmer months which in Alaska is limited to a few summer

months. Even then, despite their numbers, few humans notice them.

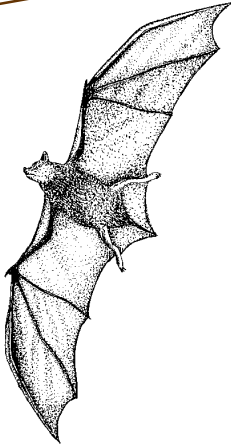
**Mosquitoes and Much More.** Arthropods (*spiders, centipedes, millipedes, and insects*) are the most conspicuous. Flying insects include butterflies, bumblebees, moths, wasps, crane flies, and midges. Mosquitoes, blackflies, and other biting flies can occur in great abundance.

**Look in Damp Places.** Invertebrates also include segmented worms, snails, and slugs. Sawflies, aphids, bark beetles, carrion beetles, and ground beetles are among the insects that live on plants or in the leaf litter. *For a more complete list and illustrations, see the Alaska Ecology Cards.*





# Alaska Ecology Cards



## 235. LITTLE BROWN BAT F,W

**Traits:** Mammal with forelegs modified to form membranous wings; keen eyesight; active at night

**Habitat:** Forested areas with a lake nearby; roost in caves, tree cavities, or buildings.

**Foods:** Mosquitoes, moths, mayflies, caddisflies; usually feeds over water and in forest openings

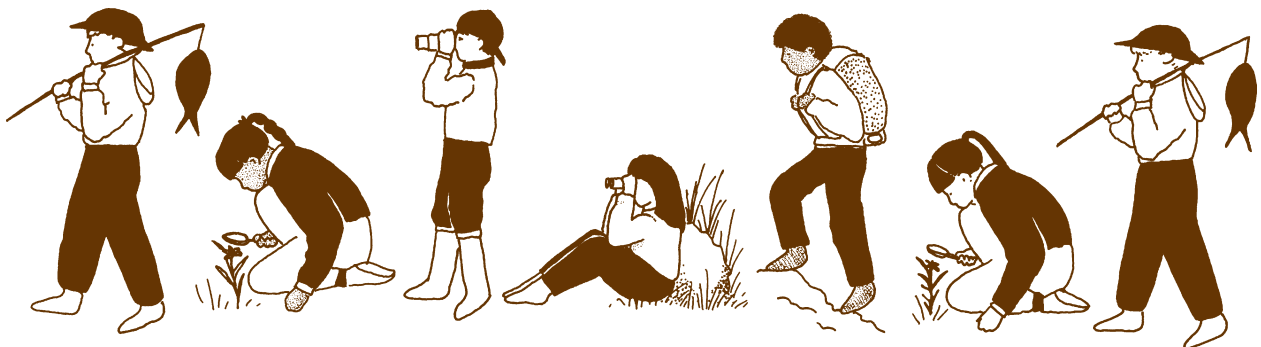
**Eaten by:** Owls, squirrels

**Do You Know?** Bats capture flying insects by using echolocation. A single bat may eat as many as 1,000 mosquitoes in one evening.



**A collection of 270 illustrations of one-celled life, plants, invertebrates, fish, birds, and mammals found in Alaska**

Each illustration is backed by text describing the organism's traits, habitat, food habits, what other organisms eat it for food, and a "do you know?" fact. These cards are suitable for learners of any age. Primary educators may choose to adapt the illustrations and text for young readers.



# Alaska Ecology Cards

## REVISION 2001

The Alaska Department of Fish and Game has additional information and materials on wildlife conservation education.

The *Alaska Wildlife Curriculum* includes:

*Alaska's Ecology & Wildlife*  
*Alaska's Forests and Wildlife*  
*Alaska's Tundra and Wildlife*  
*Alaska's Wildlife for the Future*  
*Alaska Ecology Cards*

We revise the *Alaska Wildlife Curriculum* periodically. For information, or to provide comments on the *Ecology Cards*, please contact us:

**Division of Wildlife Conservation**  
**Attention: Wildlife Education**  
**333 Raspberry Road**  
**Anchorage, AK 99518**  
**907-267-2168**

or visit our web site:  
<http://www.state.ak.us/adfg/>



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U.S.D.A. Soil Conservation Source: Dan LaPlante, J. David Swanson, Tom Ward, Annette MacDonald

**Illustration:** Conrad Field

The Alaska State Legislature funded this revision of *Alaska Wildlife Curriculum* in support of wildlife conservation education.

The *Alaska Wildlife Curriculum* is a resource for educators teaching today's youth about Alaska's wildlife. We dedicate this curriculum to you and your students.

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Alaska Department of Fish and Game  
Division of Wildlife Conservation

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**Plant or Animal Name****Scientific Name****Plant or Animal Name****Scientific Name****FISHES – VERTEBRATES**

- 136. Slimy Sculpin F,T,W
- 137. Nine-spine Stickleback F,T,W
- 138. Three-spine Stickleback F,T,W
- 139. Blackfish F,T,W
- 140. Whitefish F,T,W
- 141. Burbot F,T,W
- 142. Arctic Grayling T,W
- 143. Eulachon W
- 144. Northern Pike W
- 145. Arctic Char T,W
- 146. Lake Trout F,T,W
- 147. Pacific Herring W
- 148. Sockeye Salmon W
- 149. Pink Salmon W
- 150. Coho Salmon W
- 151. Chum Salmon W

**AMPHIBIANS**

- 152. Wood Frog F,T,W
- 153. Salamander and Newt F

**BIRDS – WATERFOWL**

- 154. Loons F,T,W
- 155. Grebes F,T,W
- 156. Tundra Swan T,W
- 157. Greater White-fronted Goose T,W
- 158. Brant T,W
- 159. Emperor Goose W
- 160. Cackling Canada Goose T,W
- 161. Dusky Canada Goose W
- 162. Northern Pintail T,W
- 163. Oldsquaw T,W
- 164. Canvasback W
- 165. Mergansers T,W
- 166. Eiders T,W
- 167. Scoters F,T,W

**BIRDS – RAPTORS**

- 168. Bald Eagle F,W
- 169. Northern Harrier T,W
- 170. Sharp-shinned Hawk F
- 171. Northern Goshawk F
- 172. Red-tailed Hawk F,W
- 173. Rough-legged Hawk T
- 174. Golden Eagle T
- 175. American Kestrel F
- 176. Merlin F
- 177. Gyrfalcon T

**BIRDS – GROUSE**

- 178. Spruce Grouse F
- 179. Blue Grouse F
- 180. Ptarmigan T
- 181. Ruffed Grouse F
- 182. Sharp-tailed Grouse F

**BIRDS – CRANES**

- 183. Sandhill Crane T,W

**BIRDS – SHOREBIRDS & GULLS**

- 184. Plovers T,W
- 185. Sandpipers T,W
- 186. Phalaropes T,W
- 187. Parasitic Jaeger T,W
- 188. Glaucous Gull T,W
- 189. Terns F,T,W

**BIRDS – OWLS**

- 190. Northern Saw-whet Owl F,W
- 191. Great Horned Owl F
- 192. Great Gray Owl F
- 193. Boreal Owl F
- 194. Northern Hawk Owl F
- 195. Snowy Owl T,W
- 196. Short-eared Owl T,W

**BIRDS – HUMMINGBIRD**

- 197. Rufous Hummingbird F

**BIRDS – KINGFISHER**

- 198. Belted Kingfisher F,T,W

**BIRDS – WOODPECKERS**

- 199. Northern Flicker F

- Cottus cognatus*
- Pungitius pungitius*
- Gasterosteus aculeatus*
- Dallia pectoralis*
- Genera: Prosopium, Coregonus
- Lota lota*
- Thymallus arcticus*
- Thaleichthys pacificus*
- Esox lucius*
- Salvelinus alpinus*
- Salvelinus namaycush*
- Clupea pallasii*
- Oncorhynchus nerka*
- Oncorhynchus gorbuscha*
- Oncorhynchus kisutch*
- Oncorhynchus keta*

- Rana sylvatica*
- Order: Caudata

- Genus: *Gavia*
- Genus: *Podiceps*
- Cygnus columbianus*
- Anser albifrons*
- Branta bernicla*
- Chen canagica*
- Branta canadensis minima*
- Branta canadensis occidentalis*
- Anas acuta*
- Clangula hyemalis*
- Aythya valisineria*
- Genus: *Mergus*
- Genera: *Polysticta*, *Somateria*
- Genus: *Melanitta*

- Haliaeetus leucocephalus*
- Circus cyaneus*
- Accipiter striatus*
- Accipiter gentilis*
- Buteo jamaicensis*
- Buteo lagopus*
- Aquila chrysaetos*
- Falco sparverius*
- Falco columbarius*
- Falco rusticolus*

- Dendragapus canadensis*
- Dendragapus obscurus*
- Genus: *Lagopus*
- Bonasa umbellus*
- Tympanuchus phasianellus*

- Grus canadensis*

- Genera: *Pluvialis*, *Charadrius*
- Calidris mauri*
- Genus: *Phalaropus*
- Stercorarius parasiticus*
- Larus hyperboreus*
- Genus: *Sterna*

- Aegolius acadicus*
- Bubo virginianus*
- Strix nebulosa*
- Aegolius funereus*
- Surnia ulula*
- Nyctea scandiaca*
- Asio flammeus*

- Selasphorus rufus*

- Ceryle alcyon*

- Colaptes auratus*

- 200. Hairy/Downy Woodpeckers F
- 201. Black-backed Woodpecker F
- 202. Three-toed Woodpecker F
- 203. Red-breasted Sapsucker F

**BIRDS – SONGBIRDS**

- 204. Flycatchers F,T,W
- 205. Horned Lark T
- 206. Swallows F,T,W
- 207. Gray Jay F,T
- 208. Steller's Jay F
- 209. Black-billed Magpie F,W
- 210. Northwestern Crow F,W
- 211. Common Raven F,T,W
- 212. Chickadees F
- 213. Red-breasted Nuthatch F
- 214. Brown Creeper F
- 215. Winter Wren F
- 216. American Dipper F
- 217. Warblers F
- 218. Kinglets F
- 219. Northern Wheatear T,W
- 220. American Robin F,T,W
- 221. Varied Thrush F
- 222. Small Thrushes F,T,W
- 223. Water Pipits F,T,W
- 224. Bohemian Waxwing F,W
- 225. Northern Shrike F,T,W
- 226. Sparrows F,T,W
- 227. Snow Bunting T
- 228. Lapland Longspur T
- 229. Gray-Crowned Rosy Finch T
- 230. Common Redpoll F,T
- 231. Pine Grosbeak F
- 232. Crossbills F
- 233. Pine Siskin F

**MAMMALS**

- 234. Shrews F,T,W
- 235. Little Brown Bat F,W
- 236. Collared Pika T
- 237. Snowshoe Hare F
- 238. Tundra Hare T
- 239. Woodchuck F
- 240. Marmots T
- 241. Red Squirrel F
- 242. Northern Flying Squirrel F
- 243. Arctic Ground Squirrel T
- 244. Beaver F,T,W
- 245. Deer Mouse F,T
- 246. Voles F,T,W
- 247. Lemmings T,W
- 248. Muskrat T,W
- 249. Meadow Jumping Mouse F
- 250. Porcupine F
- 251. Coyote F,T,W
- 252. Wolf F,T,W
- 253. Arctic Fox T,W
- 254. Red Fox F,T,W
- 255. Black Bear F
- 256. Brown Bear F,T,W
- 257. Marten F
- 258. Ermine F,T,W
- 259. Least Weasel F,T
- 260. Mink F,T,W
- 261. Wolverine F,T
- 262. River Otter T,W
- 263. Lynx F
- 264. Sitka Black-tailed Deer F
- 265. Moose F,W
- 266. Caribou F,T
- 267. Mountain Goat T
- 268. Muskox T
- 269. Dall Sheep T
- 270. Humans F,T,W

- Genus: *Picoides*
- Picoides arcticus*
- Picoides tridactylus*
- Sphyrapicus ruber*

- Family: Tyrannidae
- Eremophila alpestris*
- Family: Hirundinidae
- Perisoreus canadensis*
- Cyanocitta stelleri*
- Pica pica*

- Corvus caurinus*
- Corvus corax*
- Genus: *Parus*
- Sitta canadensis*
- Certhia americana*
- Troglodytes troglodytes*
- Cinclus mexicanus*
- Family: Emberizidae

- Genus: *Regulus*
- Oenanthe oenanthe*
- Turdus migratorius*
- Ixoreus naevius*
- Family: Turdidae
- Anthus spinoletta*
- Bombicilla garrulus*
- Lanius excubitor*

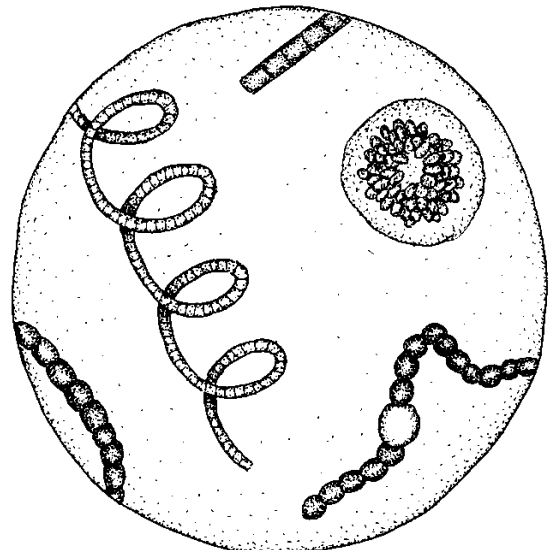
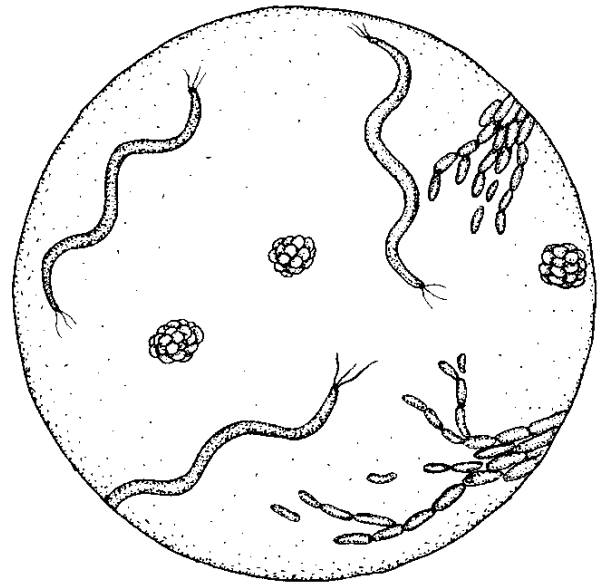
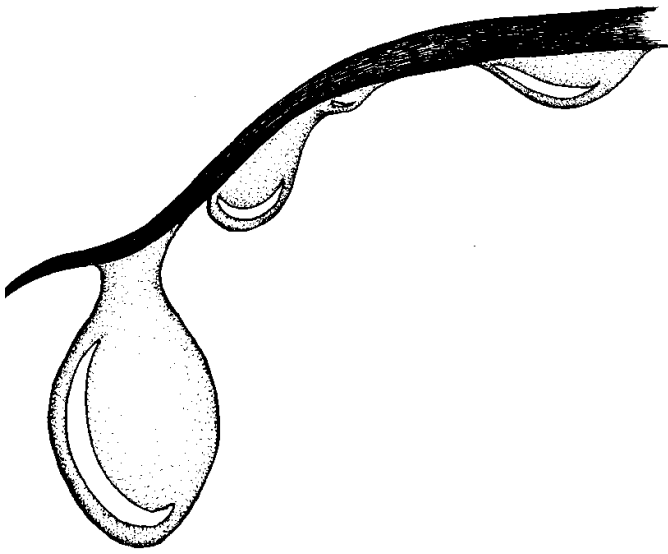
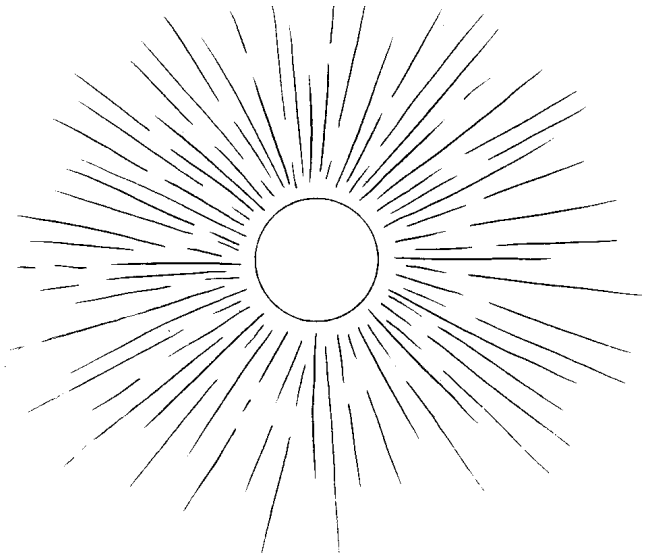
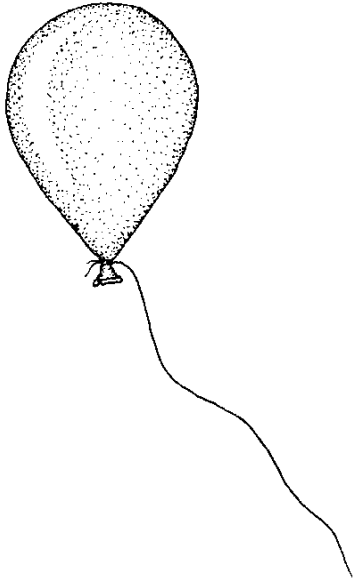
- Family: Emberizidae
- Plectrophenax nivalis*
- Calcarius lapponicus*
- Leucosticte arctoa*
- Carduelis flammea*
- Pinicola enucleator*
- Genus: *Loxia*
- Carduelis pinus*

- Genus: *Sorex*
- Myotis lucifugus*
- Ochotona collaris*
- Lepus americanus*
- Lepus timidus*
- Marmota monax*
- Genus: *Marmota*
- Tamiasciurus hudsonicus*
- Glaucomyus sabrinus*
- Spermophilus parryi*
- Castor canadensis*
- Peromyscus maniculatus*
- Genus: *Microtus*
- Genera: *Lemmus*, *Dicrostonyx*, *Mictomys*

- Onodra zibethica*
- Zapus hudsonius*
- Erethizon dorsatum*
- Canis latrans*
- Canis lupus*
- Alopex lagopus*
- Vulpes vulpes*
- Ursus americanus*

- Ursus arctos*
- Martes americana*
- Mustela erminea*
- Mustela nivalis*
- Mustela vison*
- Gulo gulo*
- Lutra canadensis*
- Lynx canadensis*
- Odocoileus hemionus*

- Alces alces*
- Rangifer tarandus*
- Oreamnos americanus*
- Ovibus moschatus*
- Ovis dalli*
- Homo sapiens*



## 4. SUN

F,T,W

**Traits:** The sun is a dwarf yellow star and a dense ball of gases and dust.

**Occurrences:** The sun is located in the center of our solar system, 93 million miles from planet Earth.

**Values:** Plants and other producers capture the energy in sunlight and, through photosynthesis, store it in the form of sugar. They use this “stored sunlight energy” to grow and reproduce.

**Do You Know?** The amount of solar energy striking the earth every day is about 1.5 billion times greater than the amount of electricity generated each year in the United States.

## 5. BACTERIA

F,T,W

**Traits:** Bacteria (monerans) are single-celled microscopic organisms that have no chlorophyll and that multiply by simple division. They occur in three main forms: round, rod-shaped, and spiral.

**Habitat:** Every moist environment

**Foods:** Dead plants, fungi, animal materials; some kinds of bacteria live as parasites of living things, and some are able to make their own food.

**Eaten by:** Protozoans and some fungi

**Do You Know?** Some types of bacteria live in the digestive tracts of animals and aid in digestion.

## 6. CYANOBACTERIA

F,W

**Traits:** Cyanobacteria (monerans) are microscopic organisms that are single-celled or in colonies of cells. They can appear blue-green, brown, red, or yellow depending on pigments.

**Habitats:** Small ponds, lakes, estuaries, open ocean

**Foods:** Make their own by photosynthesis

**Eaten by:** Protozoans, roundworms, segmented worms, springtails, mites

**Do You Know?** The Red Sea gets its name from the occasional abundance of blue-green algae, which is really red.

## 1. AIR

F,T,W

**Traits:** Air is made of several gases, including nitrogen, oxygen, and carbon dioxide.

**Occurrences:** Air surrounds us, but we rarely notice that we breathe it every minute we live.

**Values:** The thin layer of air that blankets the earth provides living things with oxygen and carbon dioxide. It traps heat from the sun and blocks harmful high-intensity light rays.

**Do You Know?** Although the sky above us looks endless, the earth’s atmosphere is actually very thin. If the earth were the size of an apple, the atmosphere would be the same thickness as the apple’s skin.

## 2. WATER

F,T,W

**Traits:** Water molecules are made of two atoms of hydrogen and one atom of oxygen.

**Occurrence:** As a *liquid* in rain, lakes, rivers, oceans; as a *solid* in ice, snow; as a *gas* in clouds, humidity, evaporation; some collects underground in the water table.

**Values:** All living things need water for most life processes.

**Do You Know?** Water cycles continuously from clouds to rain or snow to plants, rivers, lakes, and oceans, then back to clouds. Today we are using the same “recycled” water that dinosaurs used thousands of years ago.

## 3. SOIL

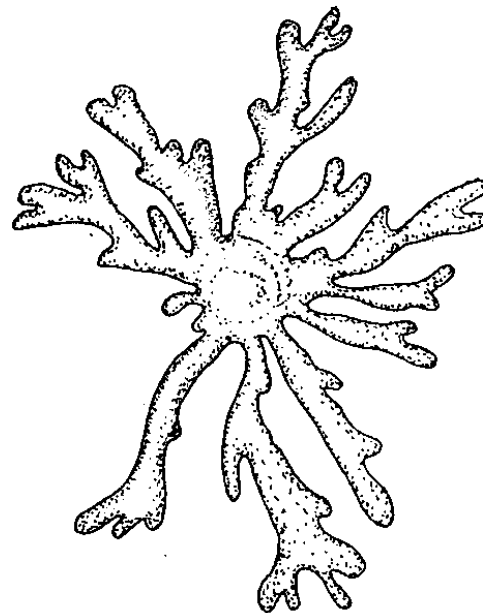
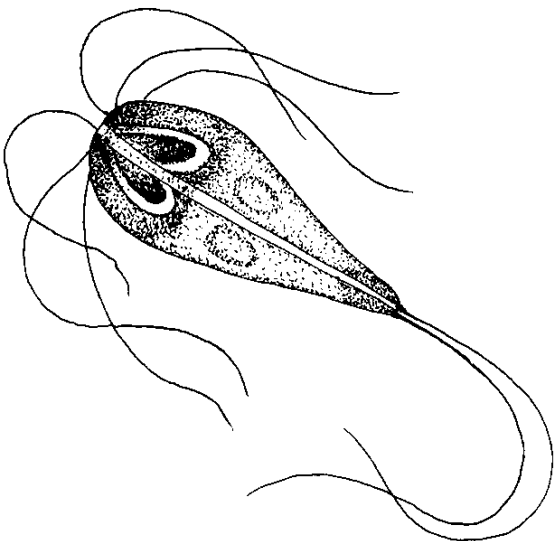
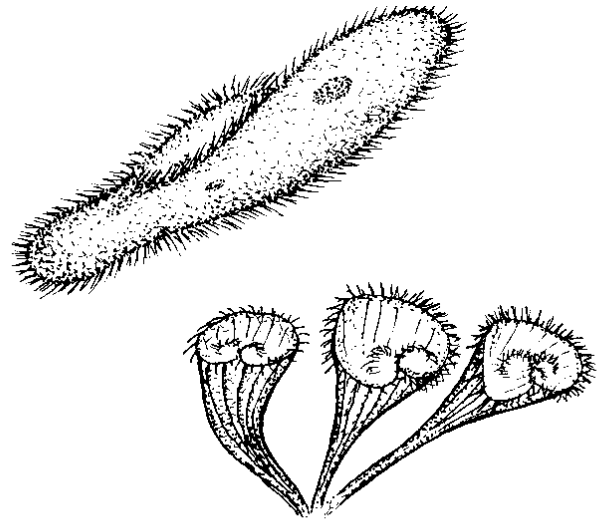
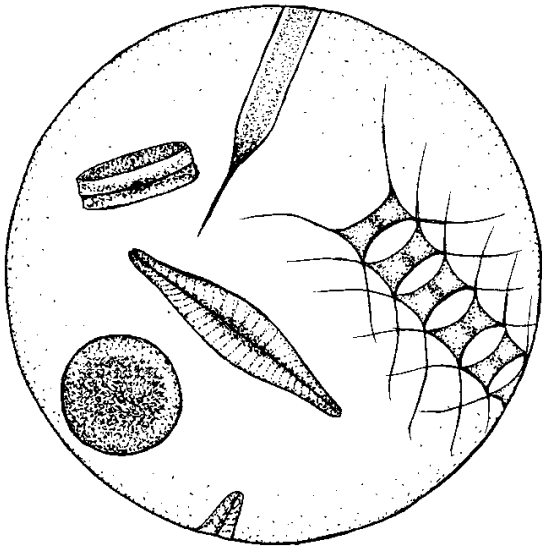
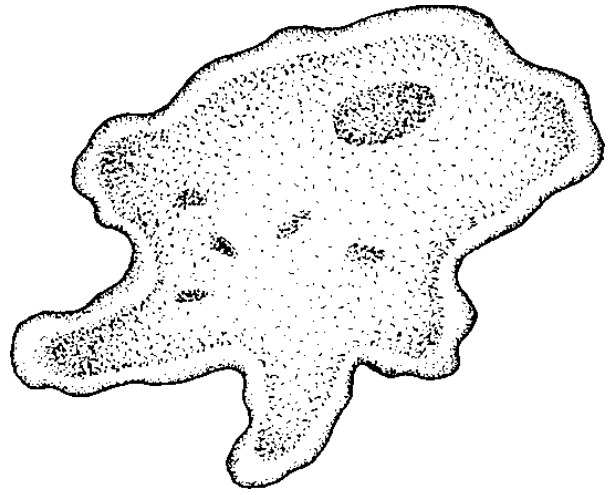
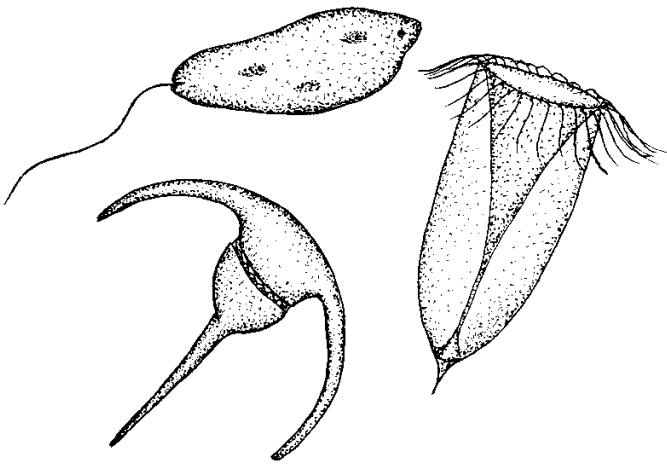
F,T,W

**Traits:** Rocks are made of elements and compounds. Wind and water erodes rocks into fine sand and clay particles, which become organic mineral soils. Organic soils are enriched by nutrients from decomposed plants, animals, and other living things.

**Occurrence:** Much of the land on earth is covered by soil.

**Values:** Most plants (producers) require soil to grow. Soil anchors them and feeds their roots.

**Do You Know?** A teaspoon of soil may contain 3-10 billion microscopic organisms.



## 10. AMOEBAS

W

**Traits:** Microscopic organisms (protists) that move and capture prey by “pseudopodia” (false feet), which are flowing extensions from their bodies

**Habitat:** Fresh and salt water

**Foods:** Small organisms, including other protozoans, bacteria, algae, diatoms

**Eaten by:** Other protozoans

**Do You Know?** Certain kinds of amoebas cause diseases, such as amoebic dysentery in people.

## 7. PROTOZOANS

F,T,W

**Traits:** Microscopic organisms (protists) each made of a single cell or group of identical cells

**Habitat:** Water droplets on leaves, leaf litter, under rocks, and in soil

**Foods:** Dead plant material and animal wastes; some eat bacteria, algae, or other protozoans.

**Eaten by:** Protozoans, round worms, segmented worms

**Do You Know?** Some protozoans live in the intestines of certain animals and aid them in digestion of foods. Many are parasites of animals.

## 11. CILIATES

W

**Traits:** Microscopic, single-celled organisms (protists) that have cilia (short, hairlike structures), which they use to move around and capture food

**Habitat:** Fresh and salt water; some live inside of, or attached to, other organisms.

**Foods:** Rotifers, protozoans, bacteria, algae, detritus, diatoms; some are parasites on other organisms.

**Eaten by:** Protozoans, roundworms, segmented worms, fish larvae

**Do You Know?** Certain ciliates live in the digestive tracts of hoofed mammals and help them digest their foods.

## 8. DIATOMS

F,W

**Traits:** Microscopic, single-celled organisms (protists) that live individually or in colonies; diatoms have two lenslike shells made of silica (an element of glass).

**Habitat:** Fresh and salt water

**Foods:** Make their own by photosynthesis

**Eaten by:** Amoebas, small crustaceans, larvae of invertebrates, fish

**Do You Know?** When diatoms die, their shells fall to the bottom of the sea. Large deposits formed over centuries are now mined and used by industry in a variety of products.

## 12. SLIME MOLDS

F

**Traits:** Slimy covering on logs, trees, and moist soil; they are sometimes covered with small flaglike fruiting bodies. During part of its life, the slime mold slowly rolls along like an amoeba and leaves a trail of slime.

**Habitat:** Wet, shaded locations in forests

**Foods:** Bacteria and other microscopic organisms

**Eaten by:** Unknown

**Do You Know?** The classification of slime molds is still being debated. Some scientists consider them fungi, while others consider them to be protists. This organism has nine distinct life cycles.

## 9. FLAGELLATES

W

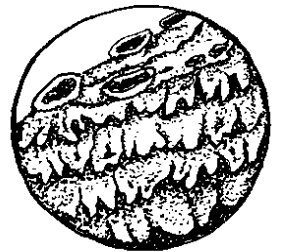
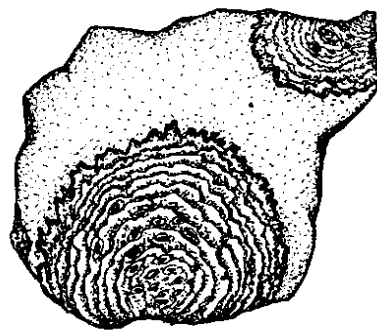
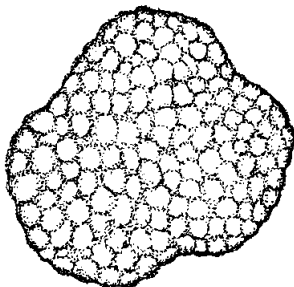
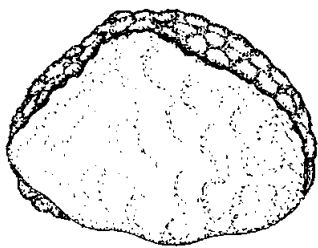
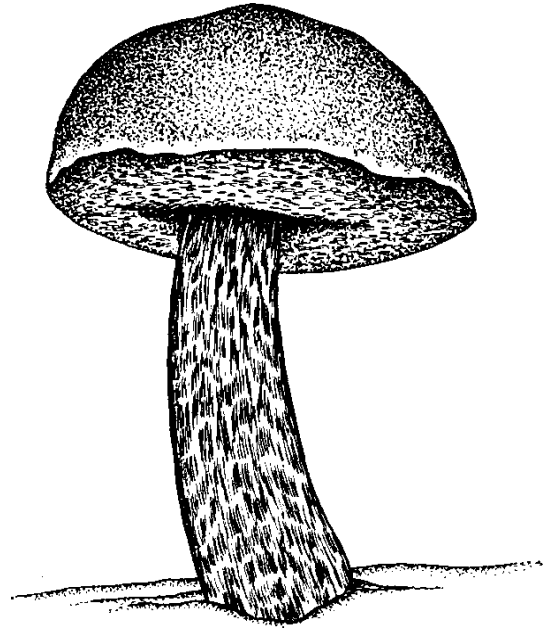
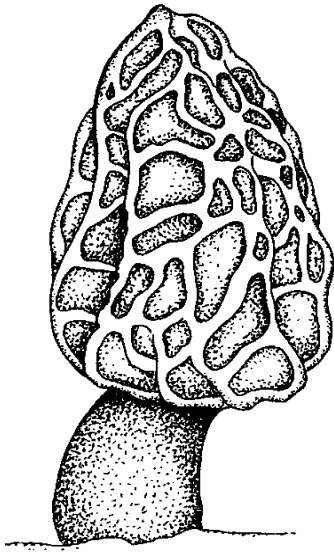
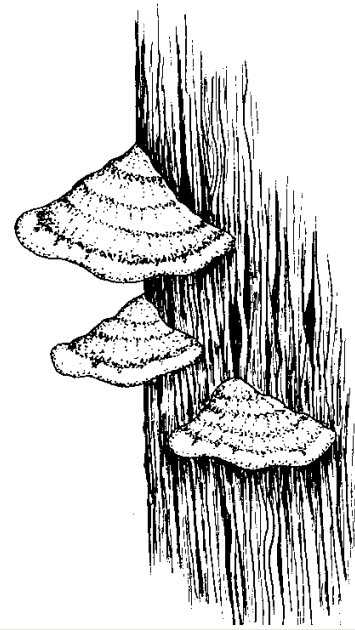
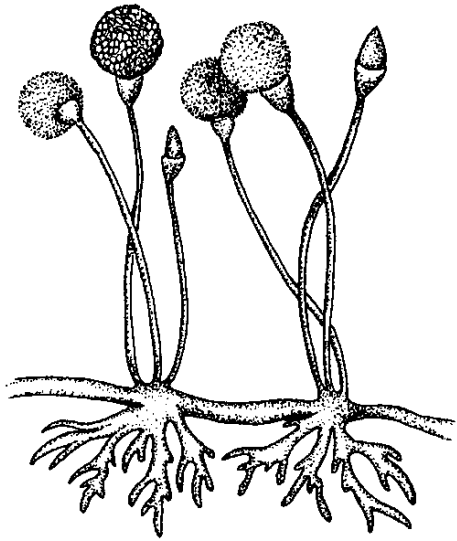
**Traits:** Microscopic, single-celled organisms (protists) with long, whiplike structures called flagella, which help them move

**Habitat:** Fresh and salt water; some are parasites on other organisms.

**Foods:** Produce their own food through photosynthesis, some eat other microscopic organisms.

**Eaten by:** Zooplankton, small crustaceans, larvae of invertebrates, fish

**Do You Know?** Red tides that can kill thousands of fish are caused by vast swarms of certain kinds of flagellates.



## 16. SHELF FUNGI

F

**Traits:** Fungi with a fruiting body (called a conk) that grow from trees or logs and form a shelflike structure; the conks grow and produce spores each year.

**Habitat:** Old trees, logs, or other wood

**Foods:** Dead wood

**Eaten by:** Millipedes and a variety of insects

**Do You Know?** Some species of shelf fungi are parasites on living trees. They slowly decay the dead heartwood of the tree and may also attack living parts of the tree. Eventually the tree may be weakened and killed.

## 13. MOLDS, MILDEWS, AND RUSTS

F,T

**Traits:** These fungi look like a fine powder, fuzz, or furry coating on plant parts or animal droppings. Molds, mildews, and rusts can also be abnormal growths.

**Habitat:** Dead plants or waste materials; certain kinds can grow on living plants or insects.

**Foods:** Dead plant materials (rarely wood); some species live as parasites on plants or insects.

**Do You Know?** Some of these fungi, particularly rusts, are parasites of plants and cause abnormal growths such as galls or witches brooms.

## 17. MUSHROOMS

F,T

**Traits:** Fungi with fruiting bodies that consist of stalks and caps; the undersides of the caps are made of many slits or tubes.

**Habitat:** Soil, leaf litter, rotting logs, and dead vegetation

**Foods:** Mainly dead plant material and animal wastes

**Eaten by:** Lemmings, ground squirrels, fungus gnats, caribou, humans

**Do You Know?** Most fungi that grow in tundra areas, such as the gilled mushroom, are able to grow at temperatures lower than can those that grow in warmer environments.

## 14. MORELS

F

**Traits:** Mushroomlike fungi that look like natural sponges on stalks; the hollow dome-shaped cap is gray-brown to sandy colored and looks like a honeycomb.

**Habitat:** Varies by species, favor spruce forests and old burns

**Foods:** Dead plant material and animal wastes

**Eaten by:** Squirrels, voles, mice, humans

**Do You Know?** Morels are considered one of the finest edible mushrooms and are much sought after in North America and Europe. They grow abundantly in the spring following a forest fire.

## 18. CRUSTOSE LICHENS

F,T

**Traits:** One of four types of lichen, this type looks like a thin crust on rocks and trees.

**Habitat:** Forest and tundra environments

**Foods:** Make their own food by photosynthesis

**Eaten by:** Mites, nematodes

**Do You Know?** Lichens are made of two kinds of organisms: algae and fungi. Algae capture energy through photosynthesis while fungi provide a protective shell and also help absorb water from rain. Sometimes they absorb pollution.

## 15. TRUFFLES

F

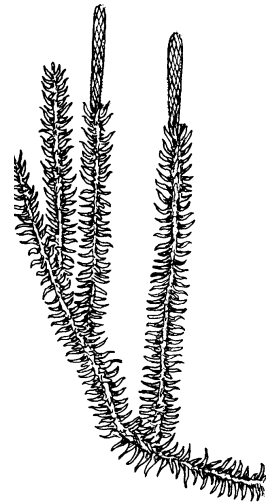
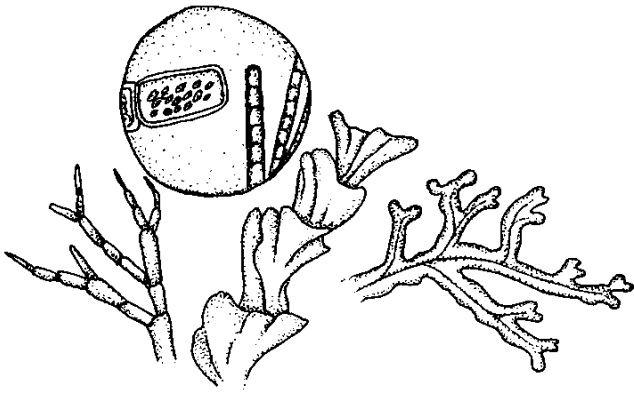
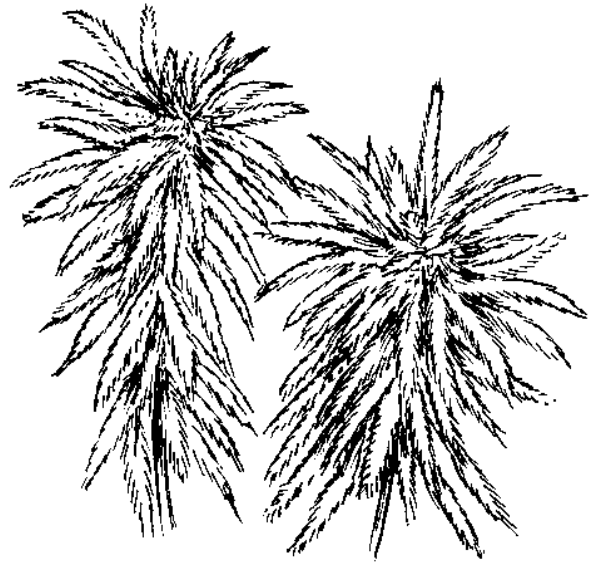
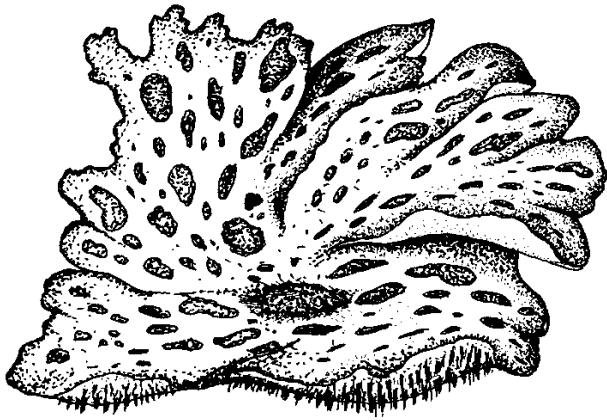
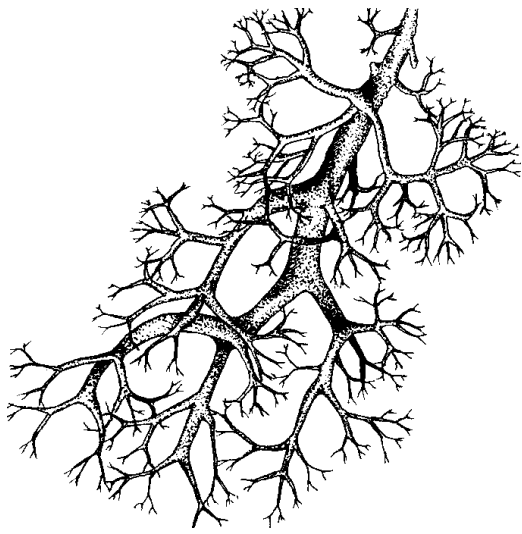
**Traits:** Fungi that produce underground fruiting bodies that look like spongy balls

**Habitat:** Underground in forests, usually in symbiosis with a tree

**Foods:** Sugar supplied by the tree or other plant it associates with and on minerals absorbed from the soil

**Eaten by:** Flying squirrels, voles, humans

**Do You Know?** These fungi help trees and other plants obtain the minerals they need to grow. The organisms that eat them spread their spores throughout the forest.



## 22. MOSSES

F,T

**Traits:** Small plants, either flat and scalelike or with stems and leaves; lack water-conducting cells and true roots; they reproduce by spores that grow in caplike structures, or capsules, at the tips of long stalks.

**Habitat:** Moist soil, rocks, and logs

**Foods:** Make their own by photosynthesis

**Eaten by:** Springtails, mites

**Do You Know?** Mosses have the ability to alternate periods of growth and dormancy, which allows them to survive harsh environments.

## 19. FRUTICOSE LICHENS

F,T

**Traits:** This member of the Fungi Kingdom looks like fine hairs or branches growing on trees and rocks.

**Habitat:** Forest and tundra environments

**Foods:** Lichens make their own food by photosynthesis.

**Eaten by:** Caribou, lemmings, mites, nematodes

**Do You Know?** Lichens are one of the most common climax species that dominates undisturbed tundra and boreal forest habitats. They are two kinds of organisms (fungi and algae) living in symbiosis.

## 23. SPHAGNUM MOSS

F,T,W

**Traits:** A soft-stemmed moss with featherlike leaves, varying from white to green to pink

**Habitat:** Wet sites in coastal wetlands, muskegs, tundra, and forests; often forms thick, spongy mats that cover large areas

**Foods:** Makes its own by photosynthesis

**Eaten by:** Certain small invertebrate animals and microscopic organisms

**Do You Know?** Sphagnum mosses have been used as a substitute for gauze in surgical dressings and as diaper lining by Native Americans.

## 20. FOLIOSE LICHENS

F,T

**Traits:** This member of the Fungi Kingdom resembles curly leaves growing on trees and rocks. It is two kinds of organisms (fungi and algae) living in symbiosis.

**Habitat:** Forest and tundra environments

**Foods:** Lichens make their own food by photosynthesis.

**Eaten by:** Lemmings, mites, nematodes

**Do You Know?** Lichens are able to survive years of unfavorable conditions by becoming dormant. Some specimens have been revived after 100 years of dormancy.

## 24. CLUB MOSSES

F,T

**Traits:** Ground cover plants with stems growing upward or along the ground; tiny, single-veined leaves in pairs or spirals around the stem; the spores develop in conelike structures located at the tips of upright stalks.

**Habitat:** Moist soils in forest and tundra environments

**Foods:** Make their own by photosynthesis

**Eaten by:** Springtails, mites

**Do You Know?** Club mosses become inactive during harsh living conditions and then resume activities when living conditions are good. Despite their name, club mosses are more closely related to ferns than to mosses.

## 21. GREEN ALGAE

W

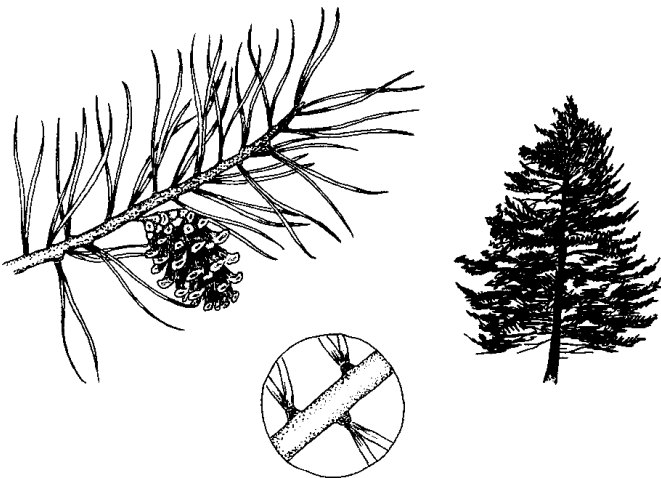
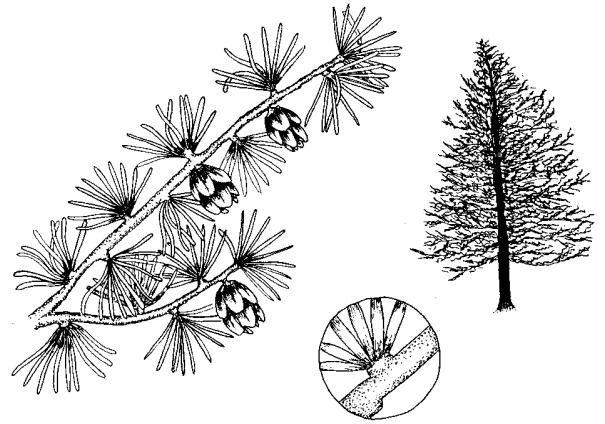
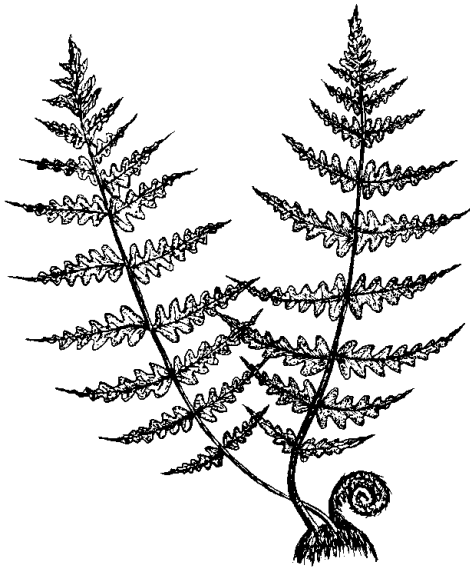
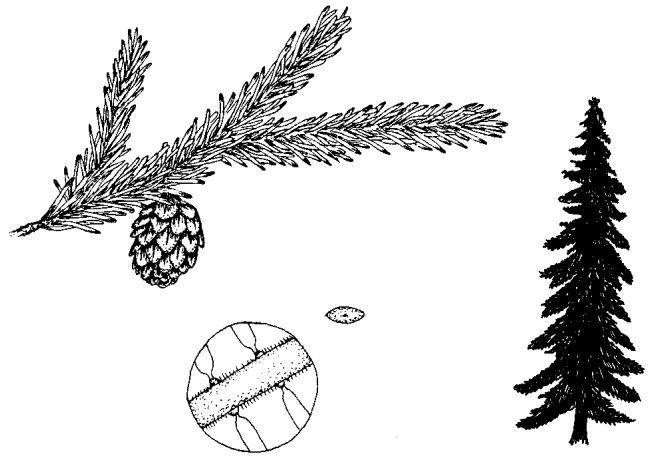
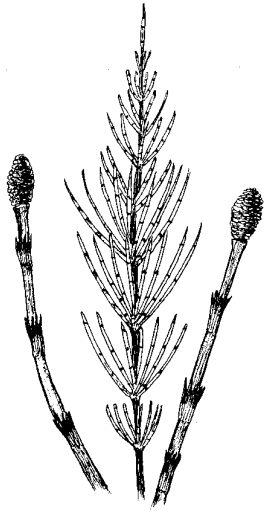
**Traits:** Green algae are single-celled organisms capable of photosynthesis. They occur individually, in filaments, or in colonies. The cells store food in the form of starch.

**Habitat:** Green algae can grow wherever water occurs. Some grow in damp or moist soil or in tree bark.

**Foods:** Make their own by photosynthesis

**Eaten by:** Protozoans, roundworms, small crustaceans, certain mollusks, other aquatic invertebrates, fish, geese, ducks

**Do You Know?** Some algae join with certain fungi to form lichens.



## 28. BLACK SPRUCE

F,W

**Traits:** Small conifer (evergreen) tree with short sparse branches that often droop; needles are long, stiff, blue-green and occur on all sides of the twig; the twigs are covered with very short, reddish hairs.

**Habitat:** Wet bogs, muskegs, and lake margins throughout central, eastern, and southern Alaska

**Foods:** Makes its own by photosynthesis

**Eaten by:** Red squirrels, porcupines, beetles, horntails, aphids, carpenter ants, crossbills, redpolls

**Do You Know?** The stiff-scaled cones of the black spruce stay on the tree for many years and are opened by fire or years of drying in the sun.

## 25. HORSETAIL

F,T,W

**Traits:** Ground-cover plant with distinctly jointed stems that grow from an underground rhizome

**Habitat:** Wet, moist, and dry soils in forests, tundra, and wetlands

**Foods:** Makes its own by photosynthesis

**Eaten by:** Bears, moose, grouse

**Do You Know?** Horsetail stems contain silica (an element in sand). They can be used like a scouring brush to clean pots and pans. Horsetails were among the dominant plants when dinosaurs roamed the earth; many kinds grew to tree size then. Today, only one species grows more than 6 1/2 feet (2 m) tall.

## 29. TAMARACK

F,W

**Traits:** A small- to medium-sized conifer tree with dark gray bark; the leaves are needles that are deciduous (shed in fall) and grow in clusters of 12-20.

**Habitat:** Muskegs throughout central and parts of western Alaska

**Foods:** Makes its own by photosynthesis

**Eaten by:** Porcupines eat the inner bark. Red squirrels cut cones and seeds. Voles and some birds eat the seeds.

**Do You Know?** Tamarack is the only Alaska conifer that sheds its leaves in winter. A certain species of mushroom, the yellow-pored bolete mushroom, grows only with tamaracks.

## 26. FERNS

F,T

**Traits:** Plants with stems, leaves, and roots; most have stems that grow underground; leaves (called fronds) are usually divided into very fine parts; reproduces by spores on the undersides of the leaves or on special fronds

**Habitat:** Moist habitats; most common in coastal forests

**Foods:** Make their own by photosynthesis

**Eaten by:** Grouse, deer, hares, springtails, slugs, humans (in early spring)

**Do You Know?** Young blades or fronds, called fiddleheads, first appear curled at the base of the plant and are edible.

## 30. WHITE SPRUCE

F

**Traits:** Conifer tree with four-angled, sharply pointed needles with white lines on all sides, hairless twigs, and thin gray bark; cones are long, hang downward, and fall off at maturity.

**Habitat:** Well-drained soils in boreal forest

**Foods:** Makes its own by photosynthesis

**Eaten by:** Spruce grouse, porcupines, crossbills, red squirrels, bark and longhorn beetles, horntails, certain moths and flies, spruce aphids, carpenter ants, redpolls, siskins

**Do You Know?** White spruce is used extensively in Alaska for log cabins.

## 27. LODGEPOLE PINE

F,W

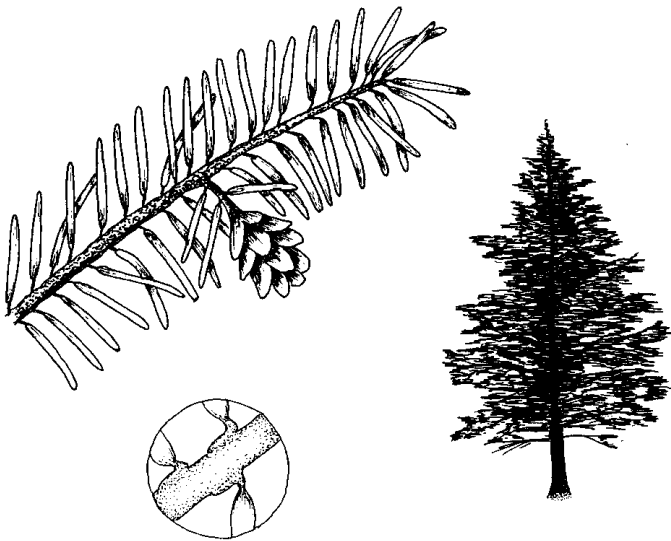
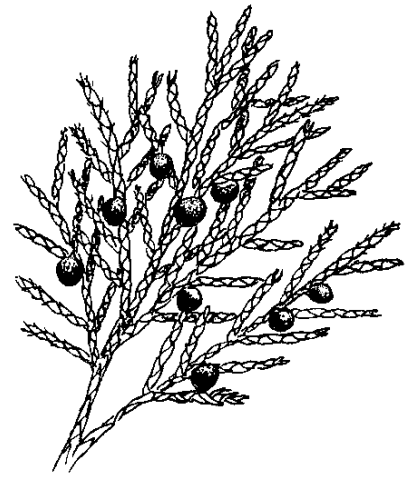
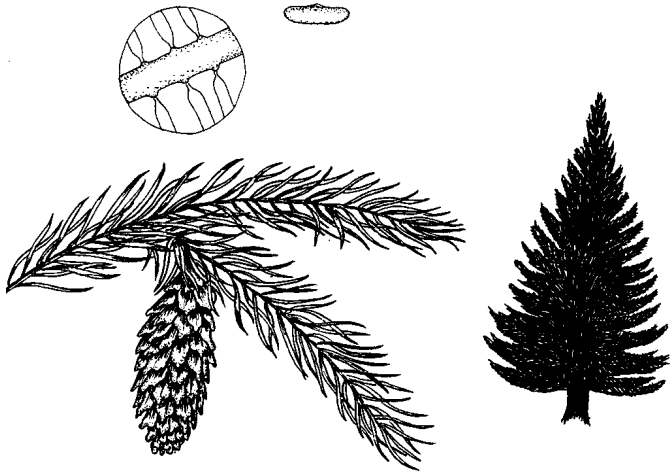
**Traits:** A low-spreading or scrubby conifer tree that has two needles per bundle; sometimes grows as a shrub in poor soil

**Habitat:** Open muskegs and along open lake shores in southeast Alaska; intolerant of shade

**Foods:** Makes its own by photosynthesis

**Eaten by:** The seeds are eaten by pine grosbeaks and squirrels. Porcupines eat the bark. Deer and moose browse younger trees.

**Do You Know?** The lodgepole pine along with its close relative, the shore pine, are the only true pines naturally found in Alaska.



### 34. ALASKA CEDAR

F

**Traits:** Conifer tree with scalelike, flattened leaves in sprays, drooping branches, and gray to brown bark with shreds and fissures; the round cones have four to six scales, each with a pointed knob in its center.

**Habitat:** Wet, cool climate of coastal rainforest

**Foods:** Makes its own by photosynthesis

**Eaten by:** Wood-boring insects, aphids, other herbivorous insects

**Do You Know?** Natives of southeast Alaska made their canoe paddles from this durable, aromatic wood.

### 31. SITKA SPRUCE

F

**Traits:** Conifer tree with sharply pointed needles, flattened with slight ridge; hairless twigs; gray to purplish-brown bark; cones with stiff, long scales fall off every year.

**Habitat:** Well-drained soils in wet, moderate climates of coastal rainforest

**Foods:** Makes its own by photosynthesis

**Eaten by:** Red squirrels, crossbills, porcupines, deer mice, bark beetles, horntails, certain moths and flies, spruce aphids, carpenter ants

**Do You Know?** Sitka spruce is the largest and one of the most valuable trees in Alaska. It is also the state tree.

### 35. CATTAIL

W

**Traits:** Tall plant with broad leaves on a central, reddish-brown spike

**Habitat:** Shallow water and marshes in Interior Alaska

**Foods:** Makes its own by photosynthesis

**Eaten by:** Muskrats

**Do You Know?** Called “the supermarket of the marsh,” all parts can be eaten by humans.

### 32. WESTERN HEMLOCK

F

**Traits:** Conifer tree with needles arranged in two rows along a hairy twig; needles have two white lines on the underside; reddish-gray outer bark with red inner bark

**Habitat:** Coastal forests on deep, well-drained soil at low elevations

**Foods:** Makes its own by photosynthesis

**Eaten by:** Deer, red squirrel, blue grouse, crossbills, pine siskins, bark beetles, horntails, certain moths and flies, spruce aphids, sawflies

**Do You Know?** Alaska Indians made coarse bread from the inner bark of this tree and of the shore pine tree.

### 36. BURR REED

T,W

**Traits:** Plant with long, flat leaves whose flowers and seeds occur in round, burrlike clusters

**Habitat:** Deep or shallow water from alpine to lowland areas

**Foods:** Makes its own by photosynthesis

**Eaten by:** Ducks, swans, sandhill cranes, common snipes, muskrats

**Do You Know?** The shape of the flower heads gives this plant its name. Male and female flowers occur in separate burrs on the same plant.

### 33. MOUNTAIN HEMLOCK

F

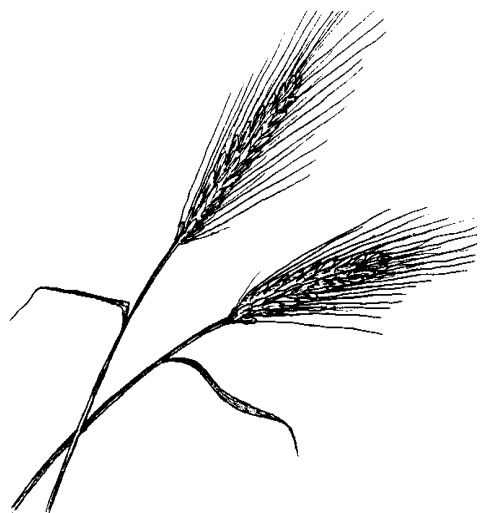
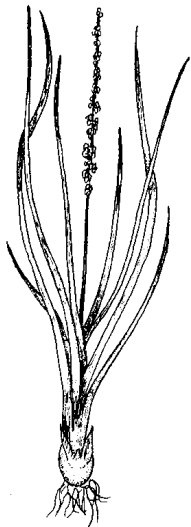
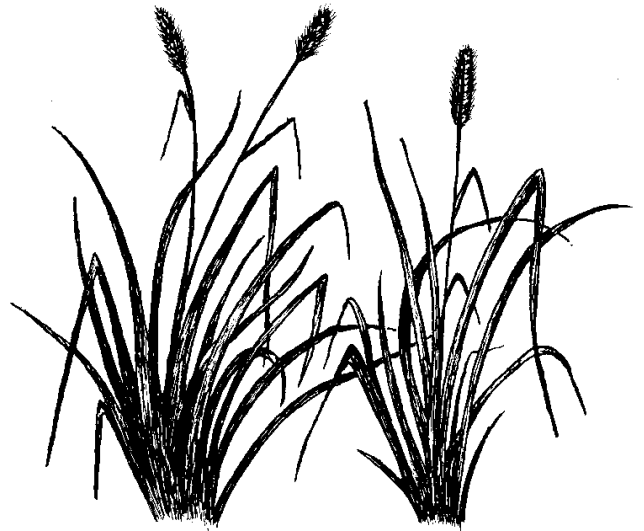
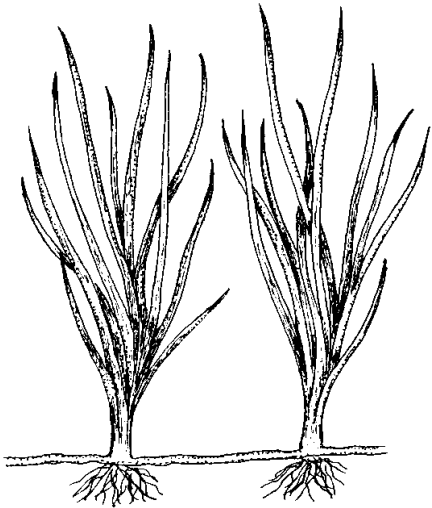
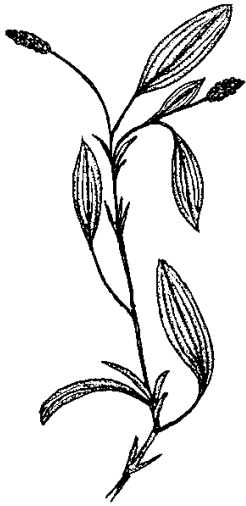
**Traits:** Conifer tree with rounded, blunt needles; fine hair on twigs; gray to dark brown bark; thin-scaled cones hang down

**Habitat:** Wet, moderate climates on well-drained and poorly drained sites of the coastal rainforest

**Foods:** Makes its own food by photosynthesis.

**Eaten by:** Red squirrels, crossbills, porcupines, larvae of bark and longhorn beetles, certain moths and flies, sawflies

**Do You Know?** This tree's scientific name honors the German naturalist Karl Heinrich Mertens who discovered it near Sitka, Alaska, in 1827.



#### 40. PENDENT GRASS

T,W

**Traits:** Emergent, aquatic grass (plant) with long, narrow leaves; small, red-brown flowers occur in one to seven tight clusters (spikelets) at the top of a tall stalk.

**Habitat:** Shallow water of wet tundra and along lake shores and stream banks

**Foods:** Makes its own by photosynthesis

**Eaten by:** Geese, ducks, certain insects, snails other aquatic invertebrates; it is a major spring forage for brown and black bears.

**Do You Know?** Loons and grebes use the leaves and hollow stems of this grass to build nests that float on the water.

#### 37. PONDWEED

W

**Traits:** Aquatic plant with floating leaves having parallel veins; the leaves are submerged on young plants and are long and narrow in most species. Flowers occur in a spike.

**Habitat:** Shallow to deep water in lakes and ponds throughout Alaska

**Foods:** Makes its own by photosynthesis

**Eaten by:** Insect larvae, snails, muskrat, waterfowl

**Do You Know?** There are about 40 species of pondweed in North America, almost all of which are important either as food or shelter for animals.

#### 41. GRASSES

F,T,W

**Traits:** Ground cover plants with long, narrow leaves

**Habitat:** Wet, moist, and dry soils depending on the species

**Foods:** Make their own food by photosynthesis

**Eaten by:** Bison, lemmings, voles, ground squirrels, marmots, goats, sheep; the seeds are eaten by snow buntings, longspurs, redpolls.

**Do You Know?** Their long, narrow leaf shape is less likely to be shredded or ripped by strong winds.

#### 38. EELGRASS

W

**Traits:** A marine (salt water) plant with slender, branched, green stems and leaves with parallel veins; separate male and female flowers grow on the same plant.

**Habitat:** Shallow estuaries and lagoons around the world

**Foods:** Makes its own by photosynthesis

**Eaten By:** Ducks, geese, fish, a variety of marine invertebrates (including mollusks and crustaceans), humans

**Do You Know?** Eelgrass is the primary food for brant geese on their staging areas and wintering grounds.

#### 42. AGRICULTURE GRAINS

W

**Traits:** Grains are actually types of grasses that once grew wild. They have narrow leaves, small green flowers, and round, hollow stems.

**Habitat:** Large agriculture fields throughout the world in regions of moderate climates; barley is grown in Alaska.

**Foods:** Make their own by photosynthesis

**Eaten by:** Bison; many waterfowl eat shoots and seeds, especially during migration and wintering. People worldwide depend upon grains for bread, cereal, and other foods.

**Do You Know?** Some national wildlife refuges grow special crops of grains just for waterfowl to eat during winter.

#### 39. ARROWGRASS

W

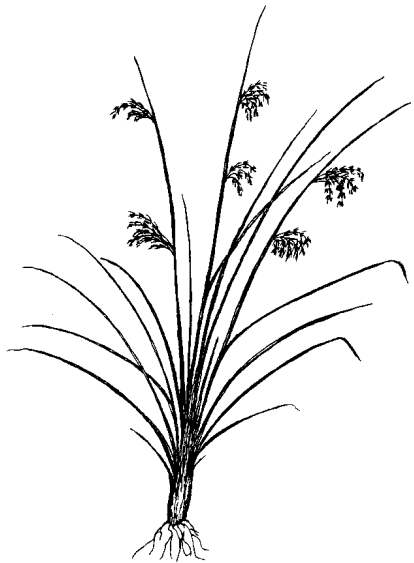
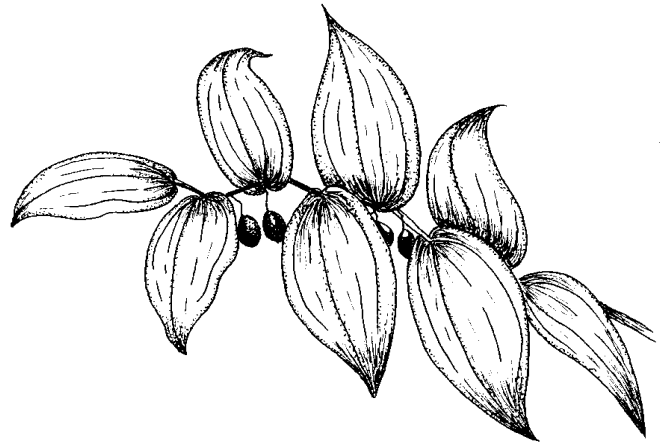
**Traits:** An emergent, aquatic plant with long, narrow leaves that rise from a horizontal root; the rounded fruits are loosely arranged along the stem. May grow 4 to 35 inches (10-89 cm) tall, but they are usually small. This plant contains small amounts of cyanide.

**Habitat:** Fresh or salt water wetlands

**Foods:** Makes its own by photosynthesis

**Eaten by:** Ducks, geese, some aquatic invertebrates

**Do You Know?** The same species of arrowgrass that occur in Alaska also grow in Canada, Europe, Asia, and Siberia.



#### 46. TWISTED STALK

F

**Traits:** Ground-cover plant with long leaves emerging from stem on alternate sides; its pink bell-like flowers grow beneath the leaves, and its berries are orange to dark red.

**Habitat:** Coastal forest sites with open canopies

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth and butterfly larvae, leafhoppers, true bugs, aphids, slugs, snails, mites, grouse, pine grosbeaks, voles, moose, hares, bears

**Do You Know?** The stem of this plant changes angles of growth between leaves to form a staircase shape.

#### 43. SEDGES

T,W

**Traits:** Herbs with long, narrow leaves that have parallel veins and solid, usually triangular, stems ("sedges have edges" to their stems); the tiny, inconspicuous flowers grow in clusters.

**Habitat:** Shallow water, mud, or moist soil of fresh or salt water wetlands

**Foods:** Make their own by photosynthesis

**Eaten by:** Caribou, muskoxen, ground squirrels, lemmings, voles, geese, seed-eating birds such as snow buntings, longspurs, rosy finches

**Do You Know?** The long, narrow leaf shape of sedges reduces fraying by strong winds.

#### 47. WILD IRIS

W

**Traits:** Tall plant with broad, grasslike leaves having parallel veins and a thick, round flower stalk; flowers have three large, purple-violet petals.

**Habitat:** Bogs, meadows, shorelines, riverbanks

**Foods:** Makes its own by photosynthesis

**Eaten by:** Unknown; may be poisonous to most animals

**Do You Know?** This plant is poisonous and causes vomiting.

#### 44. COTTON GRASS

T,W

**Traits:** Herb with long, narrow leaves and solid stems; tiny, inconspicuous flowers grow in tight clusters. Tufts of white cottonlike bristles are present on the seeds.

**Habitat:** Wet tundra, muskegs, coastal wetlands, stream or lake margins

**Foods:** Makes its own by photosynthesis

**Eaten by:** Caribou, muskoxen, lemmings, voles, geese, seed-eating birds such as longspurs, redpolls, snow buntings

**Do You Know?** Tussocks formed by cotton grass provide shelter and nest sites for small tundra birds and mammals.

#### 48. WILLOWS

F,T,W

**Traits:** Broadleaf (deciduous) tree or shrub with long, narrow leaves; both male and female flowers occur in soft, fuzzy catkins.

**Habitat:** Wetlands, forests, and tundras throughout northern regions of the world; prefer moist or wet sites

**Foods:** Make their own by photosynthesis

**Eaten by:** Muskoxen, caribou, moose, snowshoe hares, ptarmigan, redpolls, beaver

**Do You Know?** Willow bark contains salicylic acid, the active ingredient in aspirin, and was used as a painkiller at least 2,400 years ago.

#### 45. RUSHES

T,W

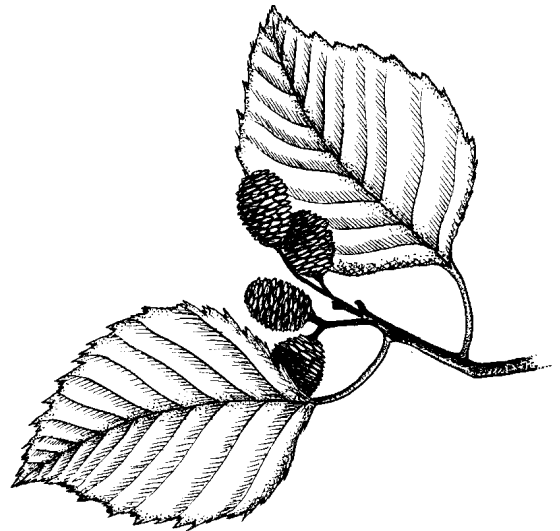
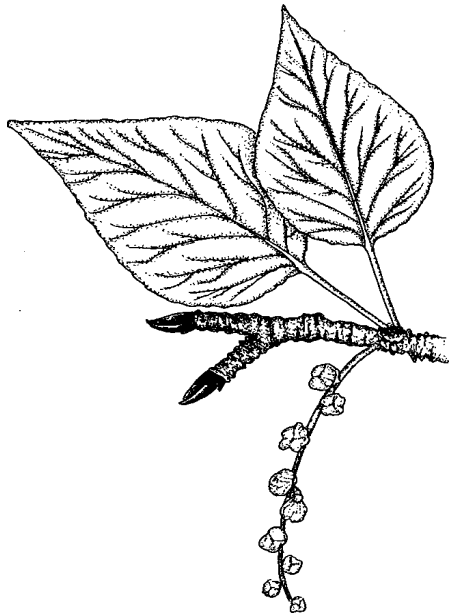
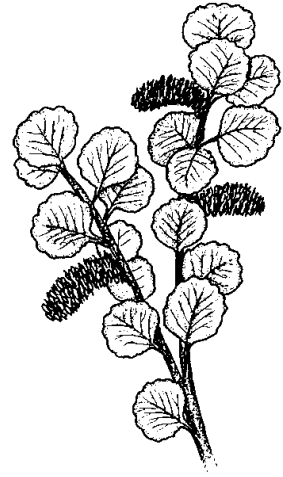
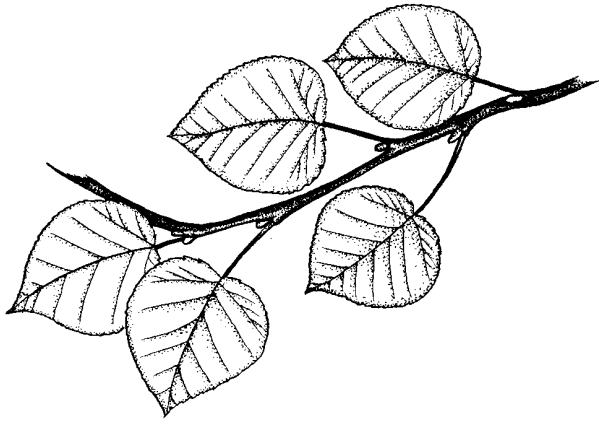
**Traits:** Emergent, aquatic plants with round leaves that have parallel veins; the tiny flowers have three greenish petals and grow in clusters along the side of the leaves.

**Habitat:** Marshes, wet tundra, riverbanks, estuaries, and ponds in temperate, subarctic, and arctic regions

**Foods:** Make their own by photosynthesis

**Eaten by:** Some aquatic invertebrates; seeds are eaten by seed-eating birds.

**Do You Know?** Rushes compete with other aquatic plants and sometimes crowd out other species.



## 52. DWARF BIRCH

F,T,W

**Traits:** A low, broadleaf shrub with small, round deciduous leaves; male and female flowers grow on the same plant in catkins.

**Habitat:** Moist soil, muskegs, rocky alpine slopes, tundra

**Foods:** Makes its own by photosynthesis

**Eaten by:** Ptarmigan, caribou, muskoxen, and seed-eating birds such as redpolls, longspurs, snow buntings

**Do You Know?** This shrub can grow horizontally to avoid the wind and to take advantage of warm soil temperatures. Its perennial growth allows it to survive and reproduce despite the short growing season in tundra regions.

## 49. ASPEN

F

**Traits:** Broadleaf (deciduous) tree with round leaves sharply pointed at the tip; whitish or greenish-gray bark containing black scars and knots; the male and female flowers are on different trees producing cottony seeds.

**Habitat:** Well-drained soils on warm slopes

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, true bugs, leafhoppers, mites, pine grosbeaks, ruffed grouse, moose, snowshoe hares

**Do You Know?** Aspen trees often grow in dense pure stands, especially following forest fires. They live about 80-100 years.

## 53. PAPER BIRCH

F

**Traits:** Broadleaf (deciduous) tree with toothed leaf edges and white, smooth bark; the male and female flowers appear on the same twig, and the seeds develop on a conelike fruit.

**Habitat:** Boreal forests; grows best on sites without permafrost

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, metallic wood borers, pine grosbeaks, redpolls, ruffed grouse, moose, hares

**Do You Know?** Birch are generally found in a mixture with white or black spruce, which replace it in the successional sequence after a fire. Birch sap is used to make syrup.

## 50. BALSAM POPLAR

F

**Traits:** Broadleaf (deciduous) tree with spade-shaped leaves having small, rounded teeth; gray bark containing deep furrows; the male and female flowers grow on different trees. The long, egg-shaped seed capsules within long catkins have tiny, cottony seeds.

**Habitat:** Well-drained soils in boreal forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Aphids, moth larvae, sawflies, true bugs, leafhoppers, moose, snowshoe hares, pine grosbeaks, beaver

**Do You Know?** The wood of balsam poplar is used for boxes, crates, and pulpwood.

## 54. ALDER

F,W

**Traits:** Broadleaf (deciduous) tree with horizontal lines (lenticels) on a smooth, gray bark; the leaf margins are finely toothed, and the fruit is a dark brown cone appearing in groups of three to nine.

**Habitat:** Disturbed sites such as gravel slopes, flood plains, landslides, and along streams and marshes

**Foods:** Makes its own by photosynthesis

**Eaten by:** Deer and moose browse the twigs and leaves. Some birds eat the buds and seeds.

**Do You Know?** Alder roots usually have root nodules that fix nitrogen from the air and enrich the soil. They help other trees grow.

## 51. BLACK COTTONWOOD

F

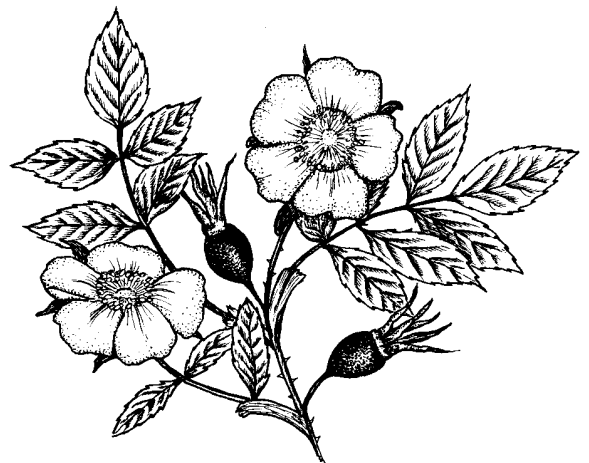
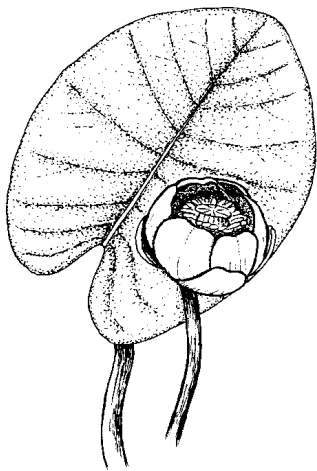
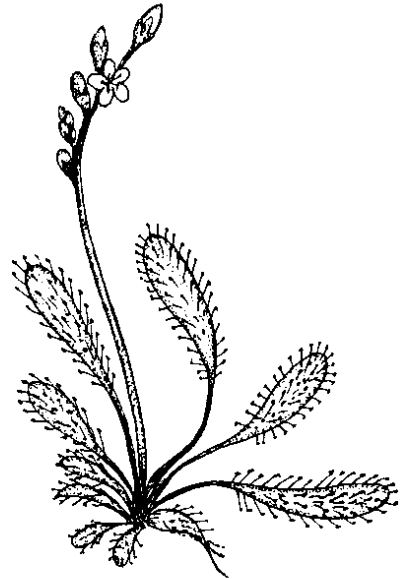
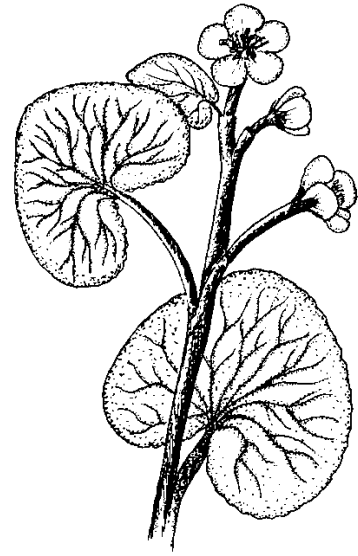
**Traits:** Broadleaf (deciduous) tree with spade-shaped leaves having small, rounded teeth; gray bark containing deep furrows when full-grown; the male and female flowers grow on different trees; round, three-parted seed capsules within long catkins; tiny cottony seeds

**Habitat:** River bottoms in coastal forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, leafhoppers, true bugs, blue grouse, pine grosbeaks

**Do You Know?** Black cottonwood is the largest broadleaf tree in Alaska, growing rapidly to heights of 80 to 100 feet (24-30 m) at maturity.



## 58. MARSH MARIGOLD

W

**Traits:** A small herb with shovel-shaped, net-veined leaves and showy yellow flowers

**Habitat:** Wet and moist places

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moose, muskrats, some aquatic invertebrates

**Do You Know?** Marsh marigolds are poisonous when raw, but are edible after careful boiling.

## 55. WATER SMARTWEED

W

**Traits:** Aquatic plant with long petioles (small stem that attaches leaf to a main stem) on oblong, smooth-edged leaves; leaves often tinged with red; pink flowers grow in dense spikes (upright cluster)

**Habitat:** Wetlands, ponds, bogs

**Foods:** Makes its own by photosynthesis

**Eaten by:** Muskrats, moose, ducks, some aquatic invertebrates

**Do You Know?** This plant grows in wetlands of northern areas around the world.

## 59. SUNDEW

W

**Traits:** Small carnivorous plant with sticky glands covering the leaves; the small flowers have five petals.

**Habitat:** Common in muskeg bogs

**Foods:** Makes its own by photosynthesis and eats insects

**Eaten by:** Unknown

**Do You Know?** Sundew plants trap insects on their sticky leaves; the leaves close around the trapped insect and digest it. The nitrogen and phosphorus in an insect's body are valuable nutrients that the sundew needs to produce its flowers.

## 56. MOSS CAMPION

T

**Traits:** A low-growing, densely tufted plant that looks like a small cushion; has short, flat leaves covered with stiff hairs; small pink-purple flowers

**Habitat:** Dry soil in alpine and lowland tundra

**Foods:** Makes its own by photosynthesis

**Eaten by:** Dall sheep, mountain goats

**Do You Know?** The low growth form and cushion shape of this plant allow it to withstand severe winds and to retain heat.

## 60. WILD ROSE

F

**Traits:** Broadleaf shrub with leaves made of three to nine leaflets whose leaves emerge from the stems on alternate sides; stems covered with small thorns and large pink flowers

**Habitat:** Shaded understory of mature boreal forest, in old burn sites, tall shrub thickets, and along beaches

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, pine grosbeaks, grouse, thrushes, hares, mice, humans

**Do You Know?** The fruit of the rose, called rose hips, is one of the richest known food sources of vitamin C.

## 57. YELLOW POND LILY

T,W

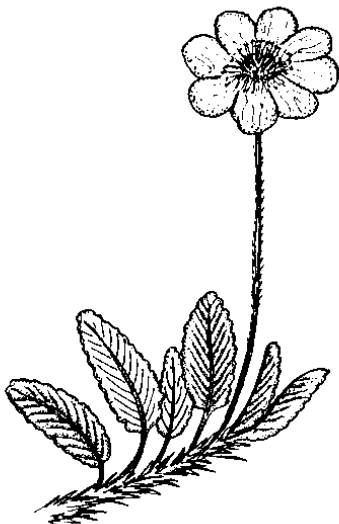
**Traits:** Floating, aquatic plant with large, long-stemmed, heart-shaped floating leaves; its large, yellow flowers have seven to nine petals.

**Habitat:** Ponds and slow streams throughout most of Alaska; bogs and muskegs except in western Alaska and north of the Brooks Range

**Foods:** Makes its own by photosynthesis

**Eaten by:** Roots eaten by muskrats, ducks, and, traditionally, by Alaska Natives.

**Do You Know?** Seeds may be popped like popcorn and served as a cereal or snack.



## 64. MARSH FIVEFINGER

W

**Traits:** A sprawling plant with a woody rootstalk.; leaves are toothed and in separate groups of five to seven leaflets; its flowers are purplish-brown with five pointed petals.

**Habitat:** Very wet meadows, marshes, shallow water, along streams

**Foods:** Makes its own by photosynthesis

**Eaten by:** Unknown

**Do You Know?** Also called marsh cinquefoil.

## 61. MOUNTAIN ASH

F

**Traits:** Broadleaf (deciduous) tree with oblong, toothed leaves, each made of 9-11 leaflets; smooth gray bark, red berries, and showy flowers in large clusters

**Habitat:** Moist, cool climates in coastal forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Aphids, true bugs, leafhoppers, moth larvae; berries are eaten by pine grosbeaks, waxwings, thrushes, and jays. The leaves and buds are a favorite of moose.

**Do You Know?** The fruits from this tree are eaten by many birds, especially in winter.

## 65. SOAPBERRY

F

**Traits:** Broadleaf shrub with oval leaves growing in pairs (opposite) along the stem and covered with reddish-brown hairs on the underside; has small, yellow flowers and red to yellow berries

**Habitat:** Dry, well drained, woody places near rivers and lakes

**Foods:** Makes its own by photosynthesis

**Eaten by:** Bears, grosbeaks, waxwings, grouse, insects such as aphids, larval moths, butterflies

**Do You Know?** The raw berry of this plant is very bitter because of the presence of "saponin," a chemical also found in detergents.

## 62. RASPBERRY AND SALMONBERRY

F

**Traits:** Broadleaf shrubs with leaves made of three leaflets, toothed along edges; showy white or pink flowers; yellow to red fruit of many small seeds encased in fleshy coats

**Habitat:** Moist, cool forest climates

**Foods:** Make their own by photosynthesis

**Eaten by:** Aphids, true bugs, leafhoppers, moth larvae, slugs, grouse, grosbeaks, jays, waxwings, thrushes, crows, sparrows, voles, deer mice, deer, moose, bears, hares, foxes, marten, humans

**Do You Know?** The fruit from these plants are delicious eaten raw and make a very good jam.

## 66. FIREWEED

F

**Traits:** Herb (plant) with long, narrow leaves on a stalk, many reddish-purple flowers along the top of its stem, and cottony seeds

**Habitat:** Disturbed soils and forests with open canopies that allow plenty of sunlight to reach the ground

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, gall aphids, certain flies, true bugs, leafhoppers, slugs, redpolls, sparrows, moose, hares, bears

**Do You Know?** Fireweed is one of the first plants to appear after a fire, sometimes just a few days following a fire. People eat fireweed honey.

## 63. DRYAS

F,T

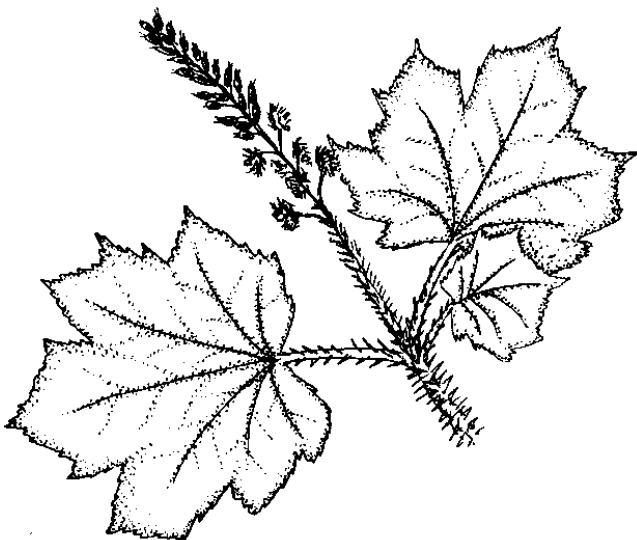
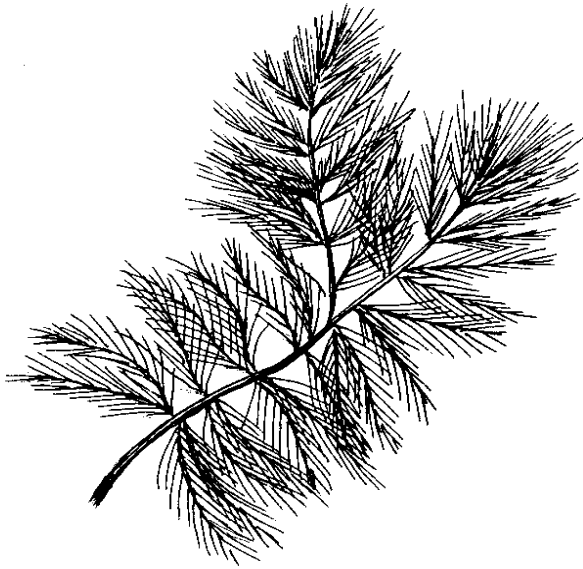
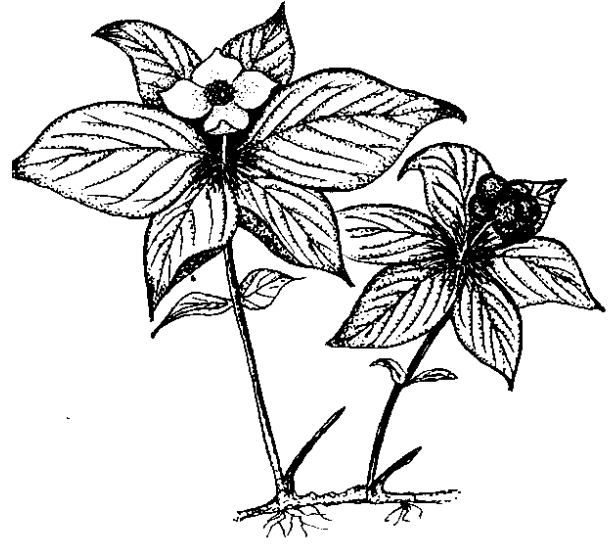
**Traits:** A low-growing, evergreen, herbaceous shrub with narrow, sometimes wavy-edged, leaves; this dwarf plant often appears matted.

**Habitat:** Dry soil of boreal forest and tundra

**Foods:** Makes it own by photosynthesis

**Eaten by:** Caribou, lemmings, ground squirrels, Dall sheep

**Do You Know?** The small, leathery leaves of dryas lose less water than do other kinds of leaves and are more resistant to winds.



## 70. BUNCHBERRY

F

**Traits:** Ground cover plant with four to six oval-shaped leaves arranged in a circle around a central flower cluster; tiny flowers surrounded by white petal-like bracts; clusters of red berries

**Habitat:** Mature and old-growth coastal forests, boreal forests, subalpine forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Aphids, moth larvae, true bugs, leafhoppers, pine grosbeaks, thrushes, sparrows, red squirrels, voles, mice, deer

**Do You Know?** This plant depends on mycorrhizal fungi to help it obtain soil nutrients and on insects to pollinate its flowers.

## 67. MARE'S TAIL

W

**Traits:** Emergent, aquatic plants with 6-12 pale green leaves in a whorl (circle) around the stem; its flowers grow between the stem and leaf.

**Habitat:** In Alaska, one species grows in shallow running water, one in mountain streams, and one in estuaries.

**Foods:** Makes its own by photosynthesis

**Eaten by:** Ducks, certain sandpipers, some aquatic invertebrates

**Do You Know?** Only a few species of mare's tail exist; they occur in wetlands worldwide.

## 71. SKUNK CABBAGE

F

**Traits:** Herb (plant) with large leaves having smooth edges; its flowers grow on a spike surrounded by a bright yellow, modified leaf. It produces its own heat by a chemical reaction to melt snow, allowing its leaves to quickly emerge in the spring.

**Habitat:** Wet, shaded locations in coastal forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Slugs, bears, deer

**Do You Know?** Skunk cabbage depends upon flies to pollinate its flowers and attracts these pollinators with a skunklike odor.

## 68. WATER MILFOIL

W

**Traits:** Emergent, aquatic plant with finely divided leaves that form a circle around the stem; its flowers grow on a spike that sticks above water.

**Habitat:** Shallow, slow-moving or still waters

**Foods:** Makes its own by photosynthesis

**Eaten by:** Muskrats, ducks, some shorebirds

**Do You Know?** The male flowers have larger petals than do the female ones, and both male and female flowers grow on the same plant.

## 72. CROWBERRY

F,T

**Traits:** Hardy, low-growing evergreen shrub whose fruit is an edible blue-black berry

**Habitat:** Moist or wet ground in alpine and lowland tundra and boreal forests

**Foods:** Makes its own food by photosynthesis

**Eaten by:** Berries eaten by lemmings, voles, geese, plovers, snow buntings, longspurs, rosy finches, humans

**Do You Know?** The small, wax-coated leaves are resistant to drying by wind and cold. This plant reduces its exposure to the wind by growing close to the ground. Crowberry is a perennial.

## 69. DEVIL'S CLUB

F

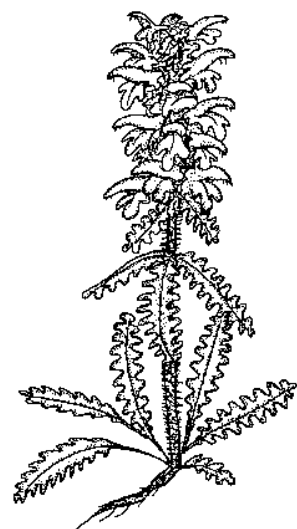
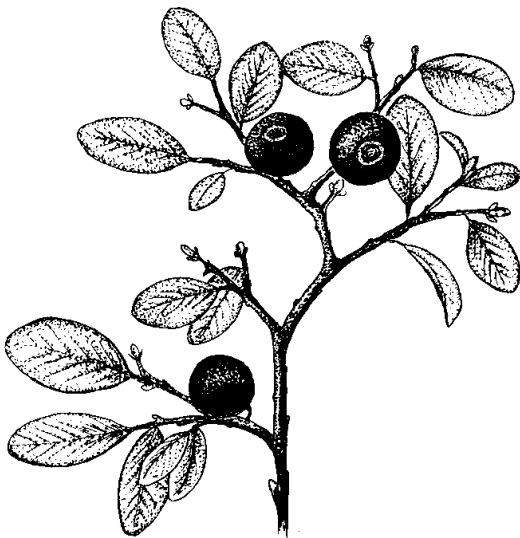
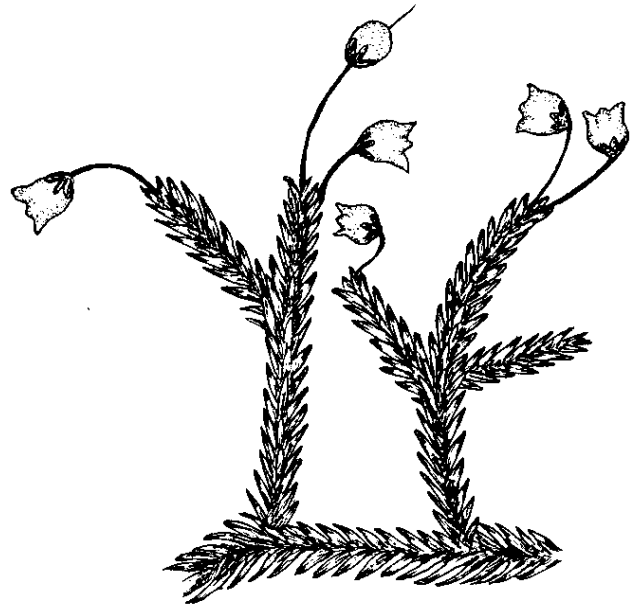
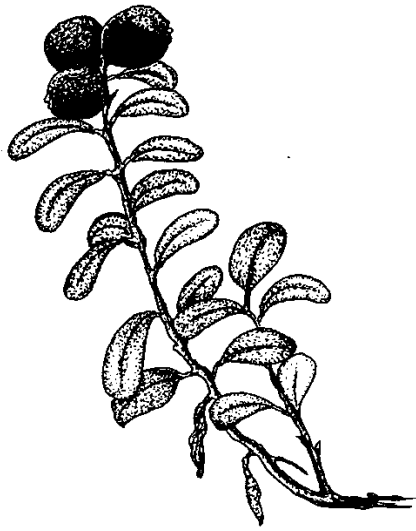
**Traits:** Spines cover the stems and very large leaves of this plant. Large cluster of flowers; fruit is a red berry.

**Habitat:** Coastal forests: old-growth stands and clearings

**Foods:** Makes its own by photosynthesis

**Eaten by:** Deer, red squirrels, leafhoppers, true bugs

**Do You Know?** The bark, stems, and ash have been used by the Tanaina, Eskimo, and Haida people as a remedy for fever and colds and as a general cure-all.



## 76. LABRADOR TEA

F,W

**Traits:** Shrub with long, narrow leaves that are thick and rolled under on the sides and have reddish-brown, hairy undersides; sweet-smelling white flowers grow in clusters at ends of twigs; its fruit is a capsule.

**Habitat:** Poorly drained soils, muskegs, old-growth forests

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, true bugs, leafhoppers, snowshoe hares

**Do You Know?** The strongly aromatic leaves of this plant can be used to make a tasty tea.

## 73. LOWBUSH CRANBERRY (also called LINGONBERRY)

F,T,W

**Traits:** Ground cover plant with small, oval leaves; small, white to pink bell-shaped flowers; small, edible red berry.

**Habitat:** Moist soils in alpine and lowland tundra and boreal forests

**Foods:** Makes its own food by photosynthesis

**Eaten by:** Bears, lemmings, voles, ptarmigan, grouse, geese, plovers, snow buntings, longspurs, moth larvae, aphids, leafhoppers, cranes, humans

**Do You Know?** The small, wax-coated leaves of low-bush cranberry are resistant to drying by wind and cold.

## 77. HEATHER

T

**Traits:** Low-growing, mosslike shrub with white, bell-shaped flowers

**Habitat:** Dry soil of alpine and arctic tundra

**Foods:** Makes its own by photosynthesis

**Eaten by:** Lemmings, ground squirrels

**Do You Know?** Heather's perennial growth allows it to survive despite the short growing seasons in tundra regions. The bell-shaped flowers retain solar heat and deflect wind from the seed-producing flower parts.

## 74. ALPINE BEARBERRY

F,T,W

**Traits:** Low-growing shrub with evergreen leaves and small, white, bell-shaped flowers; fruit is an edible berry.

**Habitat:** Dry and moist soil in alpine and lowland tundra, forests, and muskegs

**Foods:** Makes its own food by photosynthesis

**Eaten by:** Bears, voles, lemmings, ptarmigan, geese, plovers, humans

**Do You Know?** Bearberry plants depend on mycorrhizal fungi to help them obtain nutrients from the soil. In exchange, they provide sugars to the fungi. These plants depend on animals to transport their seeds.

## 78. LOUSEWORT

T

**Traits:** Perennial plant with one to two simple stems arising from the roots and topped by a large flower spike; a dense gray wool covers the plant.

**Habitat:** Dry soil of alpine and lowland tundra

**Foods:** Makes its own by photosynthesis

**Eaten by:** Ground squirrels, lemmings, caribou

**Do You Know?** The dead leaves of this plant do not fall off. They help protect the shoots and flower buds during winter. Lousewort is pollinated by bumble bees.

## 75. BLUEBERRY

F,T,W

(also called HUCKLEBERRY)

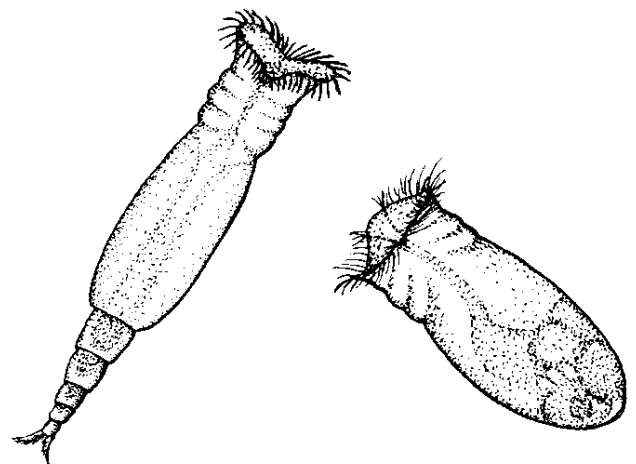
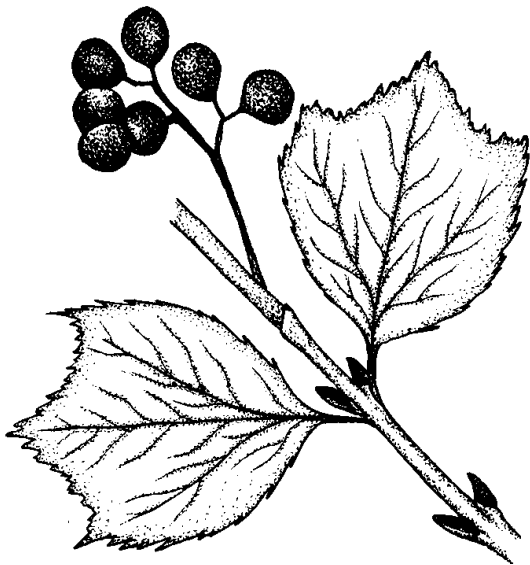
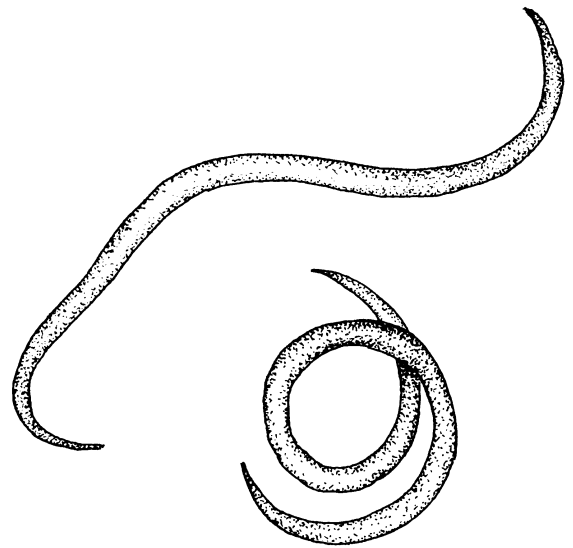
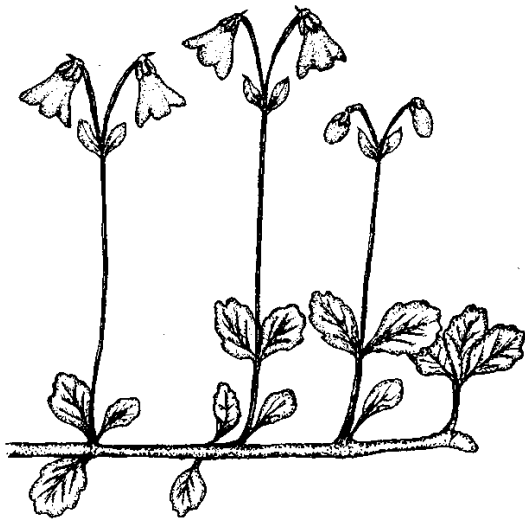
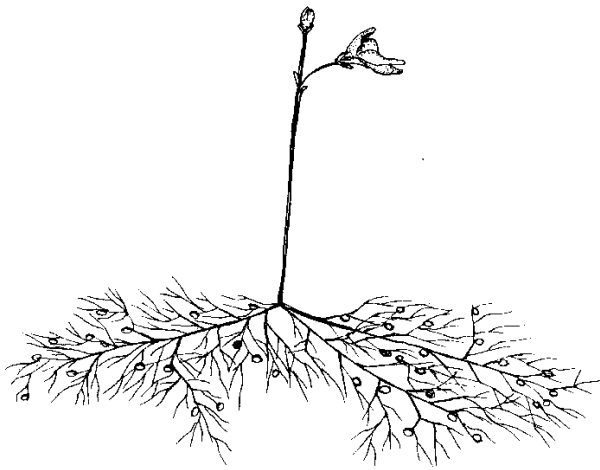
**Traits:** Shrub with small, oval leaves having smooth edges; small, bell-like flowers; blue, black, or red berries.

**Habitat:** Well-drained soils in wet, moderate climates

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, aphids, gall aphids, certain flies, true bugs, leafhoppers, slugs, snails, deer, pine grosbeaks, jays, voles, mice, thrushes, bears, cranes, humans

**Do You Know?** The berries are available in late fall and make good pies, jams, and jelly.



## 82. HAREBELL

T

**Traits:** A slender, delicate perennial plant with clusters of blue bell-shaped flowers

**Habitat:** Dry to moist soil in rock crevices of alpine tundra

**Foods:** Makes its own by photosynthesis

**Eaten by:** Lemmings, voles, ground squirrels, hares

**Do You Know?** This plant's blue, cup-shaped flowers absorb and retain heat better than do light-colored flowers of other shapes.

## 79. BLADDERWORT

W

**Traits:** Carnivorous aquatic plant with finely divided, underwater leaves, bearing small flowers that stick out of the water

**Habitat:** Ponds and lakes throughout Alaska

**Foods:** Makes its own by photosynthesis; also feeds on small insects.

**Eaten by:** Ducks

**Do You Know?** Small air sacs (or bladders) on the underwater leaves are traps for insects. When an insect touches the sensitive hairs outside the trap, the air sac pops open. Water then rushes in, carrying the unsuspecting insect into the trap, and the bladderwort then eats it.

## 83. ROUNDWORMS

F,T,W

**Traits:** Slender worms tapered at both ends, without any segments; invertebrate animals

**Habitat:** Soil, mosses, lichens, leaves, or waste materials, also in water

**Foods:** Dead things, algae, insects, or waste material

**Eaten by:** Centipedes, other invertebrates

**Do You Know?** These worms often hitch rides to new areas on the legs of flies, beetles, birds, or mammals.

## 80. TWINFLOWER

F

**Traits:** Ground cover plant with small, oval leaves with tips divided into three parts; the small, pink, bell-shaped flowers grow in pairs on a tall stalk, and the fruit is a capsule.

**Habitat:** Boreal and coastal forests with an open canopy that allows light to reach the forest floor

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth larvae, leafhoppers, true bugs, deer, voles, sparrows, grouse

**Do You Know?** Twinflower needs mycorrhizal fungi to help it get soil nutrients, and it depends on insects to pollinate its flowers.

## 84. ROTIFERS

F,T,W

**Traits:** Microscopic invertebrate animals having one or more rings of cilia at the front end of the body

**Habitat:** Fresh water, or on mosses, other plants, or lichens

**Foods:** Aquatic detritus (dead organic matter), protozoans, other small animals

**Eaten by:** Roundworms, other invertebrates

**Do You Know?** Terrestrial rotifers survive severe environmental conditions by going dormant for as long as three to four years.

## 81. Highbush CRANBERRY

F

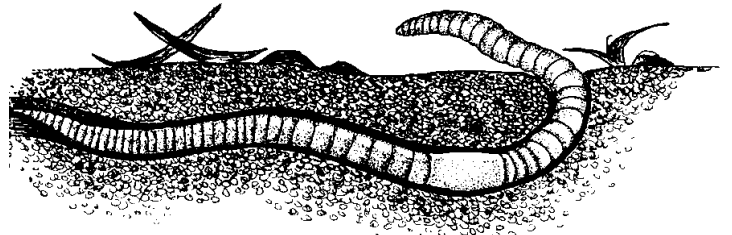
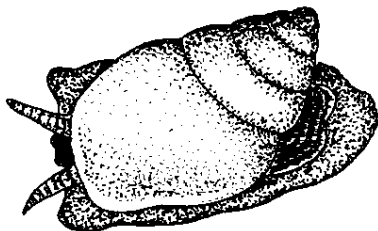
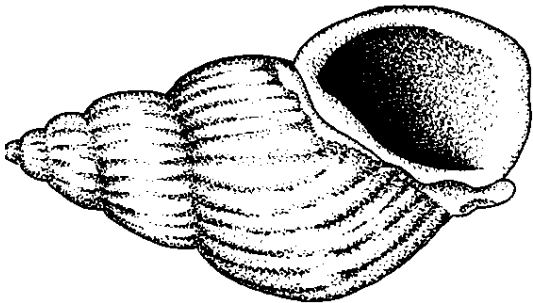
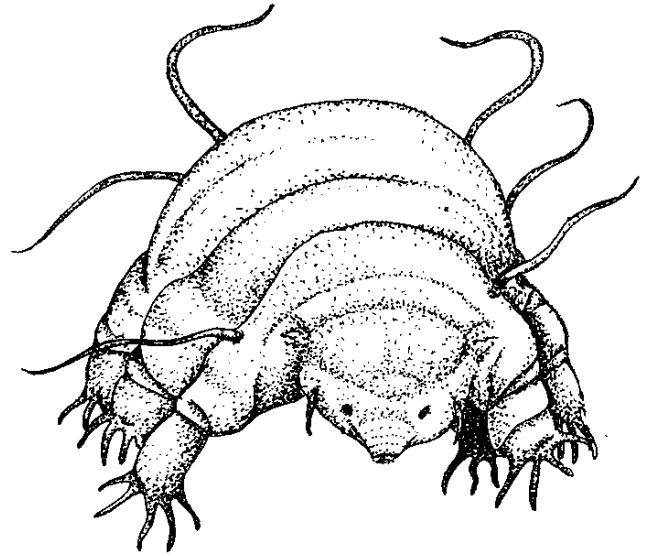
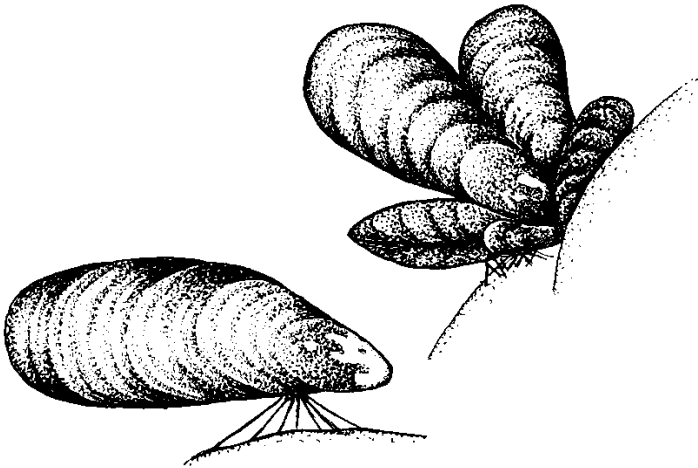
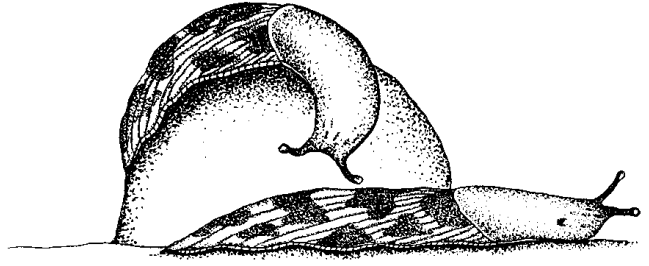
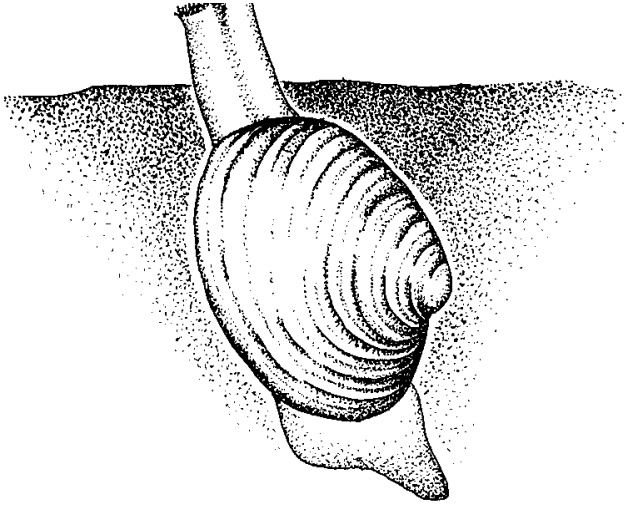
**Traits:** Shrub with three-lobed leaves growing in pairs along the stem; white flowers in clusters at the end of short twigs; bright red berries

**Habitat:** Understory in aspen and birch forests; grows best in well-drained, warm sites

**Foods:** Makes its own by photosynthesis

**Eaten by:** Moth and butterfly larvae, leafhoppers, true bugs, aphids, other insects, ruffed and spruce grouse, pine grosbeaks, voles, moose, hares, bears, humans

**Do You Know?** Highbush cranberry is also called "cramp bark" because the bark is a natural source of muscle relaxant.



## 88. SLUGS

F

**Traits:** A snail-like invertebrate animal without a shell; it has four antennae, with eyes that are located on the tips of one pair of antennae.

**Habitat:** Moist or wet forests, mainly in coastal Alaska; the larvae lives on rotten leaves and logs.

**Foods:** Leaves of plants, including skunk cabbage, salmonberry, and others

**Eaten by:** Certain ground beetles

**Do You Know?** In dry air, a typical slug will lose as much as 16 percent of its body weight per hour if it is active. If dry conditions continue, death will result in a few hours.

## 85. CLAM

W

**Traits:** Invertebrate animal (mollusk) with two-valved shells hinged on one side, a small head, and a compressed body

**Habitat:** Varies by species; some burrow in sand, mud, or rocks.

**Foods:** Filter detritus, algae, protozoans, small crustaceans, insect larvae from the water

**Eaten by:** Snails, sea stars, certain fish, diving ducks, emperor geese, shorebirds, sea otters, humans

**Do You Know?** Clams can burrow very rapidly by extending their "foot" into the sand or mud, expanding the tip to act as an anchor, and pulling themselves down.

## 89. WATER BEARS

F,T,W

**Traits:** Tiny to microscopic invertebrate animals. They are chubby with eight short legs having four to eight claws on each leg; they can survive for years in an inactive state when conditions are bad.

**Habitat:** In the water film around mosses and lichens

**Foods:** Fluids from inside the cells of mosses and lichens

**Eaten by:** Roundworms, centipedes, other invertebrates

**Do You Know?** Most of a water bear's life is spent in a dried, desiccated state. When water is available, it swells to four to five times its dried-up size.

## 86. MUSSEL

W

**Traits:** Invertebrate animal (mollusk) with two-valved shells hinged on one side, a small head, and a compressed body; they attach themselves to a surface with "byssal threads."

**Habitat:** Rocks or wharf pilings in salt water

**Foods:** Filter detritus, algae, protozoans, small crustaceans, insect larvae from the water

**Eaten by:** Snails, sea stars, certain fish, diving ducks, emperor geese, shorebirds, sea otters, humans

**Do You Know?** Mussels are edible.

## 90. SEGMENTED WORMS

F,T,W

**Traits:** Slender-bodied worms with distinct segments along the body; invertebrate animals

**Habitat:** Many habitats; moist soil and decaying vegetation in forests

**Foods:** Varies by species; those that live in soil eat decaying vegetation, algae, or other invertebrate animals.

**Eaten by:** Thrushes, centipedes, ground beetles

**Do You Know?** Some segmented worms, called leeches, are parasites on other animals, including mammals, fish, birds, insects, snails and worms.

## 87. SNAIL

W

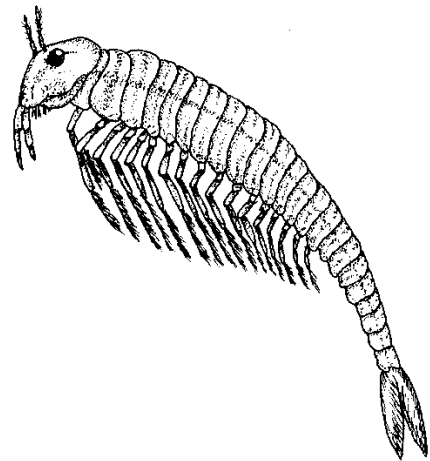
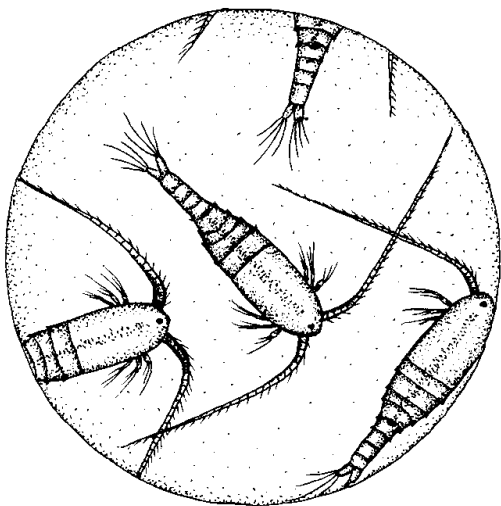
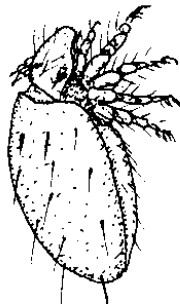
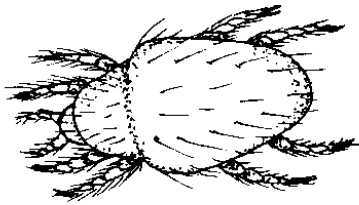
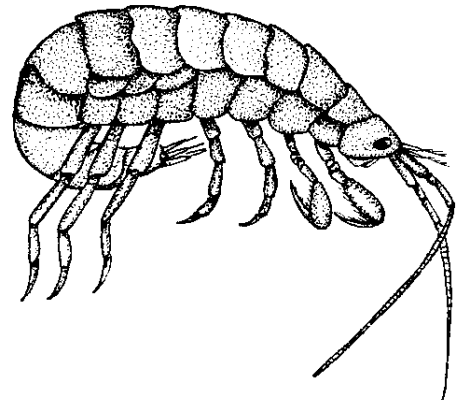
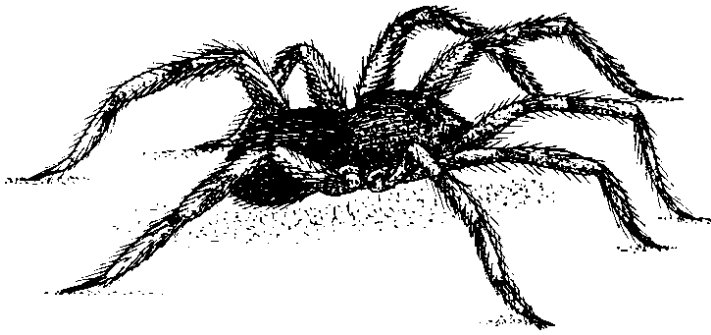
**Traits:** Invertebrate animal (mollusk) with flat creeping foot, a one-piece shell, and a well-developed head

**Habitat:** Land as well as water; on rocks, sandy or silty bottoms, and aquatic plants in either fresh or salt water

**Foods:** Fresh-water snails graze on algae, aquatic plants, detritus, and fungi. Some marine forms prey on other marine animals, including other mollusks.

**Eaten by:** Crustaceans, fish, birds, mammals

**Do You Know?** There are more than 35,000 species of snails.



## 94. AMPHIPOD

W

**Traits:** Crustacean with many legs, a hard exoskeleton, and a body compressed from side to side; eyes of amphipods not on stalks (unlike shrimp); invertebrate animal

**Habitat:** Salt water, fresh-water lakes and ponds

**Foods:** Detritus and small invertebrates

**Eaten by:** Fish, water birds, whales, other aquatic predators

**Do You Know?** Beach amphipods, sometimes called sand fleas, are only 0.75 inches (2 cm) long, but they can leap 1.1 yards (1 m); that is farther than any organism of their size.

## 91. SPIDER

F,T,W

**Traits:** Small invertebrate animals with eight legs; the body appears divided into a large abdomen and a small head with large fangs.

**Habitat:** Soil, leaf litter, plants, rotten logs

**Foods:** Mainly insects such as aphids, flies, rove beetles, springtails, bristletails, others

**Eaten by:** Insect-eating birds such as thrushes and winter wrens

**Do You Know?** The silk produced by spiders may stretch as much as one-fourth its length before breaking. It is one of the strongest natural fibers known.

## 95. WATER FLEA

W

**Traits:** Crustacean (invertebrate animal) with a body compressed side to side; hard shell covers body but not head; uses second set of antennae to swim

**Habitat:** Lakes, ponds, streams

**Foods:** Filters detritus, protozoans, rotifers, crustaceans, algae, diatoms and other plankton from the water

**Eaten by:** Ducks, shorebirds, diving beetles, other aquatic invertebrates, fish

**Do You Know?** Females produce two kinds of eggs: thin-shelled eggs in the summer, which develop without fertilization, and thick-shelled ones in winter, which are fertilized by males.

## 92. MITE

F,T

**Traits:** Tiny to microscopic invertebrate animals, each with eight legs and a pear-shaped body

**Habitat:** Mosses, rotten leaves, humus, forest soils

**Foods:** Varies by species; many prey on roundworms, other mites, and insect larvae; others feed on plants (dead or live) and animals.

**Eaten by:** Centipedes, some ground beetles, ladybird beetles, winter wrens, thrushes, sparrows

**Do You Know?** Some mites ride on the backs of carrion beetles. Other mites parasitize other animals.

## 96. FAIRY SHRIMP

W

**Traits:** Crustacean (invertebrate animal) that swims upside down; 20 body segments with appendages on the first 11-12 segments; eyes on stalks; no hard shell covering body

**Habitat:** Small ponds, springs, meltwater pools

**Foods:** Detritus, small crustaceans, rotifers, protozoans, algae, diatoms and other plankton

**Eaten by:** Ducks, phalaropes, water shrews, diving beetles, other aquatic invertebrates, fish

**Do You Know?** Females are often more abundant than males. In some types, no males are known and develop from eggs that have never been fertilized.

## 93. COPEPOD

W

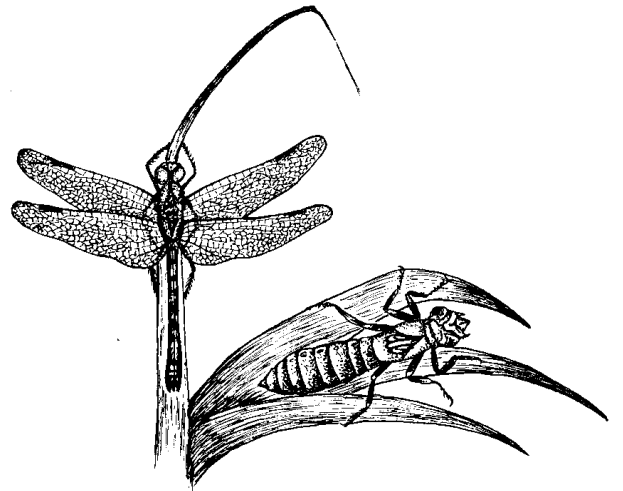
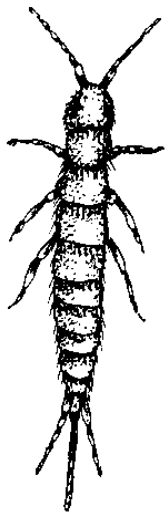
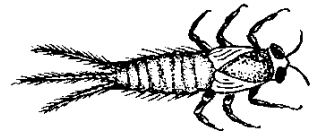
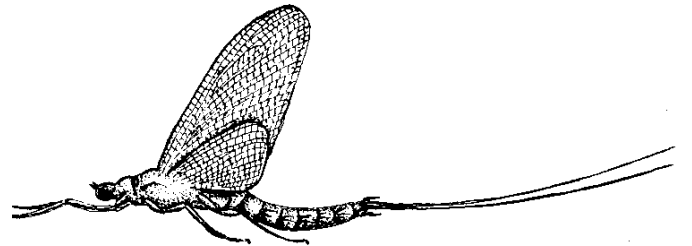
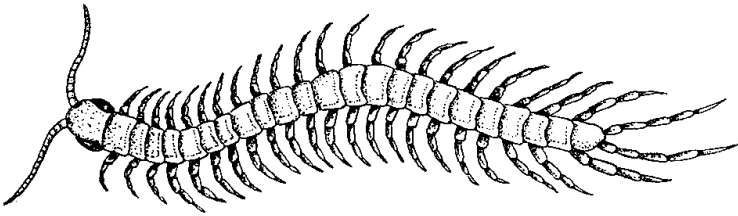
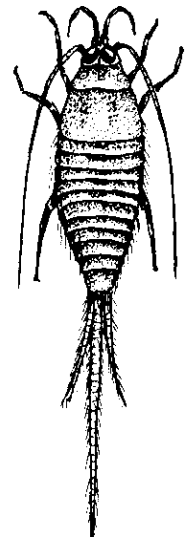
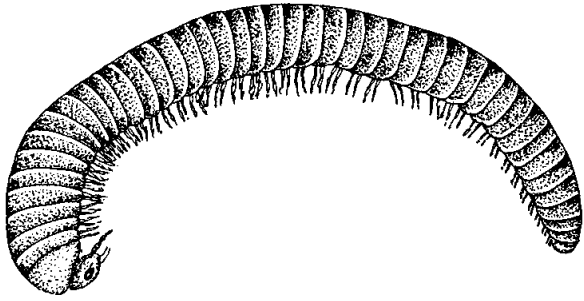
**Traits:** Crustacean (invertebrate animal) with a short, cylindrical body of ten segments; the first few segments have appendages

**Habitat:** Fresh and salt water wetlands and at sea

**Foods:** Filter detritus or algae from the water; some capture small zooplankton. Some are parasites on the gills of fish and large crustaceans.

**Eaten by:** Fish and other aquatic animals, including whales

**Do You Know?** Although they are tiny, copepods and other small crustaceans are the chief food of humpback and gray whales.



**100. BRISTLETAIL****F**

**Traits:** Wingless insects with three tail-like parts and long antennae, often covered with scales; chewing mouthparts; invertebrate animals

**Habitat:** Damp or moist litter and soil of forests and meadows; under bark of logs or under rocks

**Foods:** Decaying leaves

**Eaten by:** Centipedes, shrews, thrushes, ground beetles

**Do You Know?** These insects are able to run rapidly or jump.

**97. MILLIPEDE****F**

**Traits:** Slender-bodied, wormlike invertebrate animals with distinct segments along the body, two leglike structures on each segment

**Habitat:** In Alaska's coastal forests: under rocks or logs and in rotten leaves, wood or soil

**Foods:** Varies by species; decaying plants and fungi or centipedes, worms, or insects

**Eaten by:** Thrushes, sparrows, wrens, ground beetles

**Do You Know?** Some kinds have poison glands that secrete hydrogen and cyanide. Millipedes will coil up when disturbed.

**101. MAYFLIES****W**

**Traits:** Delicate insects with two to three hairlike parts at the end of the abdomen; rear wings are smaller than forewings; invertebrate animal

**Habitat:** Adults: near water; nymphs: streams, lakes, ponds

**Foods:** Nymphs feed on diatoms, algae, and detritus; adults cannot feed because their mouth parts do not function.

**Eaten by:** Diving beetles, frogs, fish, waterfowl, shorebirds

**Do You Know?** Most adult mayflies live for only two to three days; some live for just one to two hours.

**98. CENTIPEDE****F**

**Traits:** A small, wormlike invertebrate animal with two legs on each of its body segments; all have poison claws for capturing prey.

**Habitat:** Soil and humus or beneath stones, bark, or logs

**Foods:** Invertebrates that live in the soil, including springtails, bristletails, ground beetles, fly larvae, flea larvae, mites, worms, snails

**Eaten by:** Thrushes, winter wrens

**Do You Know?** Centipedes have poison glands on their jaws that can cause pain if they bite you. Not usually dangerous to people.

**102. DRAGONFLY****F,W**

**Traits:** Insect with long, narrow abdomen; six legs, large eyes and four wings; invertebrate animal

**Habitat:** Adults: near water; nymphs: bottom of streams and ponds or on aquatic plants

**Food:** Adults prey on small flying insects, including mosquitos and black flies. Nymphs prey on mosquito larvae, snails, tadpoles, and small fish.

**Eaten by:** Adults eaten by flycatchers, fish, and swallows; dippers feed on nymphs.

**Do You Know?** Adults catch mosquitos in the air with their basketlike legs and eat their prey "on the wing."

**99. SPRINGTAIL****F,T,W**

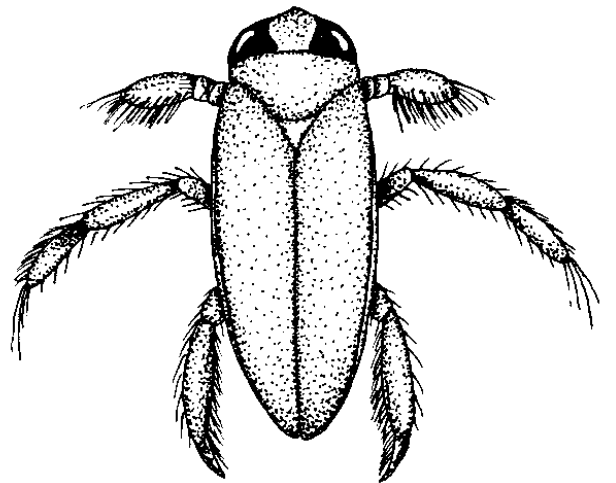
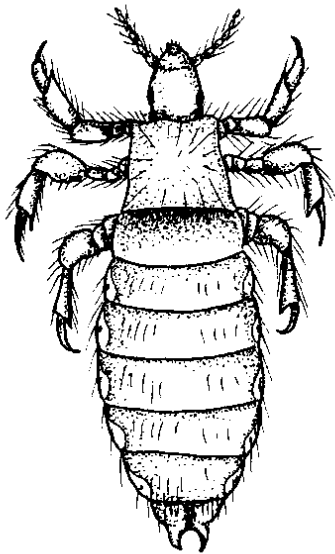
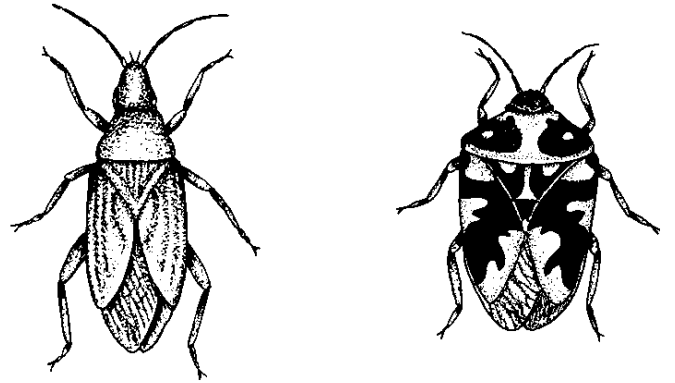
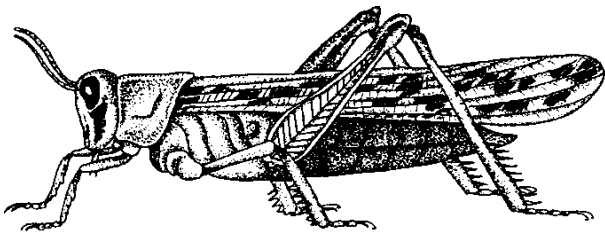
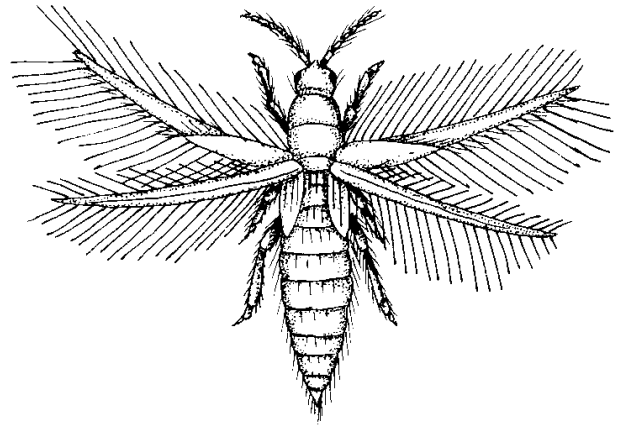
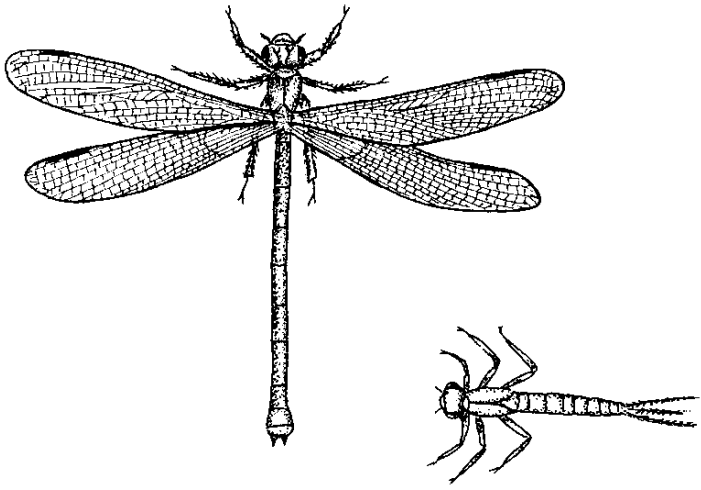
**Traits:** A small, wingless insect (invertebrate animal) with chewing mouthparts and a tube on the underside of the first abdominal segment

**Habitat:** Soil, litter, decaying logs, mosses; some in trees, and a few live in groundwater

**Foods:** Algae, lichens, pollen, fungal spores, decaying materials

**Eaten by:** Centipedes, ground beetles, spiders, shrews, birds

**Do You Know?** This insect's furcula (tail-like forked organ) folds down under the body and releases, springing the animal three to four inches (7-10 cm) into the air.



**106. THRIP****F**

**Traits:** Tiny winged or wingless long-bodied insects; if winged, they have four narrow wings with fringes of long hairs; antennae, sucking mouthparts

**Habitat:** Flowers and leaves of plants

**Foods:** Flowers, leaves, buds, fruits; few eat fungal spores, mites, and small insects.

**Eaten by:** Warblers, chickadees, creepers, wrens, ants, hornets, ground beetles, lacewings

**Do You Know?** Some thrips carry microscopic organisms that cause plant diseases.

**103. DAMSELFLY****W**

**Traits:** Insects with very large eyes and short antennae; adults have four wings of the same size.

**Habitat:** Adults: near water; nymphs: on aquatic plants or the bottom of streams and ponds

**Foods:** Adults prey on flying insects, including midges and mosquitos. Nymphs eat mosquito larvae, tadpoles, and small fish.

**Eaten by:** Diving beetles, frogs, fish, waterfowl, shorebirds

**Do You Know?** Fossil records indicate that some prehistoric relatives of damselflies had wingspans of 27 inches (69 cm).

**107. TRUE BUG****F,T,W**

**Traits:** Front wings thick, colored, and hardened near body; wings thin and often clear at the tips; held flat over body. Beaklike mouthparts at front of head

**Habitat:** Variety of habitat types

**Foods:** Varies by species; some live only on the species of plant they eat; others are predatory.

**Eaten by:** Chickadees, thrushes, warblers, shrews, wasps, ground beetles

**Do You Know?** Many true bugs give off odors to repel predators.

**104. GRASSHOPPER****F,W**

**Traits:** Insects with large hind legs for jumping; thickened, narrow front wings and hind wings that are clear and large; all have chewing mouthparts.

**Habitat:** Places with herbs and grasses

**Foods:** Leaves, stems, other parts of plants

**Eaten by:** American kestrels and other insect-eating birds

**Do You Know?** Grasshoppers serve as an important food source for birds and mammals.

**108. WATER BOATMAN****W**

**Traits:** Aquatic insect with four long legs used for swimming; front legs modified to form scoops; the nymphs and adults look alike.

**Habitat:** Margins of lakes, ponds, estuaries

**Foods:** Decaying leaves

**Eaten by:** Diving beetles, frogs, fish, waterfowl, shorebirds

**Do You Know?** Water boatmen are like scuba divers. They trap an air bubble under their wings at the water surface, then use this "air tank" to breathe while diving underwater.

**105. LICE****F,T,W**

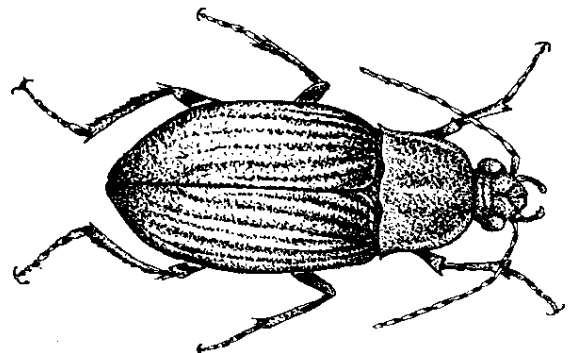
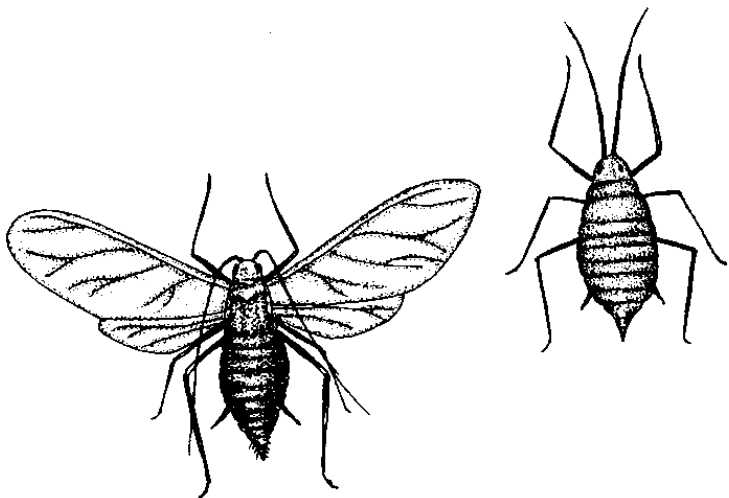
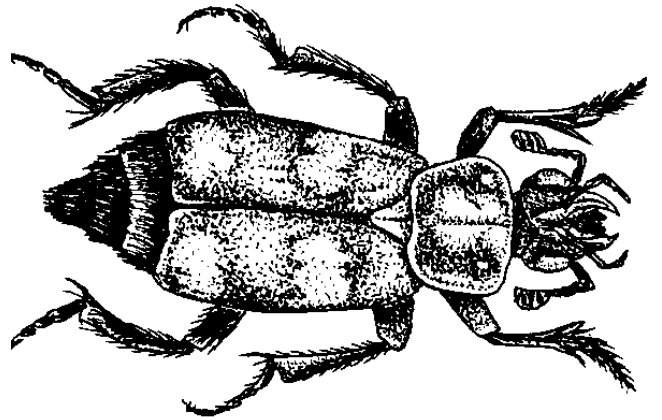
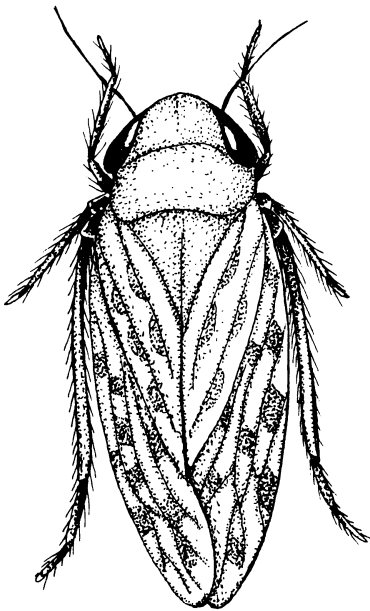
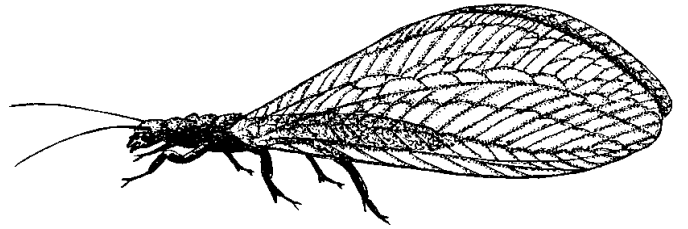
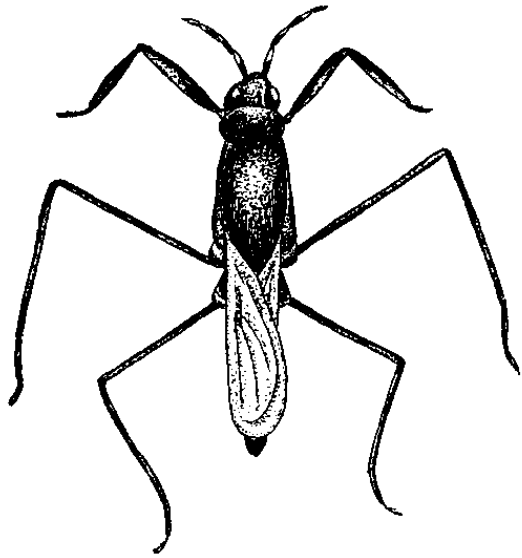
**Traits:** Small, wingless insects with sucking or chewing mouthparts; invertebrate animals

**Habitat:** Skin, fur, or feathers of birds and mammals

**Foods:** Varies by species; some suck blood of mammals or birds; others eat skin, feathers, or fur.

**Eaten by:** Sometimes eaten by birds or mammals during grooming

**Do You Know?** All lice are parasites of birds or mammals. Some blood-sucking lice carry microscopic organisms that cause diseases in mammals and birds.



### 112. LACEWINGS

F,W

**Traits:** Green or brown insects with large, clear wings with netlike veins; small head with large eyes and chewing mouthparts; long antennae

**Habitat:** Leaves of trees and shrubs; Eggs are attached to a leaf by a thread the female forms. Larvae spin cocoons.

**Foods:** Adults eat pollen, nectar, and aphid honeydew. Larvae prey on mites, aphids, and other insects.

**Eaten by:** Thrushes, warblers, chickadees, kinglets, hornets, dragonflies, bats, shrews

**Do You Know?** Green lacewings have glands on their bodies that emit foul odors when the insect is handled.

### 109. WATER STRIDER

F,T,W

**Traits:** Insect with body and long legs covered with stiff, waterproof hair that allows the insect to “skate” across the water surface

**Habitat:** Ponds and streams

**Foods** Small living or dead insects on the water surface

**Eaten by:** Fish, water birds, water shrews

**Do You Know?** A water strider will sink and drown if the hairs on its legs become wet and it cannot reach a place to dry out.

### 113. CARRION BEETLES

F,T

**Traits:** Large, round-bodied insects with thickened front wings; black with red, orange, or yellow markings; clubbed antennae

**Habitat:** Soil and litter of forests and other habitats

**Foods:** Dead animals and other insects, such as fly larvae, that feed on dead animals; the adult female lays her eggs and buries them with a dead animal.

**Eaten by:** Thrushes, shrews, mice, voles

**Do You Know?** All carrion beetles have mites riding on their backs. These mites get a free ride to new food sources, but do not harm the beetle. This is an example of commensalism.

### 110. LEAFHOPPERS

F,T,W

**Traits:** Insect with front pair of wings thin and clear, or only slightly colored; held rooflike over body; Beaklike mouth comes out of the rear underside of the head; one or more rows of spines on the hind legs.

**Habitat:** Plants in forests and other habitats

**Foods:** Sap of plants

**Eaten by:** Warblers, thrushes, chickadees, shrews, ground beetles, centipedes

**Do You Know?** Leafhoppers often discharge a clear, watery fluid called “honeydew,” which attracts other insects (especially ants).

### 114. GROUND BEETLES

F,T

**Traits:** Dark, flattened insects with thick front wings and grooves running from front to back; long legs, large mouthparts

**Habitat:** In most habitats on land

**Foods:** Varies by species; dead animal remains, insects (such as caterpillars), slugs, snails

**Eaten by:** Jays, thrushes, wrens, sparrows, centipedes

**Do You Know?** Most ground beetles are active only at night and hide during the day under logs, rocks, or leaf litter. Tundra species produce antifreeze that allows them to survive freezing temperatures.

### 111. APHIDS

F,T,W

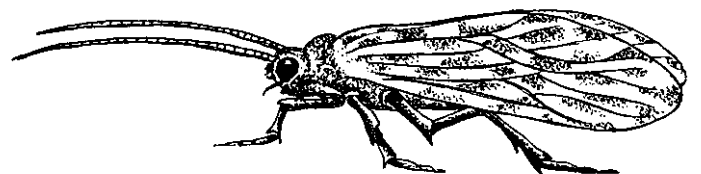
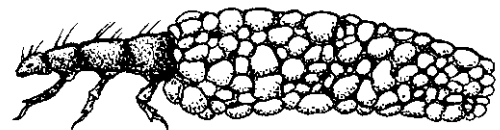
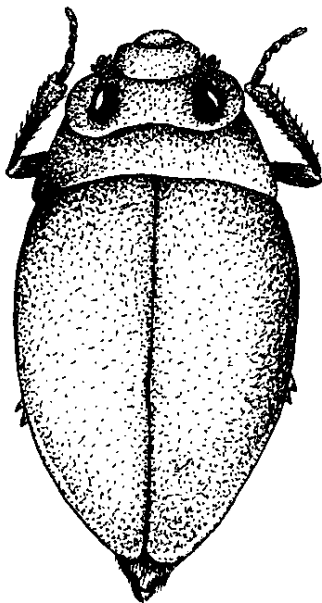
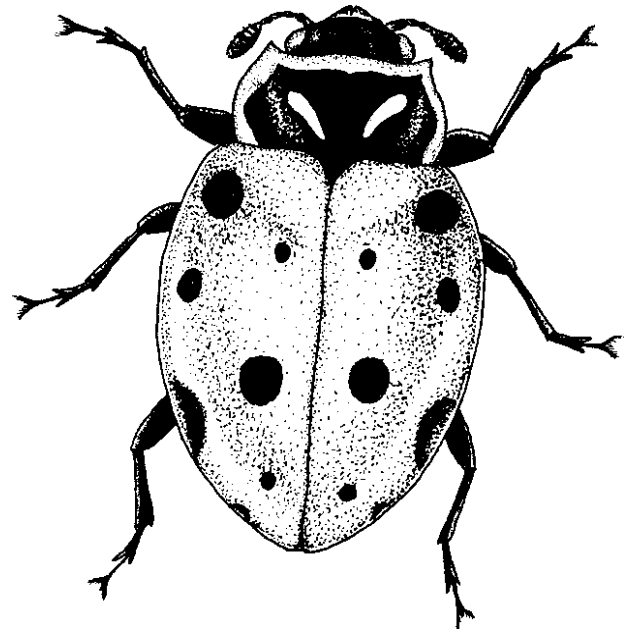
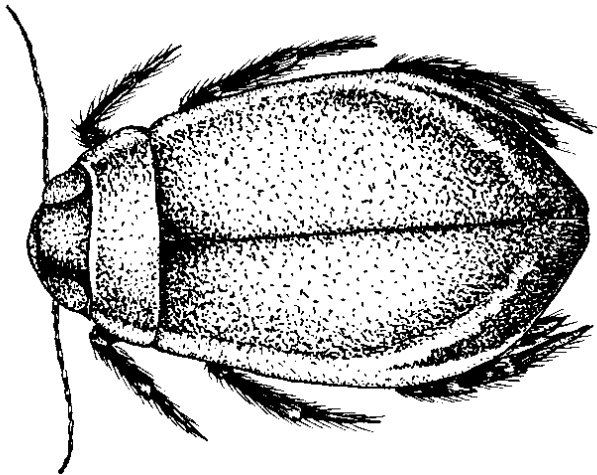
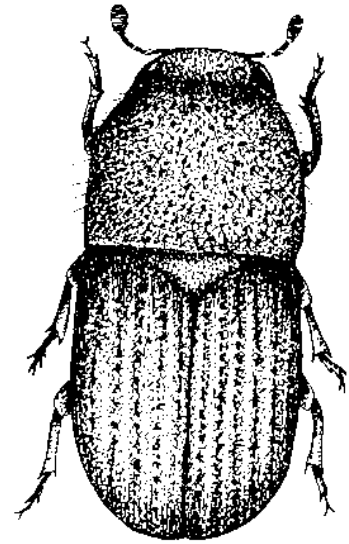
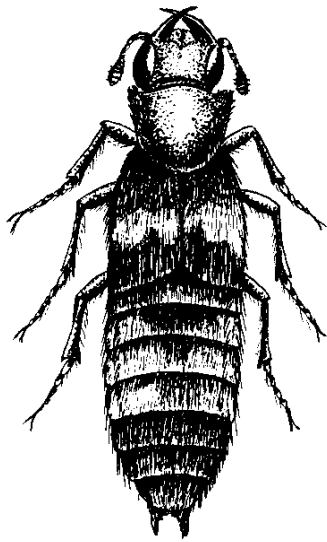
**Traits:** Pear-shaped insects with winged and wingless forms in the same species; most have two tubes (called cornicles) on the top of their abdomens.

**Habitat:** Leaves and stems of plants

**Foods:** Sap of plants; they cause plant leaves to wilt, curl, and turn yellow

**Eaten by:** Ants, wasps, ladybugs, warblers, chickadees, kinglets, wrens, sparrows

**Do You Know?** Aphids produce a secretion, called honeydew. To obtain this honeydew, certain ants protect and tend aphids.



## 118. BARK BEETLES

F

**Traits:** Small, round-bodied insects with thickened front wings; small antennae with clubs on the tips

**Habitat:** Under tree bark

**Foods:** Varies by species; majority eat the underside of tree bark or wood; others eat fungi that grow in the tunnels the beetles bore into wood

**Eaten by:** Woodpeckers, brown creepers, ichneumon larvae

**Do You Know?** Most bark beetles need fungi to break down and digest wood. Some species have these microscopic organisms living in their stomachs.

## 115. ROVE BEETLES

F,T

**Traits:** Dark, flattened insects with short, thick front wings and long, slender bodies; some have large mouthparts that cross at the tips; May be covered by hairs

**Habitat:** Soil in forests and other habitats

**Foods:** Varies by species; dead animal or plant remains, insects such as ants

**Eaten by:** Thrushes, jays, wrens, sparrows, centipedes, ground beetles, mice, shrews

**Do You Know?** Some rove beetles live in the nests of mammals.

## 119. LADYBIRD BEETLES

F

**Traits:** Brightly colored insects with very round bodies and thickened front wings, usually with spots on them; larvae are usually dark with bands of color and covered with spines.

**Habitat:** Leaves and stems of plants in forests, shrub thickets, and meadows

**Foods:** Aphids, other small insects, mites; a few species eat plant leaves.

**Eaten by:** Warblers, chickadees, thrushes

**Do You Know?** Also known as ladybugs, the adult beetles gather by the thousands and hibernate under fallen branches and rocks.

## 116. DIVING BEETLES

W

**Traits:** Aquatic insects; adults are oval-shaped and have legs with hairlike fringes; Larvae have large heads, long mandibles, and eight to ten abdominal segments.

**Habitat:** Ponds, lakes, streams, rivers, estuaries

**Foods:** Adults and larvae prey on aquatic insects, small fish, and tadpoles.

**Eaten by:** Fish, water birds, water shrews

**Do You Know?** Diving beetles obtain air at the surface of the water, but can remain underwater by carrying an air bubble with them.

## 120. CADDISFLIES

W

**Traits:** Adults have wings covered with hairs. Long antennae. Larvae have hooklike parts at the ends of their abdomens and some have feathery gills.

**Habitat:** Adults are nocturnal and rest in cool, dark places. Larvae live in ponds, lakes, and streams.

**Foods:** Adults eat flower nectar. Larvae eat aquatic plants, algae, diatoms, and aquatic insect larvae.

**Eaten by:** Diving beetles, frogs, fish, waterfowl, shorebirds

**Do You Know?** Many larvae build cases made of leaves, twigs, or sand in which to pupate.

## 117. WHIRLIGIG BEETLES

W

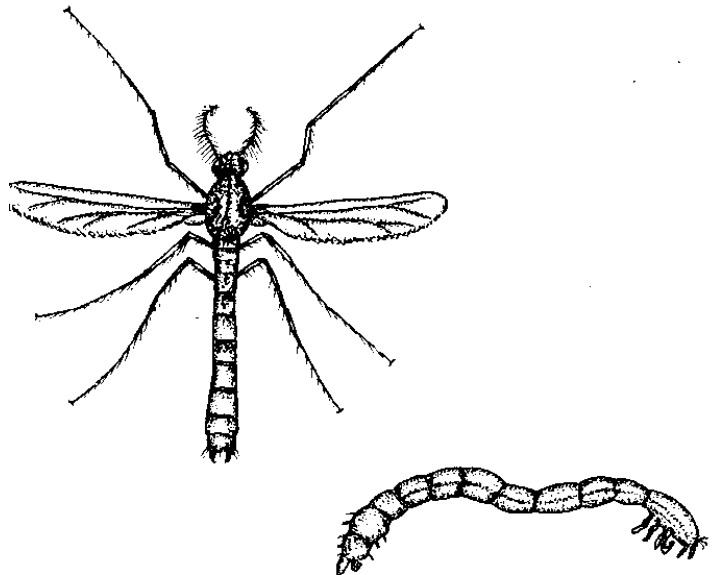
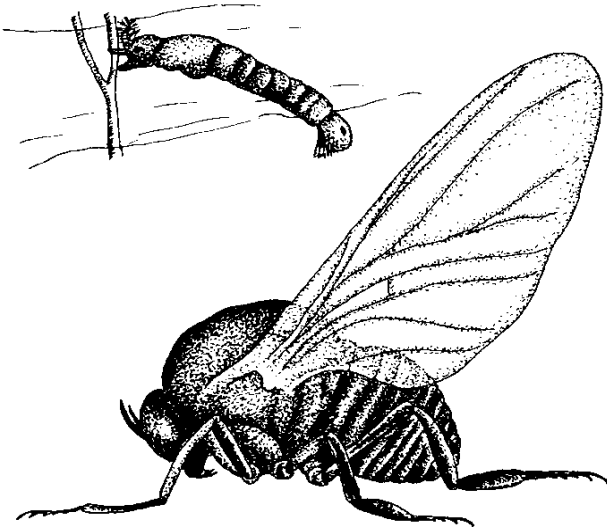
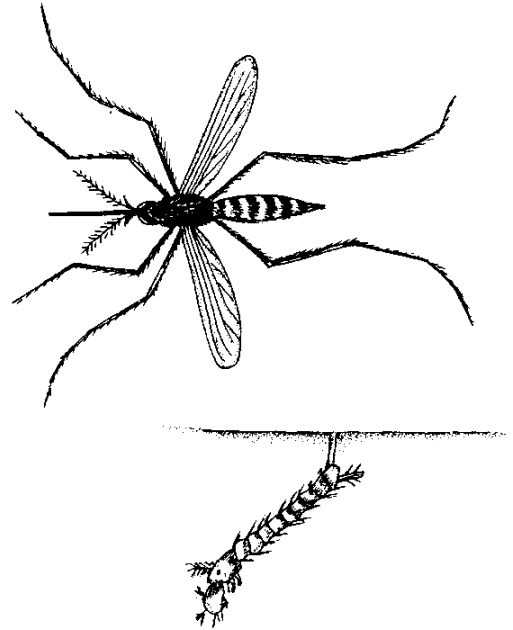
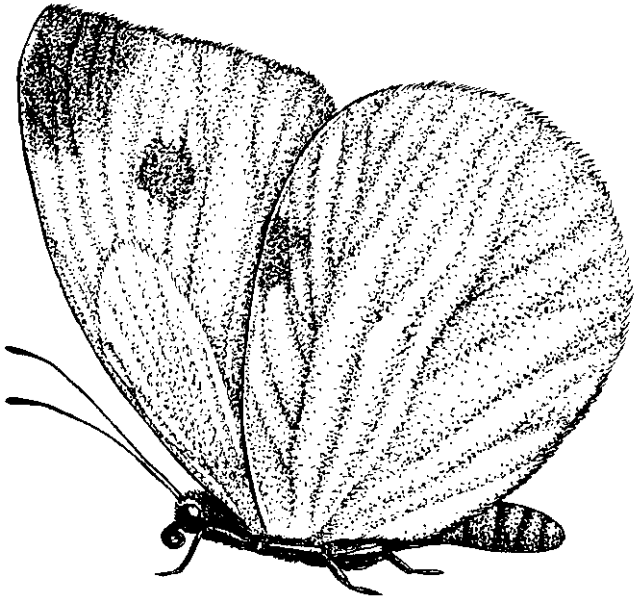
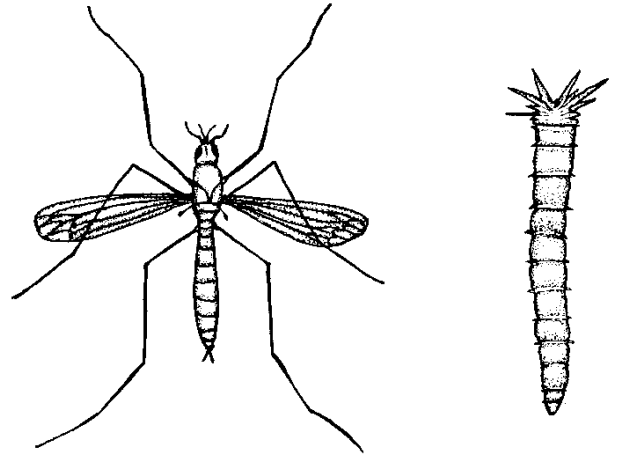
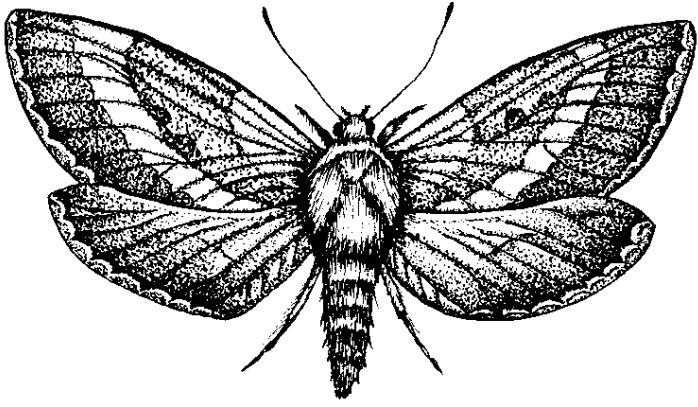
**Traits:** Aquatic insects; adults are flat, oval-shaped and have two eyes on top of the head and two on the bottom. They are black or greenish and often swim in circles together. Larvae are slender and have feathery gills on abdomens.

**Habitat:** Ponds, lakes, streams

**Foods:** Insect larvae, small fish, tadpoles

**Eaten by:** Fish, water birds

**Do You Know?** Whirligig beetles can see underwater and above water at the same time.



## 124. CRANE FLY

F,T,W

**Traits:** Long-legged, mosquito-like insects with two clear wings

**Habitat:** Adults: damp habitats with abundant vegetation; larvae: moist soil and decaying plants in forests; some live in water.

**Foods:** Some adults eat flower nectar. Larvae eat algae, detritus, and larvae of other insects.

**Eaten by:** Bats, shrews, insect-eating birds, centipedes, spiders, other insect-eating invertebrates

**Do You Know?** Although crane flies look like giant mosquitoes, they do not bite. They do, however, eat mosquitoes.

## 121. MOTH

F,T

**Traits:** Insects with four large wings with powderlike scales; large eyes, long antennae, and tubelike mouths that coil up when not in use

**Habitat:** Adults use a variety of habitats. Larvae can only live on certain plants.

**Foods:** Adults eat flower nectar. Larvae eat plant leaves, fruit, stems, and roots.

**Eaten by:** Bats, shrews, ground beetles, warblers, flycatchers, swallows, chickadees, kinglets

**Do You Know?** Larvae spin cocoons. Some larvae make tents of silk threads.

## 125. MOSQUITO

F,T,W

**Traits:** Adult insects have scales and long, tubular mouthparts (proboscis) for sucking. Larvae are wormlike.

**Habitat:** All types; larvae are aquatic and live in ponds, lakes, and still waters.

**Foods:** Adult females suck blood from birds and mammals. Adult males feed on flower nectar. Larvae feed on algae, protozoans, and detritus.

**Eaten by:** Adults are eaten by dragonflies, fish, frogs, birds, bats. Larvae are eaten by fish and water birds.

**Do You Know?** Some female mosquitoes carry microscopic organisms that cause diseases in mammals and birds.

## 122. BUTTERFLY

F,T,W

**Traits:** Adults have four large wings with powderlike scales; large, compound eyes, long antennae with clubs at the tips, and tubelike mouths that coil up when not in use.

**Habitat:** Adults use a variety of habitats. Larvae can live only on certain plants.

**Foods:** Adults eat flower nectar. Larvae eat plant leaves, fruit, stems, or roots.

**Eaten by:** Warblers, flycatchers, ground beetles, wasps, dragonflies

**Do You Know?** Larvae form a chrysalis for pupation.

## 126. MIDGE

F,T,W

**Traits:** An adult has six long legs, a long narrow abdomen, and two wings that are narrow at the base. Larvae are aquatic.

**Habitat:** Adults swarm over water and moist habitats. Larvae live in water or wet moss.

**Foods:** Adults eat flower nectar and pollen. Larvae eat algae or plant material or filter microscopic organisms from the water. Some prey on other insects.

**Eaten by:** Fish, aquatic animals, birds, shrews, ground beetles

**Do You Know?** Adults live for only five to ten days. Larvae live as long as seven years.

## 123. BLACK FLY

F,T,W

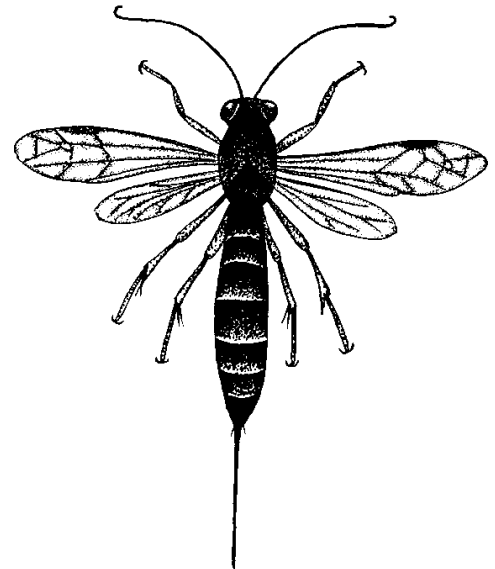
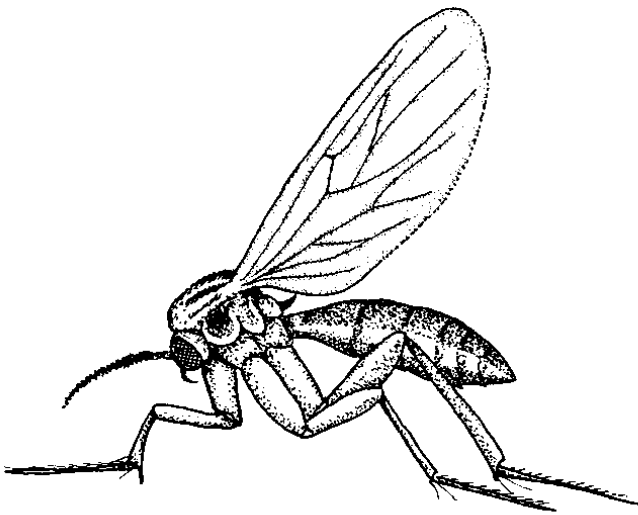
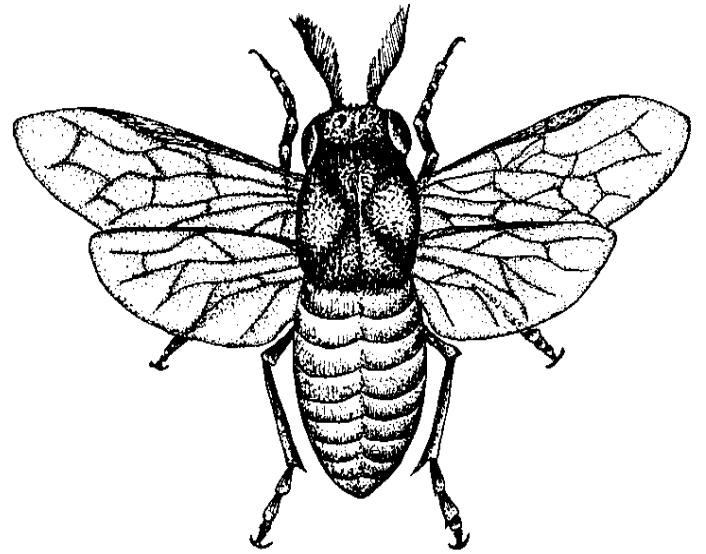
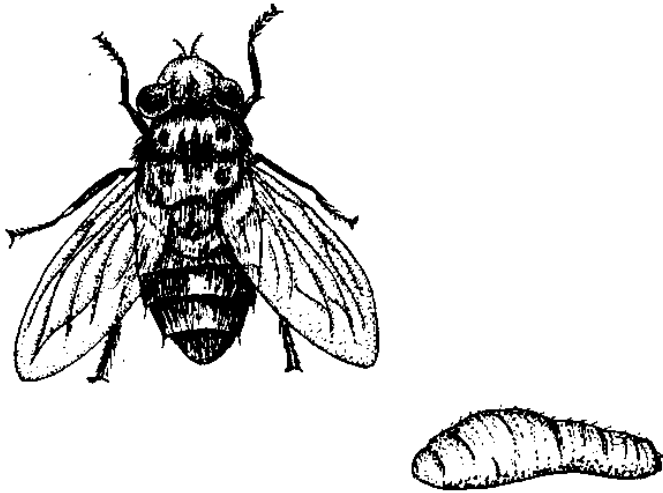
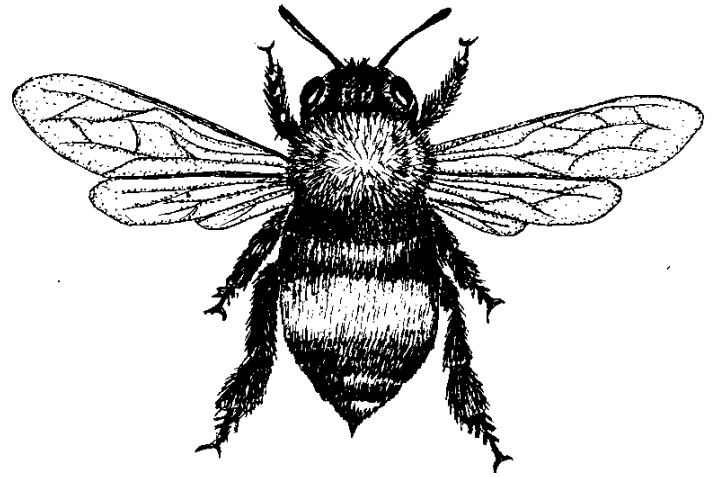
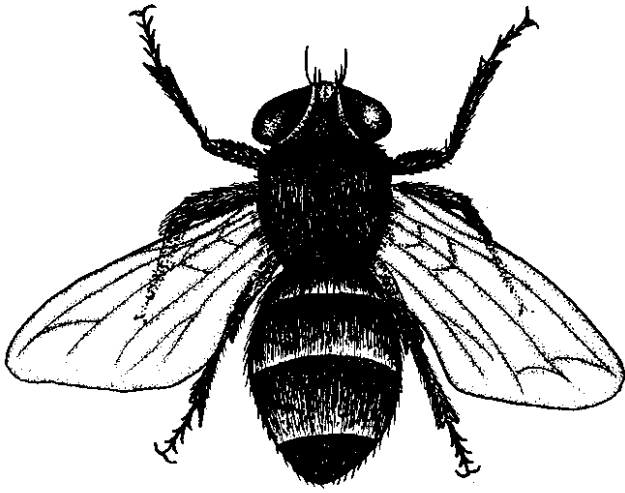
**Traits:** Adult black flies have six legs and are dark colored with two broad wings and short legs. Larvae are wormlike.

**Habitat:** Adults live around water. Larvae live underwater, attached to rocks and plants.

**Foods:** Adult males feed on flower nectar. Adult females suck blood from birds and mammals. Larvae filter detritus (decaying matter).

**Eaten by:** Adults are eaten by swallows and some insects. Larvae eaten by fishes, such as blackfish, and dippers.

**Do You Know?** Female black flies are vicious biters. Males don't bite.



**130. BUMBLE BEE****F,T,W**

**Traits:** Insects with four wings; hind wings much smaller than front ones; hairy, black bodies covered with yellow markings

**Habitat:** Any habitat with a variety of nectar-producing flowers, including pioneer, tall shrub, and old-growth forest; nests in the ground

**Foods:** Nectar and pollen of flowering plants

**Eaten by:** Flycatchers, swallows, warblers

**Do You Know?** Bees are among the most important plant pollinators. Some species eat the nectar and pollen and pollinate only one species of plant.

**127. BLOW FLY****F,T,W**

**Traits:** Insects with two clear wings and two small knobs (called halteres), large eyes, metallic blue or green backs; invertebrate animal

**Habitat:** Soil and dead animals

**Foods:** Liquids from decaying plants and animals, animal wastes, blood

**Eaten by:** Warblers, flycatchers, chickadees, thrushes, shrews, carrion beetles, dragonflies, hornets, centipedes

**Do You Know?** Some blow flies are important as plant pollinators. Many flies transport microscopic organisms that cause diseases in animals. Flies taste with their feet.

**131. SAW FLY****F,T**

**Traits:** Insects with four clear wings; hind wings smaller than forewings; long antennae, broad abdomens

**Habitat:** Adults use a variety of habitats, but larvae usually live only on certain plants.

**Foods:** Leaves of conifers, certain broadleaf trees, other plants; some larvae are leaf miners. Some species eat nectar or pollen.

**Eaten by:** Flycatchers, swallows, certain wasps

**Do You Know?** These insects look scary because of their well-developed ovipositors (egg-layer), which look like a stingers, but they do not sting or bite.

**128. BOT AND WARBLE FLY****F,T**

**Traits:** Beelike, hairy flies; invertebrate animal

**Habitat:** Larvae develop inside a host animal.

**Foods:** Larvae eat body fluids or tissues of their hosts (hares, squirrels, caribou, marmots, and other mammals). Foods of the adults are unknown.

**Eaten by:** Insect-eating birds

**Do You Know?** Bot flies lay their eggs on their host's skin. The larvae burrow under the skin and feed on tissues or body fluids of the host, then emerge and drop to the ground where they develop into adults who will continue the cycle.

**132. ICHNEUMON****F,T,W**

**Traits:** Insects with long, narrow bodies and four clear wings; antennae are at least half as long as the body. Some have a long, narrow tail-like structure for egg-laying.

**Habitat:** Any habitat where there are host insects

**Foods:** Adults lay their eggs inside larval sawflies, hornets, butterflies, moths, and spiders. When the eggs hatch, the larvae eat the host.

**Eaten by:** Flycatchers, swallows, thrushes, warblers, chickadees

**Do You Know?** These wasplike insects are important parasites of immature insects.

**129. FUNGUS GNAT****F,T,W**

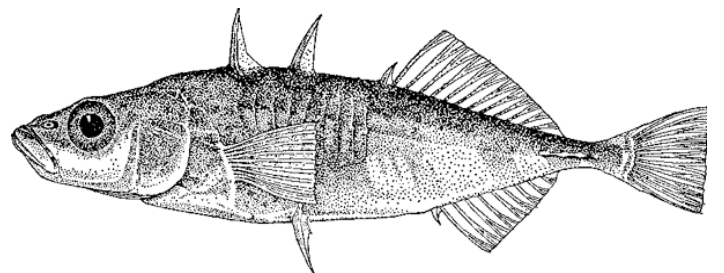
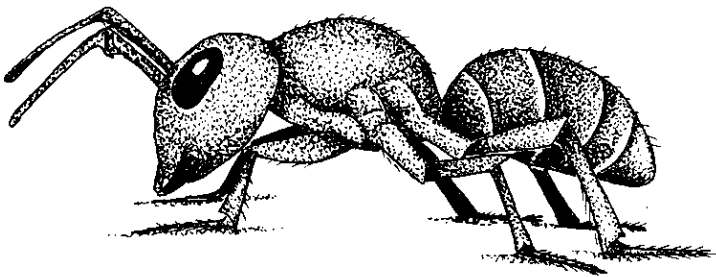
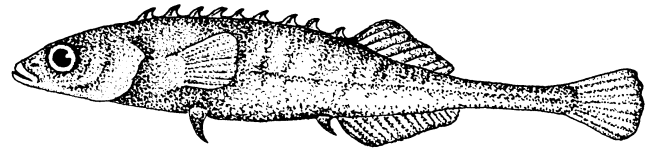
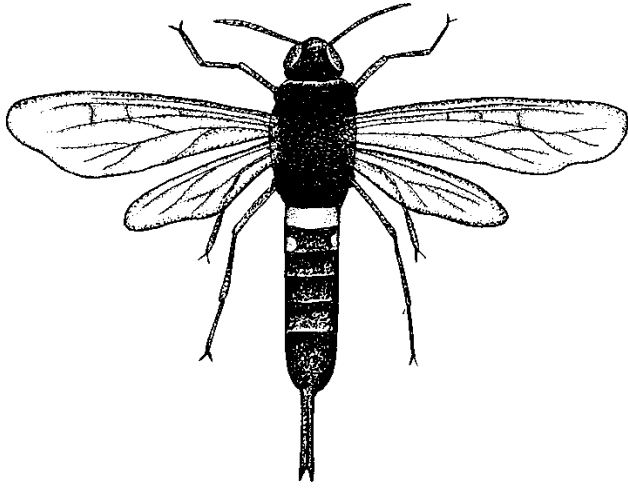
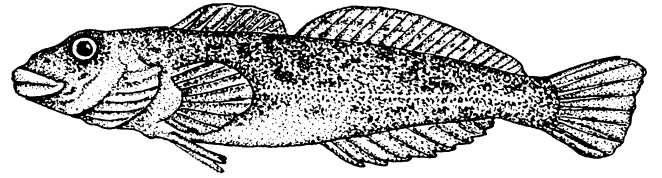
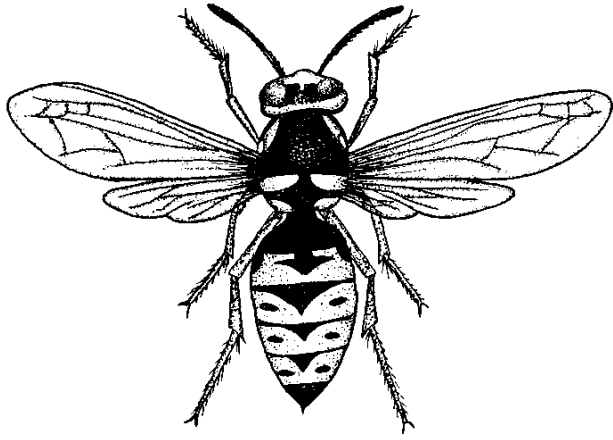
**Traits:** A slender, mosquito-like insect with long legs and long antennae; invertebrate animal

**Habitat:** Decaying vegetation, fungi, moist soil

**Foods:** Fungi, decaying plants, roots of live plants

**Eaten by:** Ground beetles, spiders, insect-eating birds

**Do You Know?** There are more than 600 species of fungus gnats in North America.



### 136. SLIMY SCULPIN

F,T,W

**Traits:** Small fish (animal) with a large head, short lateral line ending below the second dorsal fin

**Habitat:** Lakes and fast-moving streams; adults move to shallow water to spawn.

**Foods:** Larvae of flies, mayflies, caddisflies, dragonflies, amphipods; also some eggs and young fish

**Eaten By:** Grebes, loons, mergansers, other fish

**Do You Know?** Male builds nest and defends eggs against predators. The color of its skin makes it nearly invisible when motionless on river and lake bottoms.

### 133. YELLOWJACKET AND HORNET

F,T,W

**Traits:** Insects with bright black and yellow or white markings; the tip of the abdomen is pointed and has a stinger; invertebrate

**Habitat:** Variety of types

**Foods:** Adults eat flower nectar, ripe fruit, other insects; larvae eat caterpillars, flies, meat from dead animals, nectar.

**Eaten by:** Insect-eating birds such as flycatchers and swallows

**Do You Know?** These wasps build paper nests in the ground and in a protected site above ground.

### 137. NINE-SPINE STICKLEBACK

F,T,W

**Traits:** Fish with nine spines on its dorsal (back) fin; animal (vertebrate).

**Habitat:** Lakes and rivers; spends the winter in deep water, then migrates to shallow water and tributaries to spawn

**Foods:** Midges, water fleas, copepods, crustaceans, aquatic insects

**Eaten by:** Arctic char, lake trout, grayling, loons, grebes, terns, gulls, mink, river otters, humans

**Do You Know?** Sticklebacks can lock their spines upright to prevent predators from swallowing them.

### 134. HORNTAIL

F

**Traits:** Insects (invertebrate animal) with four clear wings, hind wings smaller than forewings; long cylinder-shaped abdomen with a spinelike part at the tail end, which is used for egg-laying; this insect does not sting.

**Habitat:** Forests; larvae live in wood of living or dead trees.

**Foods:** Wood

**Eaten by:** Woodpeckers, creepers, nuthatches, ichneumons

**Do You Know?** Some horntails are parasitized by ichneumons.

### 138. THREE-SPINE STICKLEBACK

F,T,W

**Traits:** Fish with three sharp spines on its back; animal (vertebrate)

**Habitat:** Fresh and salt water

**Foods:** Copepods, water fleas, midges, rotifers, seed shrimp, aquatic worms, mollusks, amphipods, leeches, flatworms, water mites

**Eaten by:** Salmon, Dolly Varden, loons, grebes, mergansers, adult sticklebacks will eat young sticklebacks.

**Do You Know?** Sticklebacks have a high tolerance to low oxygen levels in shallow, frozen lakes. They can survive where other fish cannot.

### 135. ANT

F,T,W

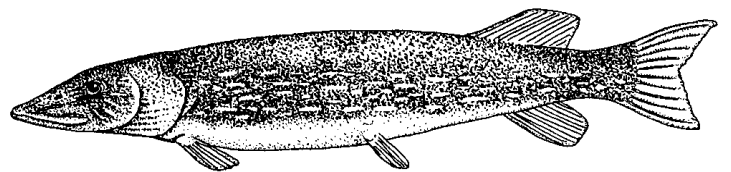
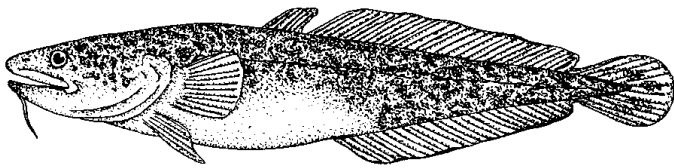
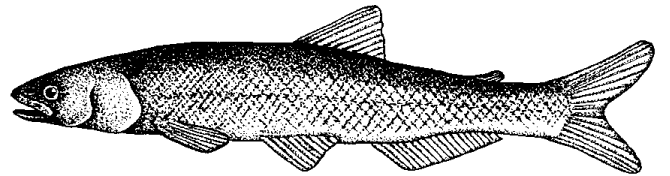
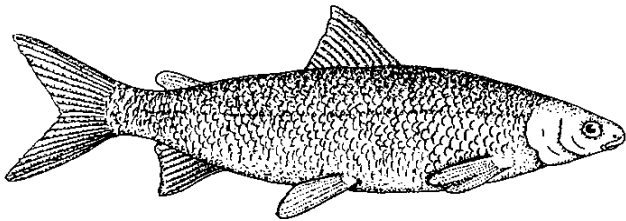
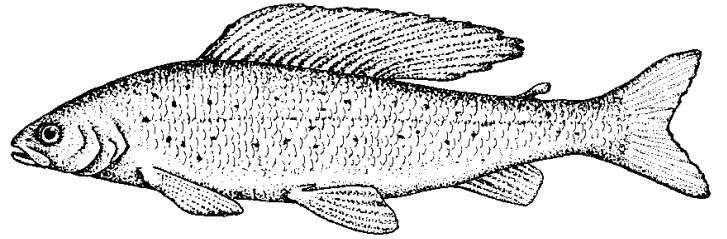
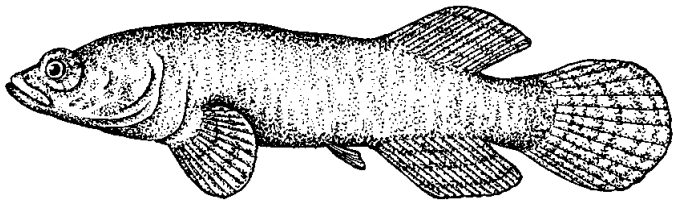
**Traits:** Body clearly divided into three segments by narrow constrictions, last segment forming a pointed end; many secrete formic acid as a defense. Only certain kinds of adults have wings.

**Habitat:** In colonies in the ground or in wood

**Foods:** Varies by species; flower nectar, plant juices, or aphid honeydew; seeds, leaves, or dead organisms; some are predators on other insects.

**Eaten by:** Flickers, wrens, thrushes, sparrows

**Do You Know?** Some ants protect aphids from predators, then feed on the sugary secretion (honeydew) the aphids produce.



## 142. ARCTIC GRAYLING

T, W

**Traits:** Fish with a large sail-like dorsal fin and small mouth; dorsal fin dotted with large iridescent red or purple spots; animal

**Habitat:** Cold, clear streams, lakes, ponds; spawn in streams with sandy gravel bottoms.

**Foods:** Mayflies, stoneflies, caddisflies, salmon eggs and smolt; also voles or shrews that fall into the water

**Eaten by:** Larger fish, loons, grebes, mergansers, humans

**Do You Know?** Grayling migrate from deep, fresh water holes upstream to spawn in smaller streams and headwaters.

## 139. BLACKFISH

F,T,W

**Traits:** Fish with a broad, flat head; large dorsal and anal fins placed far back on body; rounded tail, three rays in pelvic fin; animal (vertebrate).

**Habitat:** Heavily vegetated lowland ponds and streams

**Foods:** Copepods, water fleas, insect larvae, mollusks, segmented worms, algae

**Eaten by:** River otters, mink, loons, grebes, terns, humans

**Do You Know?** The antifreeze in blackfish blood allows them to tolerate icy cold water and survive partial freezing.

## 143. EULACHON

W

**Traits:** Fish has circular grooves on gill covers; narrow body, forked tail; animal

**Habitat:** Adults live at sea but return to fresh water streams with sandy gravel bottoms to spawn. The fry are swept out to sea and live in estuaries and near-shore waters.

**Foods:** Copepods, phytoplankton, mysid shrimp, barnacle larvae, water fleas, worm larvae

**Eaten by:** Salmon, seals, sea lions, beluga whales, humans

**Do You Know?** Eulachon is an oily fish, also known as the "candlefish" because of its traditional use as a candle when dried and fitted with a wick.

## 140. WHITEFISH

F,T,W

**Traits:** Fish with slender, rounded bodies; forked tails; small mouths with upper jaw overlapping the lower jaw; animal (invertebrate)

**Habitat:** Lakes, streams, estuaries

**Foods:** Mainly insects, including larval mayflies, stoneflies, midges, dragonflies, mosquitoes; also eggs and larvae of other fish

**Eaten by:** Lake trout, burbot, arctic char, humans; fry are eaten by fish-eating birds, such as mergansers and grebes.

**Do You Know?** Most whitefish migrate long distances between feeding and spawning grounds. Some migrate to salt water feeding areas, but spawn and overwinter in fresh water.

## 144. NORTHERN PIKE

W

**Traits:** A fish with a long, flat snout; rear placement of dorsal and anal fins; large mouth with many sharp teeth; elongated body and head; animal (invertebrate)

**Habitat:** Deep, fresh water lakes and rivers in winter; shallow, near-shore waters in summer

**Foods:** Adults eat fish, waterfowl, frogs, water shrews, and insects. Young eat copepods, water fleas, and insects.

**Eaten by:** Bigger pike, blackfish, humans

**Do You Know?** A 12-pound pike was found with a 4-pound pike in its stomach.

## 141. BURBOT

F,T,W

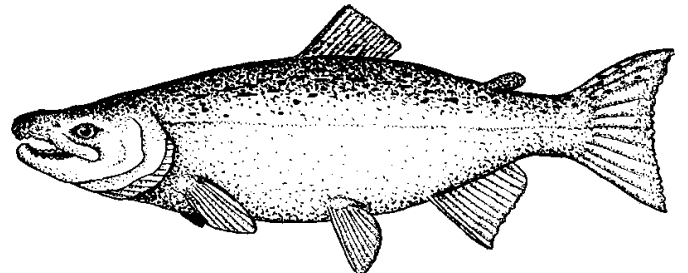
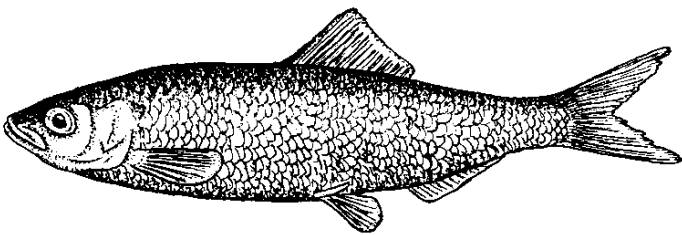
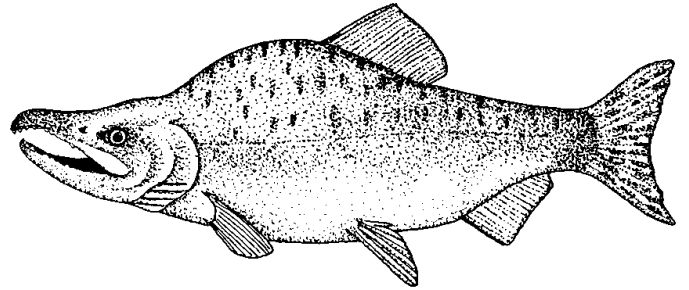
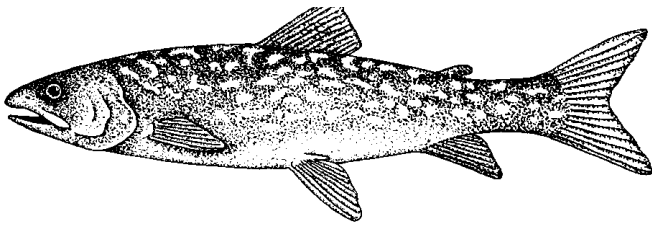
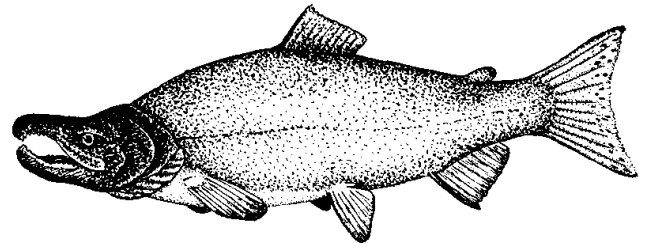
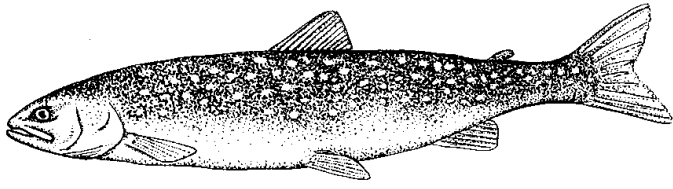
**Traits:** Fish with a large head, wide gill openings, two dorsal fins (second one long), small barbel on chin; rounded tail, no spines on fins; animal

**Habitat:** Deep waters of lakes and rivers; spawn in moderately deep water with gravel and sandy bottoms

**Foods:** Adults: mainly fish, some insect larvae, mollusks, copepods, fish eggs, shrews; young: stonefly and mayfly larvae, other insects, small fish

**Eaten by:** Young eaten by other fishes, humans

**Do You Know?** A single female burbot can lay 1,000,000 eggs!



## 148. SOCKEYE SALMON

W

**Traits:** Fish with an adipose fin; lacks definite spots on back and tail; animal (vertebrate)

**Habitat:** Adults live at sea, but return to fresh-water streams to spawn.

**Foods:** Squid, copepods, crustaceans, insects, other small fish; fry eat insects and other invertebrates.

**Eaten by:** Seals, whales, larger fish, bears, bald eagles, humans

**Do You Know?** Sockeye salmon, also known as red salmon, are the most abundant salmon in Alaska.

## 145. ARCTIC CHAR

T,W

**Traits:** A medium-sized fish with an adipose fin, small scales, large pink to red spots on sides and back; animal (invertebrate)

**Habitat:** Lakes; spawns in gravel of lake margins or shallow, quiet stream pools.

**Foods:** Insects, young fish, crustaceans, mollusks

**Eaten by:** Other fishes, diving birds, humans

**Do You Know?** Adults feed on salmon smolts migrating to the sea. Arctic char eggs and young are adapted to survive near-freezing water temperatures.

## 149. PINK SALMON

W

**Traits:** Fish with an adipose fin, very large spots on back, and caudal fin

**Habitat:** Adults live at sea but move into fresh water to spawn in rivers and river mouths. Young go to sea shortly after leaving spawning areas.

**Foods:** Copepods, squid, insects, amphipods, small fish

**Eaten by:** Larger fish, seals, sea lions, certain whales, bears, bald eagles, osprey, humans

**Do You Know?** Pink salmon, the smallest salmon, are also called humpbacks because the breeding males develop large humps on their backs.

## 146. LAKE TROUT

F,T,W

**Traits:** Fish with deeply forked tail, adipose fin, and irregular shaped spots on a silver-to-dark-gray background; animal (vertebrate).

**Habitat:** Throughout northern North America in cold lakes at high altitudes

**Foods:** Varies with age; young eat adult and larval insects (including midges, craneflies). Adults eat fish (sticklebacks and whitefish).

**Eaten by:** Other fish, terns, grebes, loons, humans

**Do You Know?** Lake trout are seven or eight years old when they first spawn in Alaska. Thereafter they spawn every other year.

## 150. COHO SALMON

W

(also called SILVER SALMON)

**Traits:** A large salmon with an adipose fin, small black spots on the back and upper caudal fin

**Habitat:** Adults live at sea, but return to fresh water to spawn in fast-flowing streams with gravel bottoms.

**Foods:** Herring, sandlance, crustaceans, other invertebrates; Young feed mostly on insects.

**Eaten By:** Whales, eagles, bears, other salmon, grebes, loons, humans

**Do You Know?** Young coho salmon may spend up as long as five years in fresh water before going to sea.

## 147. PACIFIC HERRING

W

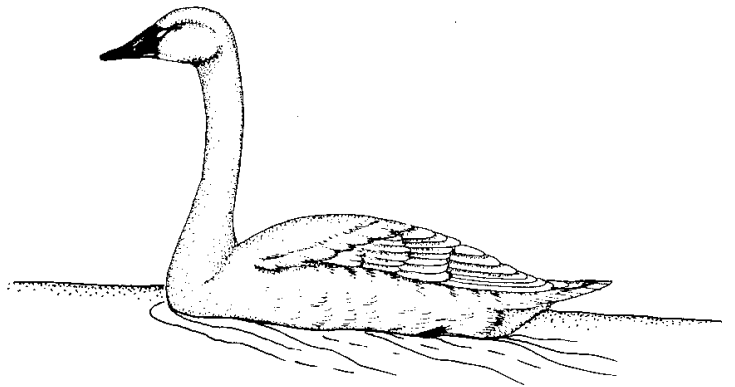
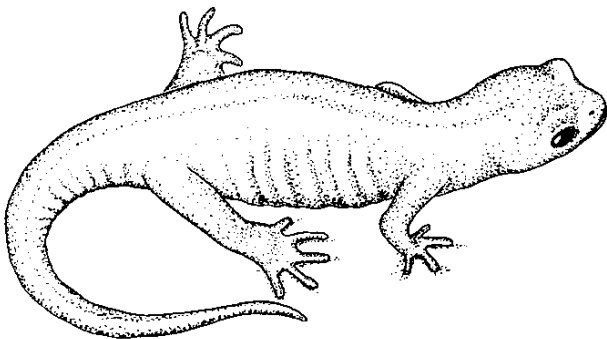
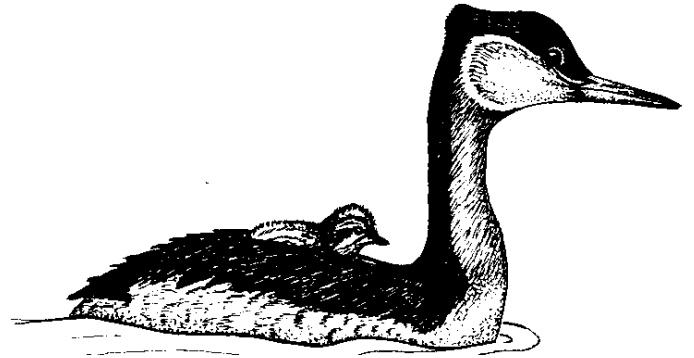
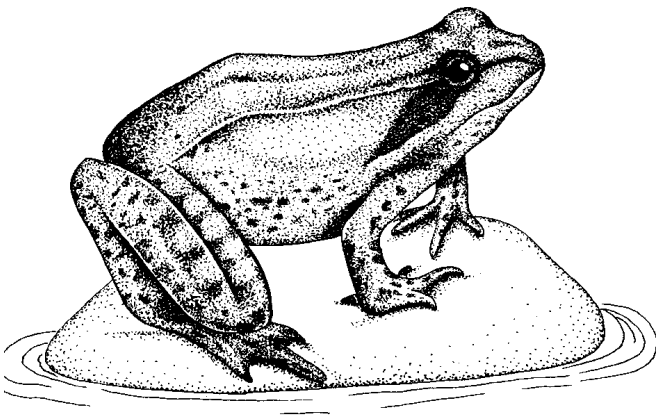
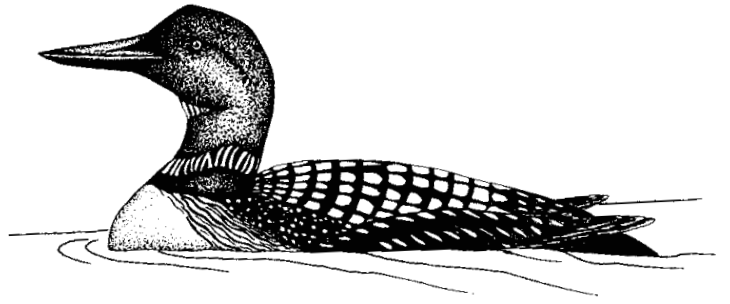
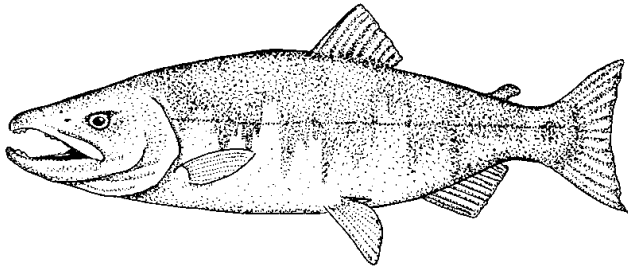
**Traits:** A medium-sized fish with no lateral line, large mouth, no teeth or jaws, no adipose fin

**Habitat:** Mainly at sea and in estuaries; spawns in shallow waters over eelgrass, kelp, or rocks. Young live in shallow bays and inlets before moving to deeper waters.

**Foods:** Adults feed on copepods, amphipods, euphausiids, mollusks, larvae, small fish. Young feed on copepods, invertebrate eggs, diatoms.

**Eaten by:** Chum salmon, loons, porpoises, beluga whales, humans

**Do You Know?** Pacific herring are a very important part of the food web!



**154. LOON****F,T,W**

**Traits:** Diving bird with a sharp, pointed bill and webbed feet; large, heavy body; unable to take flight from land; animal (vertebrate)

**Habitat:** Nests on freshwater lakes. Winters along Pacific coast to Mexico.

**Foods:** Sticklebacks, sculpins, herring, sandlance, young salmon, rockfish, flounders, codfish; also eat leeches, snails, shrimp, amphipods, aquatic insects.

**Eaten by:** Foxes, gulls, jaegers, eagles

**Do You Know?** Loons can dive to depths as great as 240 feet (73 m) and fly as fast as 60 miles (101 km) per hour.

**151. CHUM SALMON****W**

**Traits:** This salmon species has an adipose fin and an absence of spots on body and fins. All fins, except dorsal, have dark tips.

**Habitat:** Adults live at sea, but move into fast-flowing fresh-water streams to spawn.

**Foods:** Copepods, amphipods, squid, crab larvae, young herring, other fishes

**Eaten by:** Whales, eagles, bears, other fish, humans

**Do You Know?** Chum salmon swim 2,000 miles (3380 km) up the Yukon River to spawn.

**155. GREBE****F,T,W**

**Traits:** Diving bird with a sharp, pointed bill and lobed feet; rarely seen on land or in flight

**Habitat:** Nests on lakes and estuaries; winters in bays and estuaries along Pacific coast to Mexico.

**Foods:** Fish, crustaceans, insects, other invertebrates

**Eaten by:** Foxes, eagles, mink, weasels, gulls

**Do You Know?** Grebes eat their own feathers! This is thought to protect their stomachs and intestines from sharp fish bones.

**152. WOOD FROG****F,T,W**

**Traits:** Small amphibian with moist skin, no scales or claws, long hind legs, short forelegs, large mouth; animal (vertebrate)

**Habitat:** Forests, muskegs, tundra; adults live on land, but breed in water. Eggs and tadpoles live only in water.

**Foods:** Adults eat flies, true bugs, lacewings, dragonflies. Larvae eat algae and small aquatic plants.

**Eaten by:** Pike, sandhill cranes, jays, crows, grebes, loons, mink, river otters; larvae are eaten by certain insects and fish.

**Do You Know?** Wood frogs can survive temperatures as low as 21°F.

**156. TUNDRA SWAN****T,W**

**Traits:** Large aquatic bird with a six- to seven-foot (1.8-2.1 m) wingspan, all-white plumage, very long neck; bright yellow spot on black bill

**Habitat:** Lowland tundra and small islands, ponds, lakes, rivers

**Foods:** Leaves, seeds, and underground roots of horsetails, pondweed, sedges, rushes, pond lily, water milfoil

**Eaten by:** Foxes, mink, gulls

**Do You Know?** Once paired, swan mates tend to stay together for life.

**153. SALAMANDER AND NEWT****F**

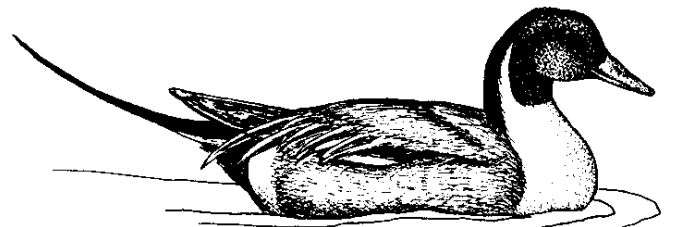
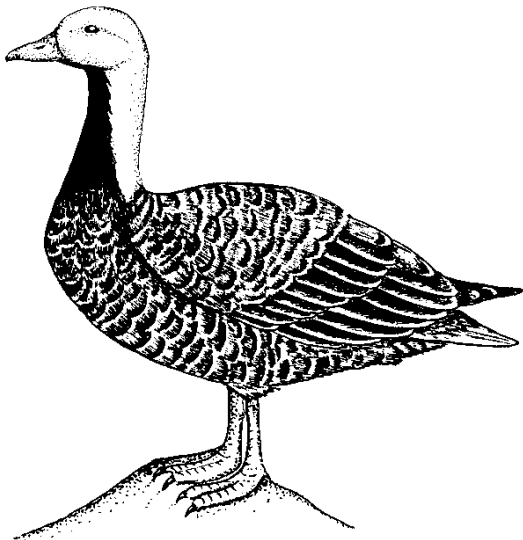
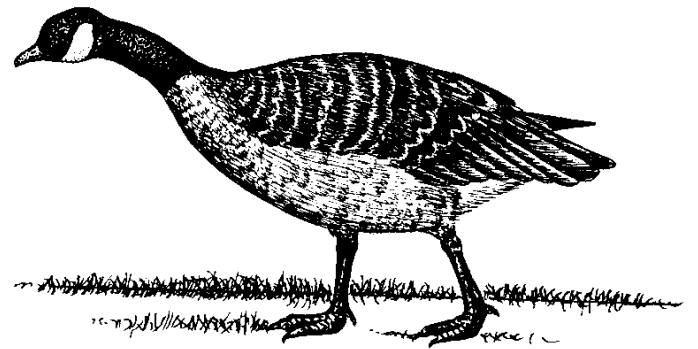
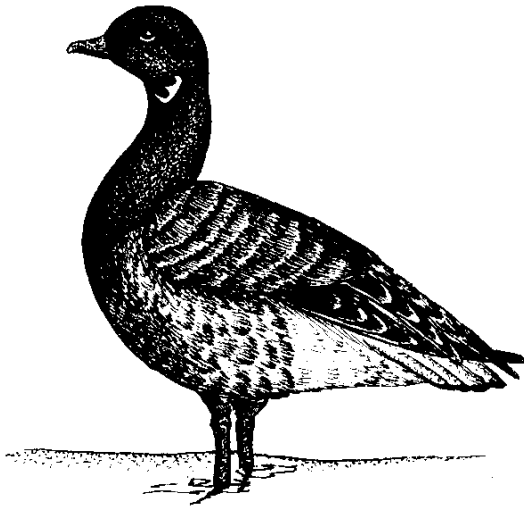
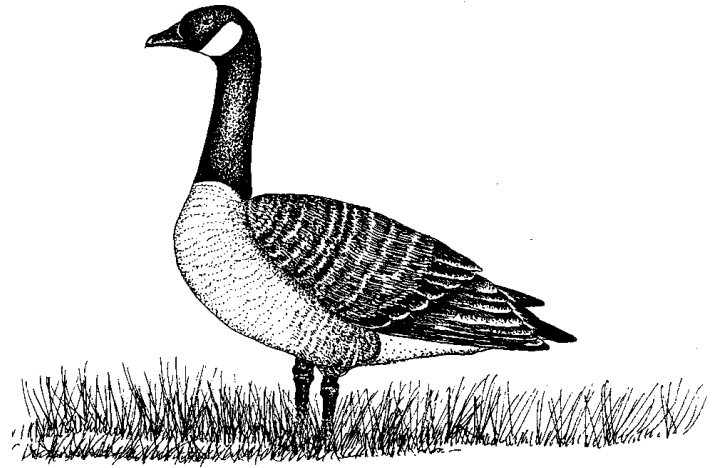
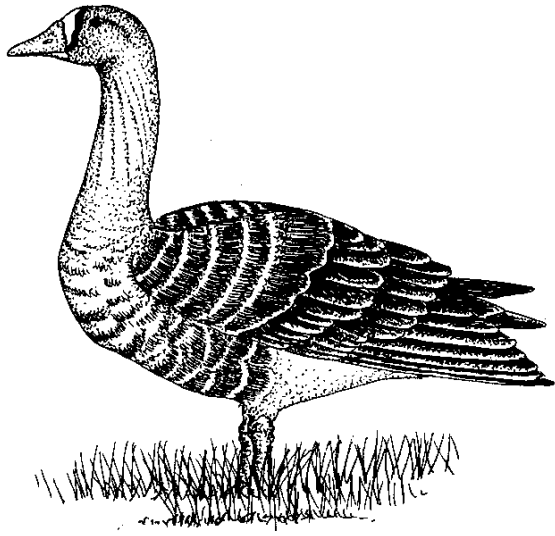
**Traits:** Small animals with moist skin, no scales or claws, short fore and hind legs, long tail

**Habitat:** Moist places in Alaska's coastal forests

**Foods:** Small insects, springtails, beetles, flies

**Eaten by:** Jays, crows, mink, shrews

**Do You Know?** Alaska's two salamanders, the northwestern salamander and the long-toed salamander, are nocturnal (active at night) and are secretive. There is one species of newt in Alaska: the rough-skinned newt.



## 160. CACKLING CANADA GOOSE T,W

**Traits:** Bird with webbed feet, black head and neck with distinctive white “chin strap”; black bills, legs, and feet; this subspecies, the size of a mallard duck, is the smallest type of Canada goose.

**Habitat:** Nests in coastal wetlands of the Yukon-Kuskokwim Delta. Winters in wetlands and agricultural areas of Oregon and California.

**Foods:** Grasses, sedges, berries, agricultural grains

**Eaten by:** Foxes, gulls, jaegers, ravens, humans

**Do You Know?** The call of this goose is a short, high-pitched cackle. This is why it is called the “cackling” Canada goose.

## 157. GREATER WHITE-FRONTED GOOSE T,W

**Traits:** Medium-sized, grey-brown goose with orange legs and feet; animal (vertebrate)

**Habitat:** Nests in wetlands and tundra. Winters in wetlands and agricultural fields in central California.

**Foods:** Grasses, sedges, leaves, berries, seeds, roots of many aquatic plants in summer; seeds of rice, water grass, milo, barley, marsh plants (rushes and cattails) in winter.

**Eaten by:** Foxes, gulls, jaegers, ravens, humans

**Do You Know?** White fronts are also called “speckle-bellies” because of the dark brown bars on their undersides.

## 161. DUSKY CANADA GOOSE W

**Traits:** A medium-sized goose with black head and neck marked with white “chin strap” from ear to ear; dark breast

**Habitat:** Nests in sedge marshes of the Copper River Delta; winters in Oregon along the Willamette River Valley.

**Foods:** Shoots, roots, and seeds of grasses and sedges, bulbs, grains, berries, insects, crustaceans, mollusks

**Eaten by:** Gulls, jaegers, bald eagles, brown bears, coyotes, mink

**Do You Know?** Nests only on the Copper River Delta and winters only in Oregon.

## 158. BRANT T,W

**Traits:** Small, dark goose with black head and neck and whitish patches on upper neck

**Habitat:** Nests on islands in salt bays, estuaries, coastal tundra lakes and ponds.

**Foods:** In spring and summer, short annual grasses, sedges, algae, larval insects, small crustaceans; eel grass in migration and winter

**Eaten by:** Foxes, gulls, jaegers, ravens, humans

**Do You Know?** All brant gather in fall at Izembek Lagoon, on the Alaska Peninsula. They fly nonstop to the Lower 48 in 48-60 hours.

## 162. NORTHERN PINTAIL T,W

**Traits:** A large, slender duck; male has white breast and brown head with a long, pointed tail

**Habitat:** Tundra, lakes, ponds, marshes; winters in coastal freshwater wetlands.

**Foods:** Ninety percent plant foods, including seeds of sedges, grasses, pondweeds, smartweeds, grain; will eat aquatic invertebrates and insects.

**Eaten by:** Foxes, eagles, minks; young eaten by gulls, jaegers, humans

**Do You Know?** Pintails are the most widely distributed duck in North America.

## 159. EMPEROR GOOSE W

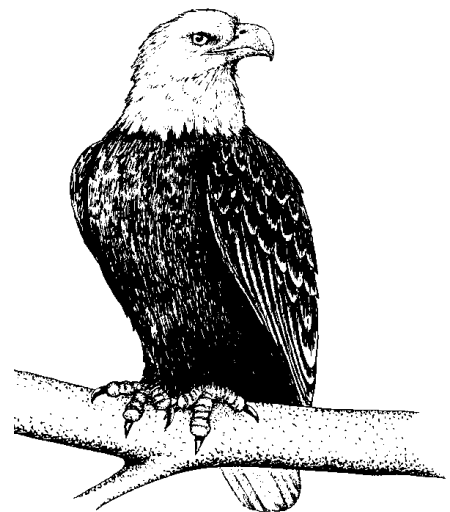
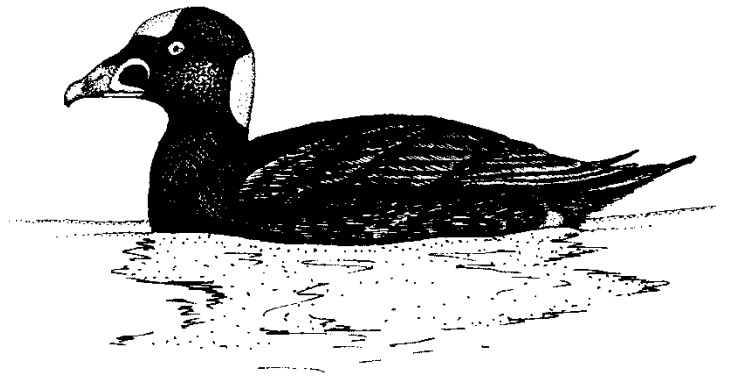
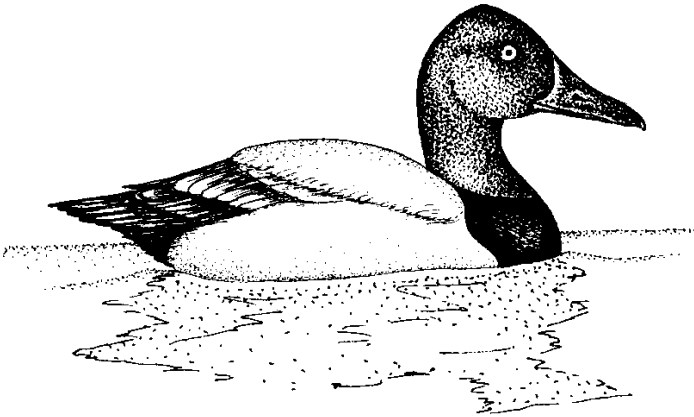
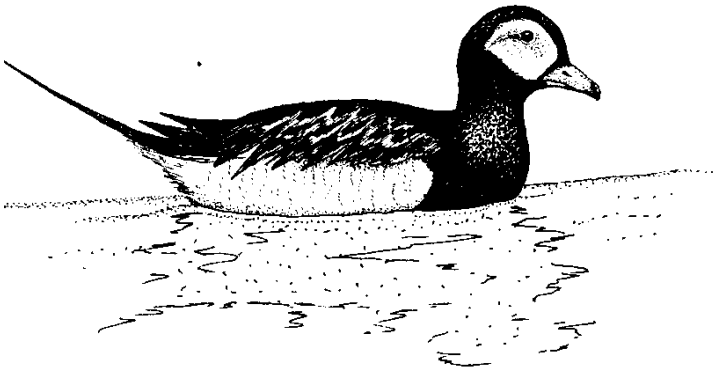
**Traits:** Blue-gray goose with round body, rounded head, and short, thick neck; the head and back of neck are white.

**Habitat:** Nests in wetlands within 5-15 miles (8-24 km) of the Bering Sea coast; they winter in the near-shore waters and intertidal areas of the Aleutian Islands.

**Foods:** Grasses, sedges, aquatic vegetation in summer and fall; small invertebrates, eelgrass, algae in winter

**Eaten by:** Foxes, gulls, jaegers, ravens, humans

**Do You Know?** Emperor geese spend their entire life in Alaska.



**166. EIDER****T,W**

**Traits:** Large, bulky diving ducks with dense down feathers that help insulate them from the cold northern oceans

**Habitat:** Nest near lowland tundra lakes or on barrier islands; winter on the ocean.

**Foods:** In fresh water, eiders feed on aquatic insects and some plants, but at sea they feed on a variety of invertebrate animals (mussels, clams, whelks, seastars, sea urchins, and various crustaceans).

**Eaten by:** Foxes, bears; eggs are eaten by jaegers and gulls.

**Do You Know?** Eiders line their nests with their down feathers, thus providing superb insulation for their eggs.

**163. OLDSQUAW****T,W**

**Traits:** Stocky, diving duck with black, brown, and white plumage; males have long tail feathers.

**Habitat:** Ponds and lakes of lowland and alpine tundra in summer. Ocean in winter.

**Foods:** Mussels, clams, snails, and crustaceans are their main foods. In fresh water, they also eat larvae of midges, crane flies, caddisflies, other insects.

**Eaten by:** Foxes, weasels, gulls, jaegers, ravens

**Do You Know?** Oldsquaws may dive deeper than any other duck. They have been recorded at depths of 72-240 feet (22-73 m).

**167. SCOTER****F,T,W**

**Traits:** Stocky, short-necked, diving ducks; males are black with colorful bills. Females are brown.

**Habitat:** Alpine and lowland tundra lakes; coastal wetlands in winter

**Foods:** Insects (caddisflies, damselflies, dragonflies, beetles, water boatmen); at sea: mussels, clams, some crustaceans

**Eaten by:** Jaegers, weasels, foxes

**Do You Know?** Most species breed in the far north and migrate in large, compact flocks to and from their coastal wintering grounds.

**164. CANVASBACK****W**

**Traits:** A large-sized duck with sloping forehead and long black bill; male has dark reddish head and neck. Females are light brown.

**Habitat:** Marshes, sloughs, and lakes with shoreline plants; winters in lakes, rivers, and saltwater bays.

**Foods:** Pondweeds, seeds of sedges and burr reeds, aquatic invertebrates (especially small clams).

**Eaten by:** Foxes, falcons, eagles, weasels, gulls, humans

**Do You Know?** Their legs are located far back on the body and wide apart, which is good for diving, but poor for walking.

**168. BALD EAGLE****F,W**

**Traits:** Large, brown bird with rounded tail and wings; hooked yellow bill; long, curved talons; adults have white heads and tails.

**Habitat:** Forested areas along coasts, lakes, rivers; also some treeless coastal regions

**Foods:** Waterfowl, small mammals, salmon, herring, dead and dying fish, mammals or birds washed up along shorelines

**Eaten by:** Young occasionally eaten by ravens and magpies

**Do You Know?:** Bald eagles are almost five years old when their heads and tails become all white.

**165. MERGANSER****T,W**

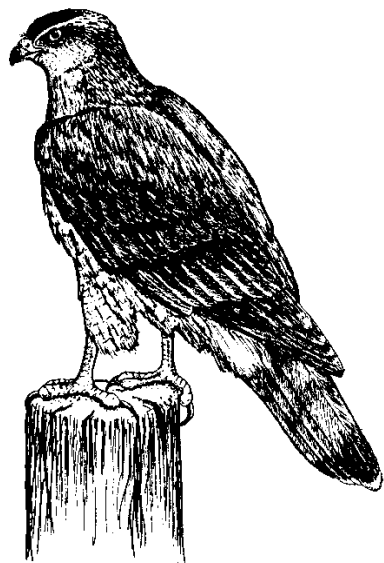
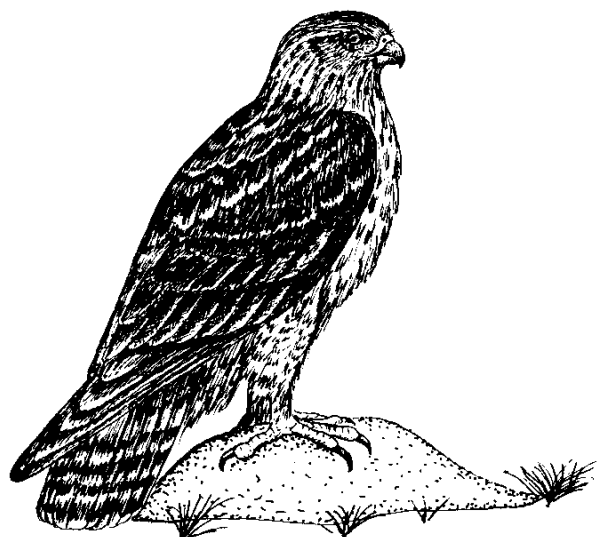
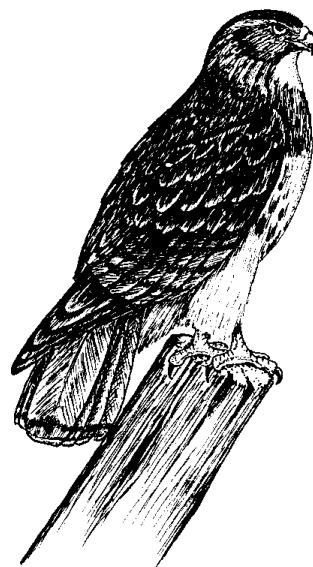
**Traits:** Long bill with saw-tooth edges and a hooked tip; most have a crest on head; unable to take off from land

**Habitat:** Nests in cavities on the ground or in a tree near rivers, lakes, or estuaries. Winters along the coast and on large inland lakes and rivers of the Lower 48.

**Foods:** Sticklebacks, sculpins, eels, eulachon, herring, blackfish, frogs, crustaceans, snails, insects, leeches

**Eaten by:** Foxes, weasels, gulls

**Do You Know?** Mother mergansers will sometimes carry young in her bill from nest to water.



**172. RED-TAILED HAWK** **F,W**

**Traits:** Large, brown bird with rounded tail and wings; reddish tail; hooked bill; talons  
**Habitat:** Nests in old trees, sometimes on cliffs. Hunts in open areas, including early successional forests, muskegs, and along rivers.  
**Foods:** Voles, mice, snowshoe hares, squirrels, shrews, weasels, other small mammals  
**Eaten by:** Great horned owls; eggs may be taken by ravens.

**Do You Know?** Often soars in wide circles above trees or mountain ridges and perches on dead limbs or atop branches of tall trees.

**169. NORTHERN HARRIER** **T,W**

**Traits:** Hawk with large eyes; sharply hooked bill, talons; long tail; long wings; white rump patch  
**Habitat:** Open areas, particularly coastal and fresh-water wetlands; nests throughout Alaska and winters in the Lower 48 south to northern South America.  
**Foods:** Voles, lemmings, dragonflies, sparrows, sandpipers  
**Eaten by:** Great horned owls; ravens will take eggs.

**Do You Know?** The harrier often locates prey by sound, using its curved, sound-reflecting facial ruff. The male drops prey items over the nest, and the incubating female flies up to catch them in mid-air.

**173. ROUGH-LEGGED HAWK** **T**

**Traits:** Large bird with long, white tail with dark bands; long, rounded wings; wide band of black across lower breast and belly  
**Habitat:** Alpine and dry lowland tundra near cliffs or river bluffs where it nests; winters in open habitats throughout the Lower 48.  
**Foods:** Lemmings, voles, hares, shrews, ground squirrels, some small birds and insects  
**Eaten by:** Foxes and ravens will eat eggs.

**Do You Know?** Rough-legs may migrate in loose flocks, but are otherwise generally seen singly or in pairs.

**170. SHARP-SHINNED HAWK** **F**

**Traits:** Medium-sized bird with a long tail and rounded wings; long, curved talons; hooked bill  
**Habitat:** Mature broadleaf-conifer forests  
**Foods:** Small birds, including chickadees, warblers, sparrows, thrushes, woodpeckers  
**Eaten by:** Eggs and young may be taken by squirrels and ravens.

**Do You Know?** When hunting, this hawk flies low through the leaves, darting under branches and across small openings. It can turn abruptly in flight to grasp small birds from the ground or capture them in mid-air with its sharp talons.

**174. GOLDEN EAGLE** **T**

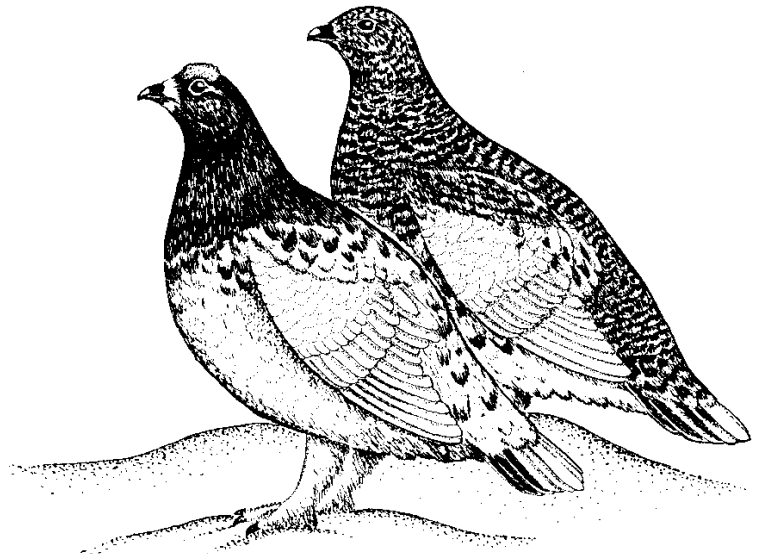
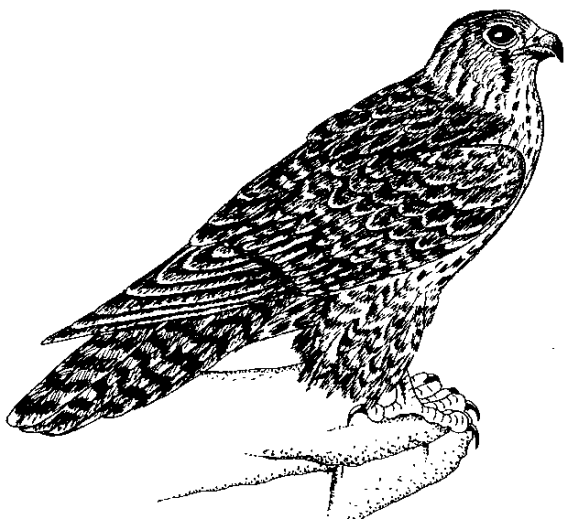
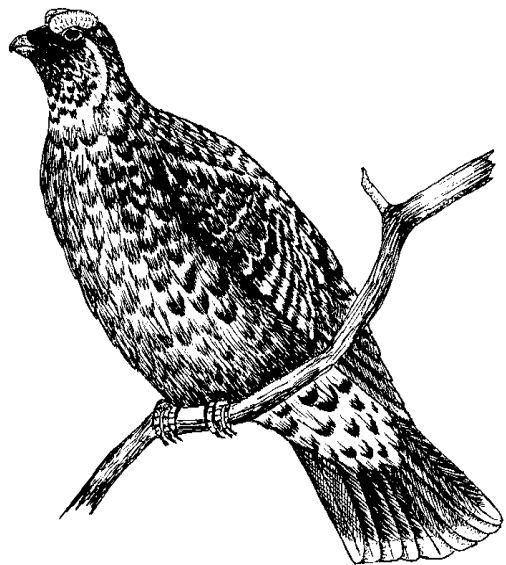
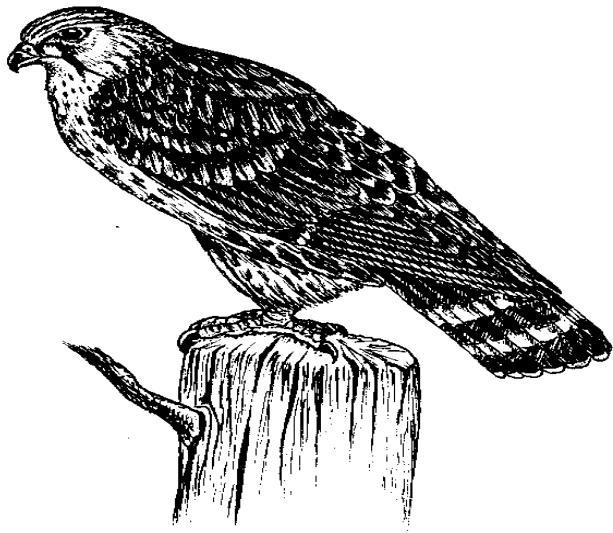
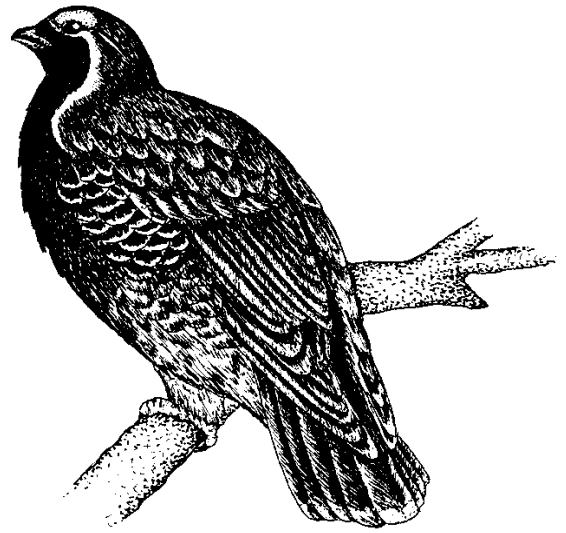
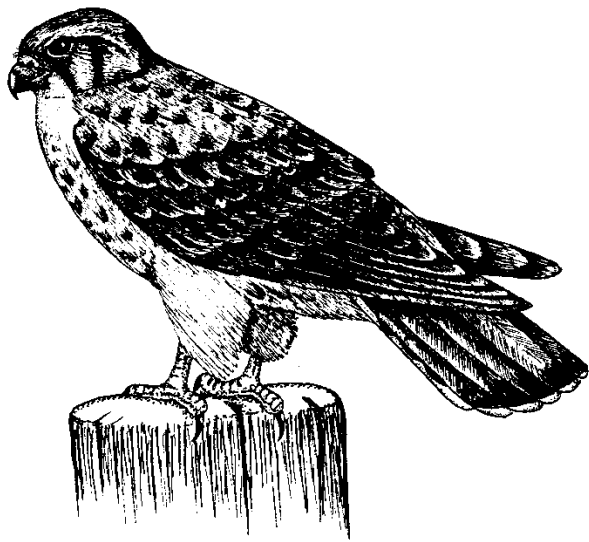
**Traits:** Large, brown bird with golden wash over back of head and neck; dark bill; tail faintly banded  
**Habitat:** Alpine tundra  
**Foods:** Arctic hares, marmots, ground squirrels, ptarmigan, carrion (dead animals)  
**Eaten by:** No known predators

**Do You Know?** Eagles are sometimes electrocuted from high-voltage power lines or caught in leg-hold traps. These injured birds can sometimes be rehabilitated and placed in zoos or released into the wild.

**171. NORTHERN GOSHAWK** **F**

**Traits:** Large gray bird with a long tail and rounded wings; long, curved talons; hooked bill  
**Habitat:** Mixed broadleaf-conifer forests with large, old trees for nest sites  
**Foods:** Squirrels, grouse, ptarmigan, snowshoe hares, large songbirds, woodpeckers, weasels  
**Eaten by:** Great horned owls; eggs and young eaten by foxes, ravens, gulls.

**Do You Know?** Goshawks aggressively defend nest sites, and they will not hesitate to strike people who stray too close to a nest.



## 178. SPRUCE GROUSE

F

**Traits:** Chickenlike bird with rusty band at the tip of dark tail

**Habitat:** Conifer and spruce-broadleaf forests; seeks shelter in forest, but feeds in forest openings. Requires a source of grit and gravel in the fall.

**Foods:** Insects, leaves, shoots, seeds, berries of ground cover plants; conifer needles in winter

**Eaten by:** Goshawks, great horned owls, great gray owls, foxes, lynx, coyotes, humans

**Do You Know?** In courtship display, male spreads his tail, erects red combs above eyes, and struts in his territory.

## 179. BLUE GROUSE

F

**Traits:** Chickenlike bird with long, black tail tipped in gray; female brown, male gray

**Habitat:** Coastal rain forests, muskegs, and alpine areas during summer

**Foods:** Leaves and shoots of ground-cover plants (including herbs and ferns) seeds, berries; some insects (beetles, ants and caterpillars)

**Eaten by:** Great horned owls, goshawks, foxes, humans; weasels and ravens eat eggs and young.

**Do You Know?** Courting males stand on a high spot and inflate their neck sacs to amplify their hooting.

## 180. PTARMIGAN

T

**Traits:** Chickenlike bird with feathered legs and feet; molts feathers three times a year from snow white to mottled brown to match its habitat.

**Habitat:** Alpine and dry lowland tundra

**Foods:** Buds and twigs of willow, dwarf birch, and other shrubs; also seeds, some insects

**Eaten by:** Foxes, lynx, gyrfalcons, golden eagles, humans

**Do You Know?** The feathered feet provide insulation and "snowshoes" that allow ptarmigan to walk on the snow surface. On cold winter nights, ptarmigan bury themselves in the snow to roost.

## 175. AMERICAN KESTREL

F

**Traits:** Medium-sized, reddish-brown bird with a long tail; pointed wings; sharply hooked bill; talons

**Habitat:** Forest edges and openings and early successional stages that include large, dead trees with holes for nesting

**Foods:** Large flying insects (grasshoppers and dragonflies), small mammals and birds (voles, mice, sparrows, chickadees)

**Eaten by:** Great horned owls, other falcons

**Do You Know?** The kestrel is the smallest falcon, and uses abandoned woodpecker cavities for nesting.

## 176. MERLIN

F

**Traits:** Medium-sized falcon with a long tail and sharply pointed wings; hooked bill; talons

**Habitat:** Open coastal and boreal forests; uses stick nests in spruce trees or (less commonly) nests on the ground.

**Foods:** Thrushes, juncos, swallows, waxwings, sparrows, woodpeckers, warblers

**Eaten by:** Squirrels, ravens, and marten may eat eggs.

**Do You Know?** When hunting, the merlin often flies low over ground, frequently rising and falling in flight. It overtakes prey by plucking it out of the air with its sharp talons.

## 177. GYRFALCON

T

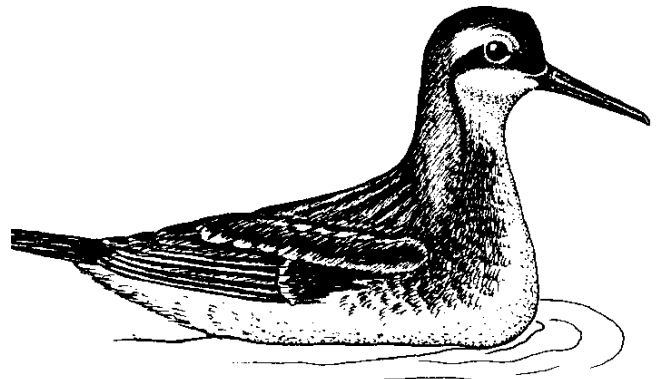
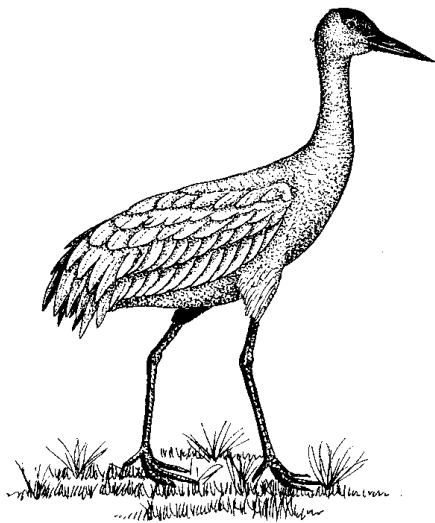
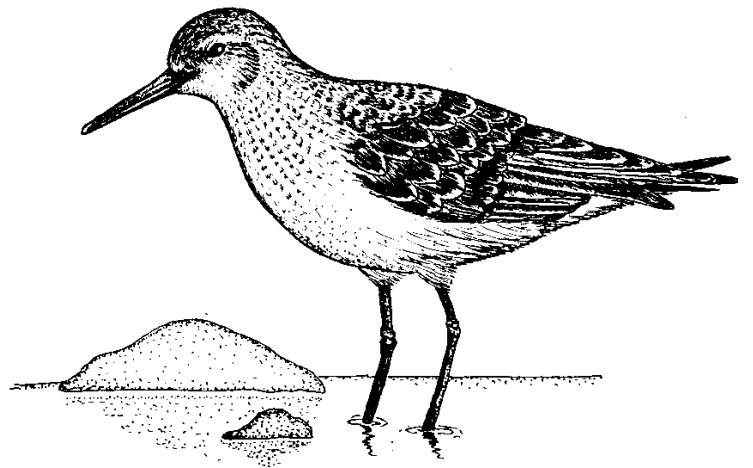
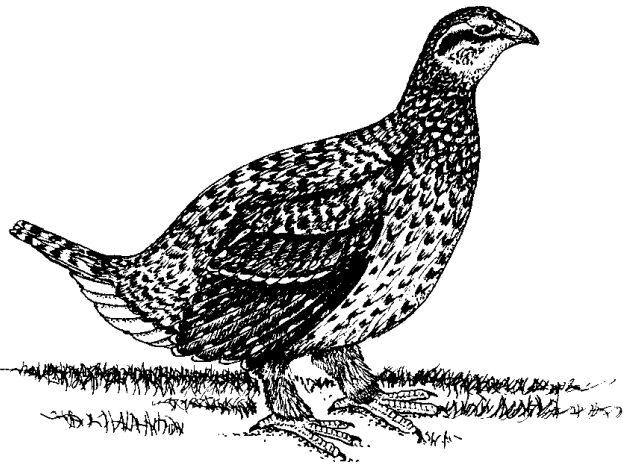
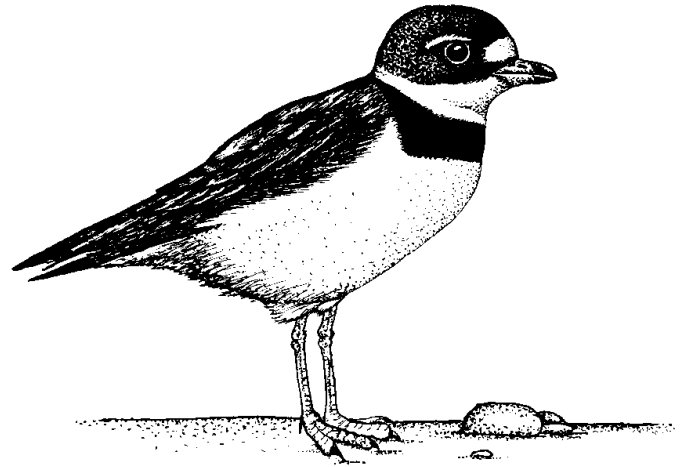
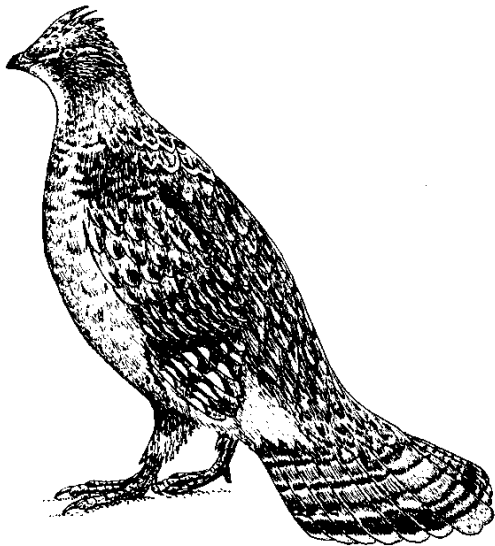
**Traits:** Large falcon with heavy body; pointed wings; narrow tail

**Habitat:** Alpine tundra near rocky outcrops and cliffs

**Foods:** Ptarmigan, other birds (gulls, jaegers, sandpipers, plovers, snow buntings, longspurs), some small mammals (lemmings, ground squirrels, hares)

**Eaten by:** Great horned owls, golden eagles; eggs and young taken by foxes, ravens.

**Do You Know?** Gyrfalcons remain in Alaska throughout the year because their prey, ptarmigan, also stay.



## 184. PLOVER

T,W

**Traits:** Shorebirds with short tails and long pointed wings; short, stout beak; brown or gray feathers

**Habitat:** Alpine and lowland tundra; in winter, coastal wetlands and prairies

**Foods:** Caterpillars, flies, mosquitoes, beetles, grasshoppers, mollusks, crustaceans, marine worms, some berries

**Eaten by:** Jaegers, ravens, falcons, arctic foxes, weasels

**Do You Know?** Other shorebirds nesting near plovers gain an advantage from the watchful plovers' warning cries when predators approach.

## 181. RUFFED GROUSE

F

**Traits:** Chickenlike bird with a ruff of black feathers on sides of neck; dark band at edge of gray tail

**Habitat:** Broadleaf forests; thickets of willow and alder

**Foods:** Insects, leaves, shoots, seeds and berries of trees and plants; in winter eats aspen catkins

**Eaten by:** Goshawks, great horned owls, great gray owls, foxes, lynx, humans

**Do You Know?** In courtship display, the male stands on a log or stump, erects the ruff on his neck, and rapidly beats his wings, creating a "drumming" sound.

## 185. SANDPIPER

T,W

**Traits:** Small shorebirds with black legs, long bills, reddish markings on the head

**Habitat:** Drier tundra; winters along coastal tideflats.

**Foods:** Amphipods, small clams, worms, larvae of craneflies and midges

**Eaten by:** Foxes, falcons, jaegers, gulls, falcons, owls, weasels

**Do You Know?** Some sandpipers fly as far south as Argentina and Chile to spend the winter!

## 182. SHARP-TAILED GROUSE

F

**Traits:** Chickenlike bird with narrow, stiff tail and V-shaped markings on breast

**Habitat:** Open grass areas and shrub thickets in boreal forests

**Foods:** Insects, leaves, shoots, buds, seeds and berries of shrubs and ground-cover plants, insects

**Eaten by:** Goshawks, great horned owls, great gray owls, foxes, lynx, coyotes

**Do You Know?** In the spring courtship ritual, males taxi like wind-up airplanes and follow a routine of feet-drumming and circling.

## 186. PHALAROPE

T,W

**Traits:** Small bird with a straight, thin bill and four lobed toes; the only shorebird that swims

**Habitat:** Nests amid grasses and sedges in wetlands. Winters at sea, mainly in southern hemisphere.

**Foods:** Plankton, mosquitoes, midges, black flies, craneflies, amphipods, copepods, fairy shrimp

**Eaten by:** Foxes, falcons, gulls, weasels, owls, jaegers

**Do You Know?** Their native name "Nimishuruk" means "spins in a circle," after the spinning motion that phalaropes use, while swimming, to stir up prey in water.

## 183. SANDHILL CRANE

T, W

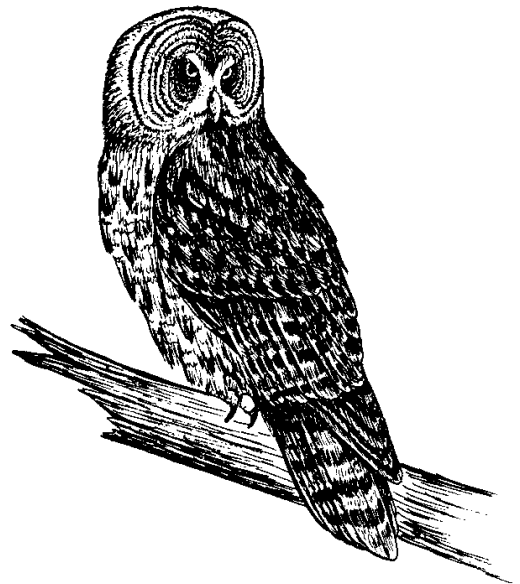
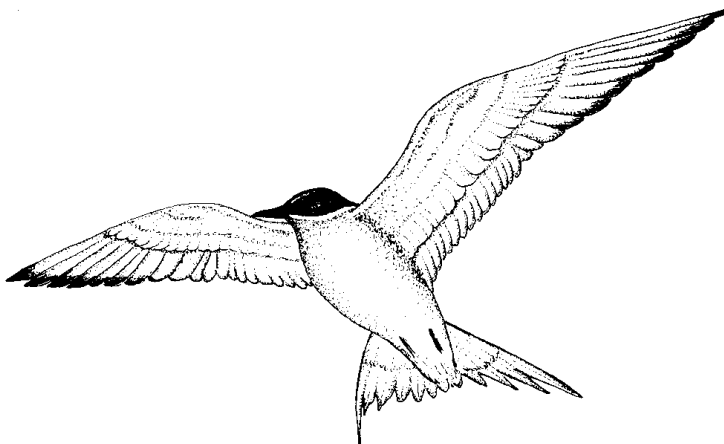
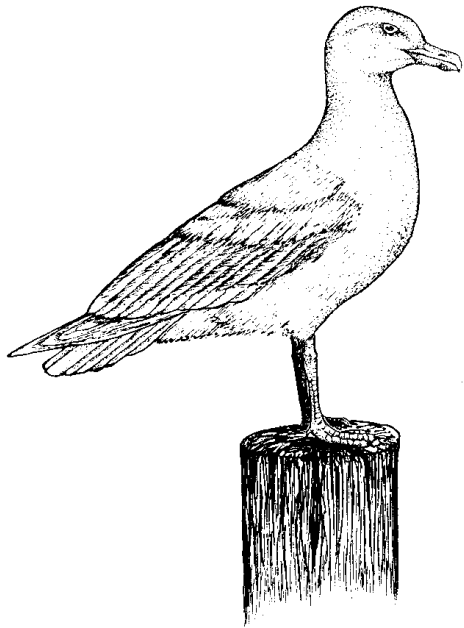
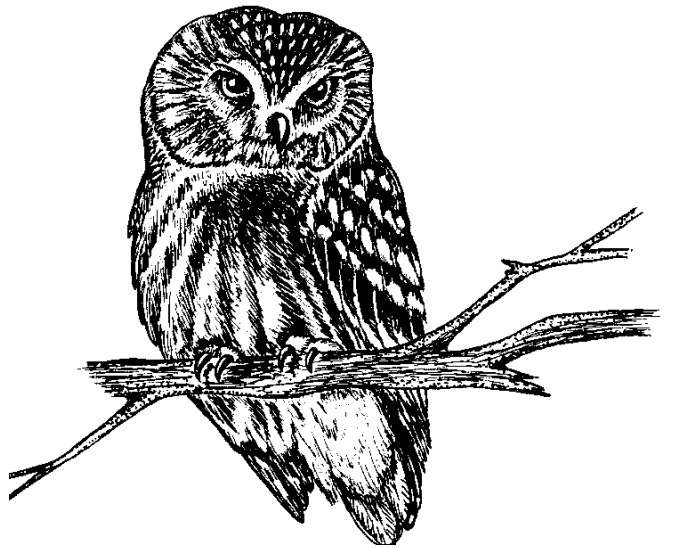
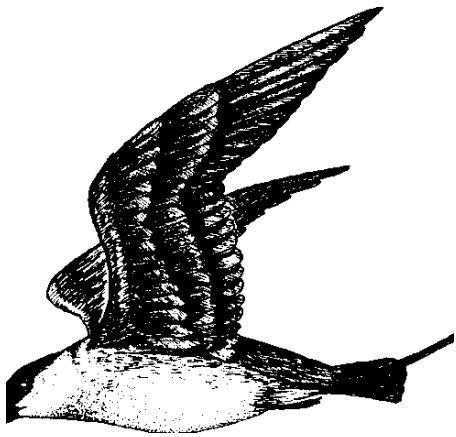
**Traits:** Large, gray bird with long neck, long legs, long beak; red skin on crown; whitish chin, cheek, and upper throat

**Habitat:** Lowland tundra, muskeg and river bottoms in summer; migrates to plains and coast of Lower 48 during winter.

**Foods:** Shoots, roots, and seeds of wetland plants; lemmings; voles; insects

**Eaten by:** Foxes, golden eagles, bald eagles, wolves, humans; eggs eaten by gulls.

**Do You Know?** Cranes migrate at great heights. Some have been observed at elevations of 13,000 feet (3,962 m)!



**190. NORTHERN SAW-WHET OWL F,W**

**Traits:** Small, brown bird with large, forward-facing eyes; long talons; hooked bill; streaked breast

**Habitat:** Coniferous or mixed forests, wooded swamps, tamarack bogs

**Foods:** Insects, voles, mice, shrews, bats, sparrows, juncos, warblers

**Eaten by:** Great-horned owls, marten

**Do You Know?** This owl depends on woodpeckers to excavate cavities in trees that it needs for nesting and roosting.

**187. PARASITIC JAEGER T,W**

**Traits:** Gull-like bird with strongly hooked bill and long, pointed wings; long central tail feathers; predator

**Habitat:** Alpine and lowland tundra throughout Alaska; in winter, ocean

**Foods:** Lemmings, small birds, fish, eggs and young of geese, ducks, shorebirds

**Eaten by:** Eggs and young may be eaten by foxes, bears, gulls, falcons, eagles, ravens.

**Do You Know?** Jaegers are pirates chasing smaller birds and forcing them to drop fish they have caught or swallowed.

**191. GREAT HORNED OWL F**

**Traits:** Large, brown bird with large, forward-facing eyes; feathers stick up on its head and look like horns; sharp talons, hooked bill

**Habitat:** Mature and old-growth forests throughout Alaska

**Foods:** Hares, squirrels, voles, mice, weasels, mink, porcupines, grouse, waterfowl

**Eaten by:** Other great horned owls

**Do You Know?** This owl often uses the abandoned nests of hawks, eagles, and ravens. It is very aggressive and will attack humans in defense of its nest.

**188. GLAUCOUS GULL T,W**

**Traits:** Large bird with pale gray wings and back; light can be seen through the white wing tips.

**Habitat:** Wetlands in tundra and marine coastal bluffs

**Foods:** Scavenges on dead animals; also eggs and young of other birds, crustaceans, insects, fish

**Eaten by:** Young bears; eggs eaten by jaegers, ravens, foxes

**Do You Know?** Gulls can stand on ice and still keep warm because of a special arrangement of blood vessels in their legs. Cold blood returning from the feet is warmed before it reaches the gull's body.

**192. GREAT GRAY OWL F**

**Traits:** Large, gray bird with forward-facing eyes; rounded head; sharp talons; hooked bill

**Habitat:** Boreal forests; nests in old trees but feeds in open areas, including early successional stages, muskegs, and along rivers

**Foods:** Voles

**Eaten by:** Great horned owls

**Do You Know?** This owl has a very large facial disk with concentric gray circles. It is the largest owl in Alaska (because of its fluffy plumage), although not the heaviest or strongest.

**189. TERNS F,T,W**

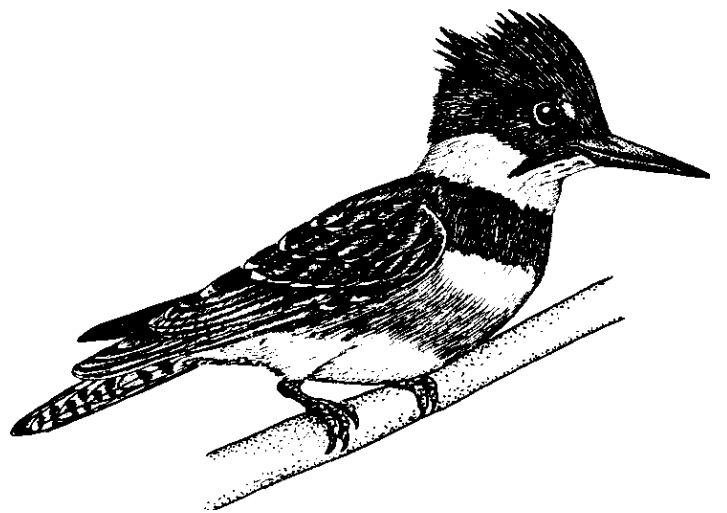
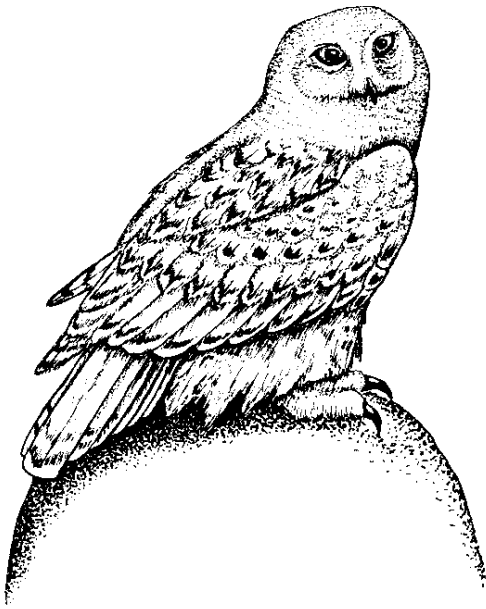
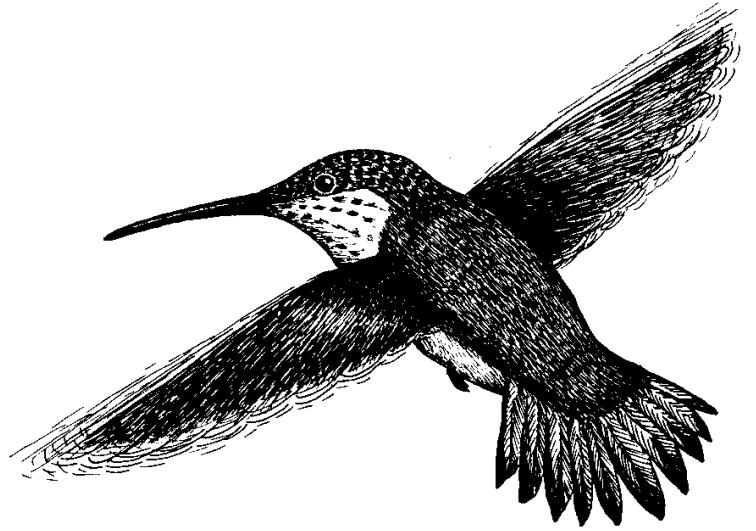
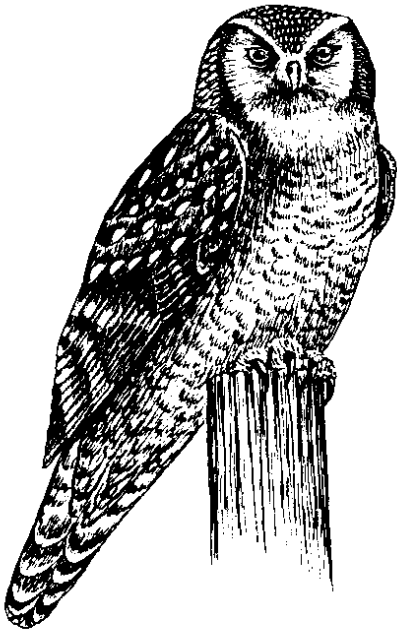
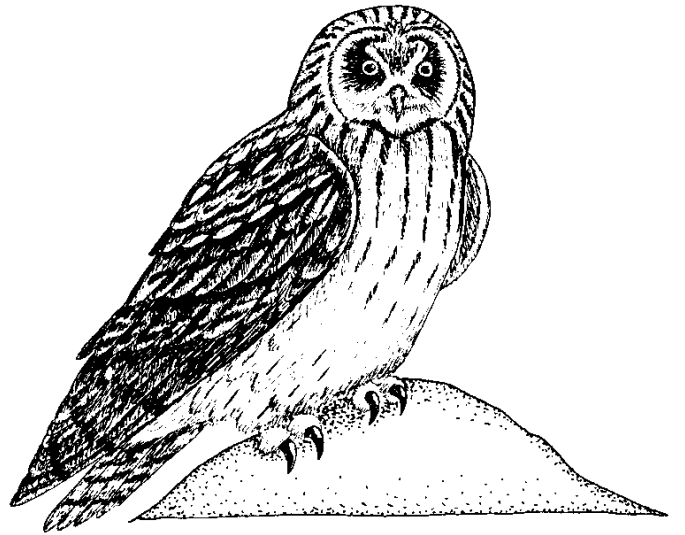
**Traits:** Birds with webbed feet, deeply forked tails, straight bills, and slender bodies.

**Habitat:** Wetlands in tundra and forested areas

**Foods:** Small fish

**Eaten by:** Falcons; eggs and young eaten by foxes, weasels, bears, gulls, jaegers, ravens

**Do You Know?** Terns attack any predators that come near their nesting colonies. Other birds nesting near tern colonies benefit from the terns' harassment of potential predators.



**196. SHORT-EARED OWL****T,W**

**Traits:** Small, buffy-brownish colored owl with boldly streaked breast; light facial disk; ear tufts barely visible

**Habitat:** Moist tundra and wetlands throughout Alaska

**Foods:** Small mammals and birds (voles, shrews, lemmings, young hares, sparrows, shorebirds)

**Eaten by:** Great horned owls; eggs and young may be eaten by foxes, bears, ravens, weasels.

**Do You Know?** Short-eared owls are highly nomadic; they appear when rodents are plentiful and move to other areas when food is scarce.

**193. BOREAL OWL****F**

**Traits:** Small, brown bird with large, forward-facing eyes; rounded head; streaked breast; short tail; curved talons

**Habitat:** Mixed spruce-broadleaf forests; nests in natural cavities in trees.

**Foods:** Voles, small birds including chickadees, warblers, thrushes

**Eaten by:** Great horned owls; eggs may be eaten by squirrels.

**Do You Know?** This owl's voice sounds like the ringing of a soft bell (also compared to the winnowing of the common snipe).

**197. RUFIOUS HUMMINGBIRD****F**

**Traits:** Very small bird; long bill with long, brush-tipped tongue; able to hover and fly backwards

**Habitat:** Coastal forest openings; nests on a conifer tree branch.

**Foods:** Flower nectar and pollen; also insects, especially spiders

**Eaten by:** Eggs or young may be eaten by squirrels, short-eared owls, sharp-shinned hawks.

**Do You Know?** The rufous hummingbird is the smallest bird in Alaska.

**194. NORTHERN HAWK OWL****F**

**Traits:** Medium-sized, gray-brown bird with large, forward-facing eyes; rounded head; barred breast; long tail

**Habitat:** Recently burned areas with large vole populations and black spruce forests; nests in tops of broken birch or spruce trees.

**Foods:** Small mammals(voles), small birds (sparrows)

**Eaten by:** Great horned owls

**Do You Know?** Unlike most owls, the northern hawk owl often hunts during daylight hours (diurnal). Watch for it sitting in a tree top.

**198. BELTED KINGFISHER****F,T,W**

**Traits:** Medium-sized, chunky body; large head with crest; long, sharply pointed bill; small legs and feet; two front toes joined together

**Habitat:** Coasts, rivers, lakes, ponds

**Foods:** Sticklebacks, sculpin, blackfish, young salmon, herring, eulachon, crustaceans, mollusks, aquatic insects

**Eaten by:** Falcons, hawks, eagles

**Do You Know?** The kingfisher digs its upslanting burrow in creek, river, lake, or pond bank for nesting. Nest is often lined with fish bones.

**195. SNOWY OWL****T,W**

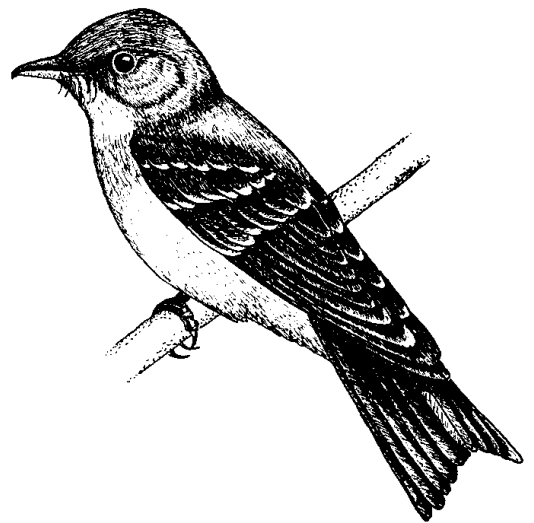
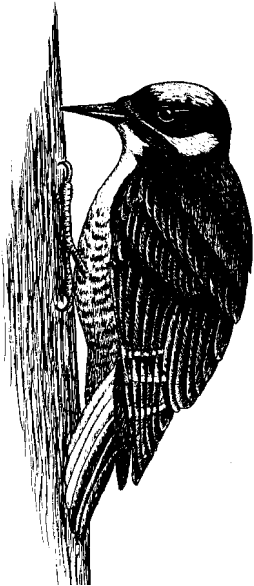
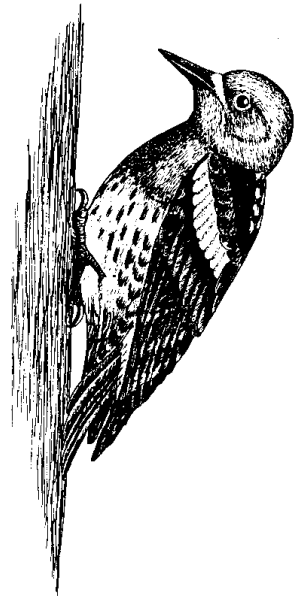
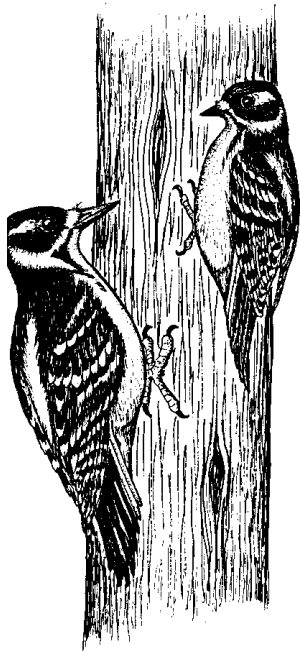
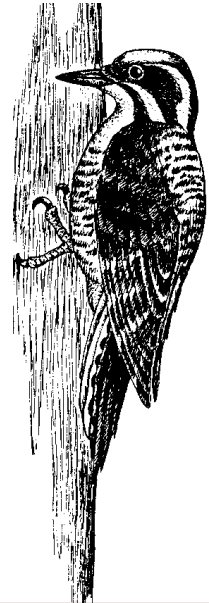
**Traits:** Large, white bird with a sharply hooked bill; talons; large forward-facing eyes; broad wings and tail; only all-white owl; they have varied amounts of black speckling. Nests on the ground.

**Habitat:** Coastal lowland tundra

**Foods:** Lemmings and other small mammals (voles, shrews, ground squirrels, hares, weasels)

**Eaten by:** Foxes eat young.

**Do You Know?** These owls have been recorded as far south as the southern United States and Bermuda.



**202. THREE-TOED WOODPECKER** F

**Traits:** Medium-sized bird with thick, pointed bill and stiff tail feathers; back is barred with black and white; males have yellow crowns

**Habitat:** Old forests and recently burned forests with many dead and dying trees (snags)

**Foods:** Insects that live beneath tree bark, (bark beetles, longhorn beetles, horntails, and others)

**Eaten by:** Hawks, falcons, owls

**Do You Know?** These birds excavate cavities in dead and diseased trees for nesting and roosting. Their holes provide homes for other cavity-nesting birds and mammals.

**199. NORTHERN FLICKER** F

**Traits:** Medium-sized bird with stout, sharp bill; long tongue; stiff tail feathers

**Habitat:** Open forests and early successional stages that contain standing dead trees (snags)

**Foods:** Insects that live beneath the bark of trees (such as bark beetles) and some that live in the ground, including ants

**Eaten by:** Hawks, falcons, owls

**Do You Know?** Two subspecies of the northern flicker occur in Alaska: the red-shafted and the yellow-shafted.

**203. RED-BREASTED SAPSUCKER** F

**Traits:** Medium-sized bird with stout, pointed bill; reddish head and breast

**Habitat:** Coastal rainforest sites that contain many large dead and dying trees (snags)

**Foods:** Insects that live beneath the bark of dying and dead trees (bark beetles, longhorn beetles, horntails, and others)

**Eaten by:** Falcons, hawks, owls

**Do You Know?** Sapsuckers are responsible for the horizontal rows of squarish holes frequently found on tree trunks. They drink sap from these holes and may also obtain insects that are attracted by the sap.

**200. HAIRY and DOWNY WOODPECKER** F

**Traits:** Birds with stout, pointed bills and stiff tails; white stripes on the backs; black and white markings on the face; red patch on the back of male's head

**Habitat:** Broadleaf or conifer forests, early successional stages that contain dying and dead trees (snags)

**Foods:** Insects that live beneath tree bark (bark and longhorn beetles, horntails and others)

**Eaten by:** Merlins, sharp-shinned hawks, falcons

**Do You Know?** These birds excavate holes in dead trees for nesting and roosting. Their holes later provide homes for other cavity-dependent birds and mammals.

**204. FLYCATCHER** F,T,W

**Traits:** Small birds with upright posture, long tails, and large mouths.

**Habitat:** Varies by species; some need tall shrub thickets, and others live only in mature boreal or coastal forests.

**Foods:** Flies, moths, butterflies, other flying insects

**Eaten by:** Falcons, hawks, small owls

**Do You Know?** Flycatchers "hawk" flying insects by sitting on an elevated perch to spot their prey, flying out, and snapping up these insects in mid-air.

**201. BLACK-BACKED WOODPECKER** F

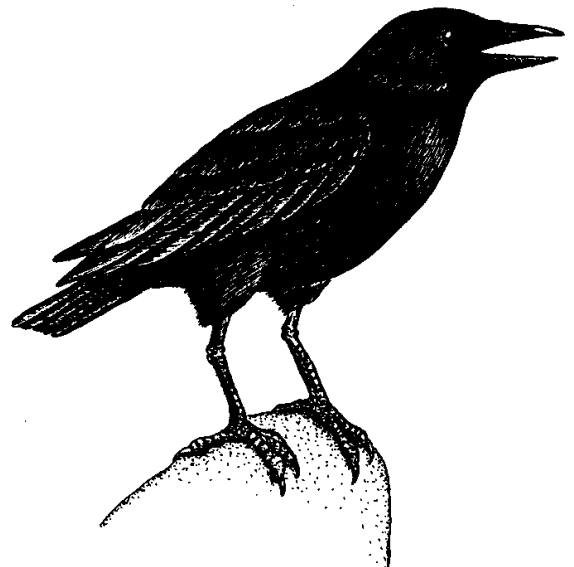
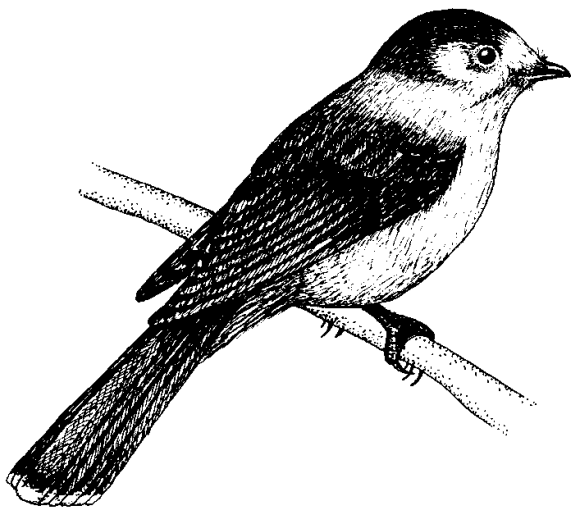
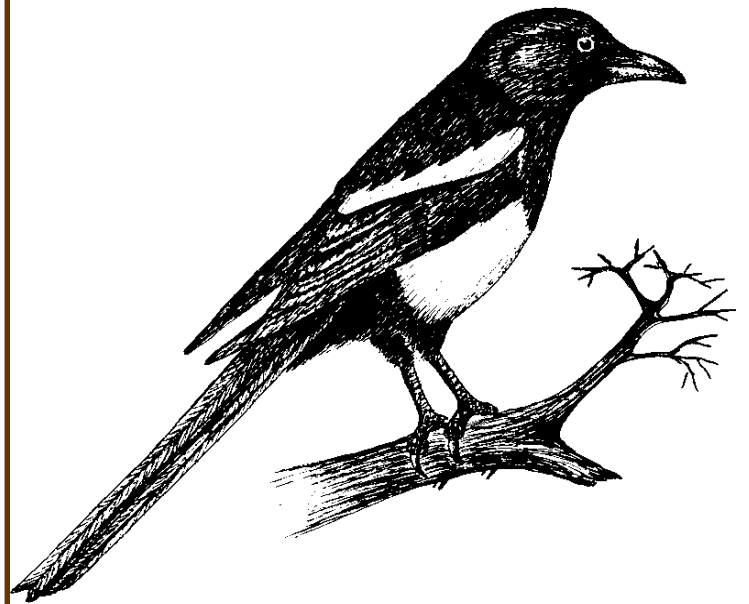
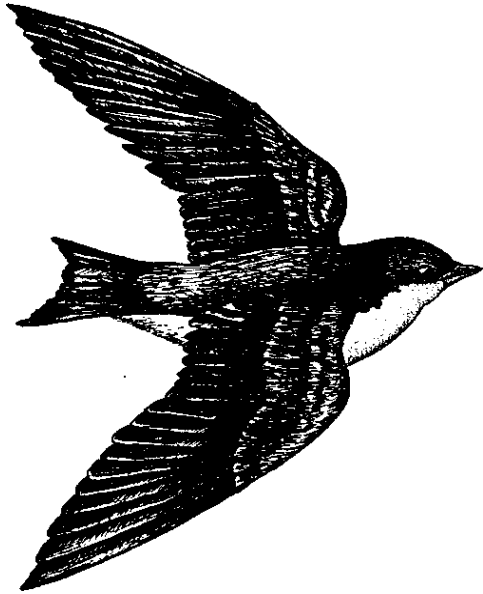
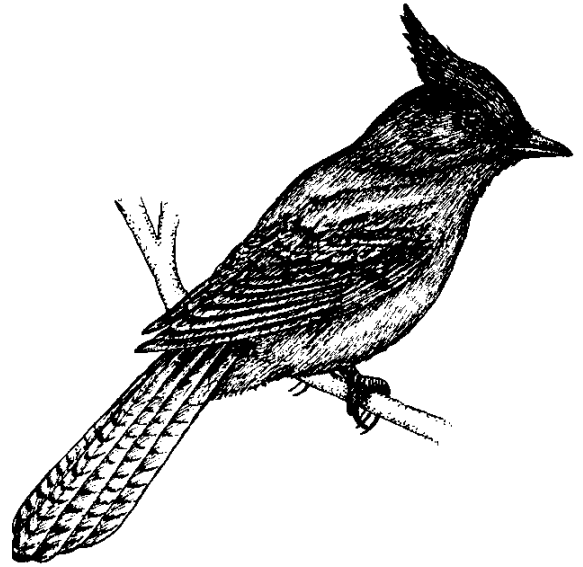
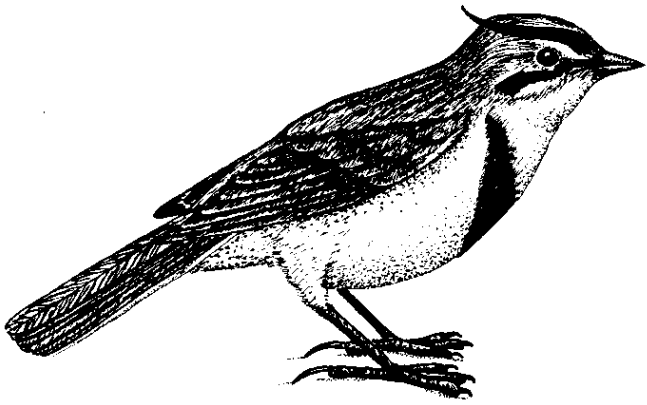
**Traits:** Medium-sized bird with a black back; thick, pointed bill; long, stout tail; yellow crown on males

**Habitat:** Recent burns and open forests with dead and dying trees (snags)

**Foods:** Insects that live beneath the bark of dead and dying trees, especially beetle larvae

**Eaten by:** Hawks, falcons, owls; marten and squirrels eat young.

**Do You Know?** This bird forages on dead conifers, chipping away large patches of bark rather than drilling into it, in search of larvae and insects. It moves into burned forests to feed on insects attacking injured trees.



**208. STELLER'S JAY****F**

**Traits:** Medium-sized, dark blue and black bird with a long tail

**Habitat:** Coastal rainforest, including openings and edges during summer

**Foods:** Seeds and berries of trees and shrubs, beetles, grasshoppers, caterpillars, moths, spiders, eggs, young birds

**Eaten by:** Hawks, falcons, owls

**Do You Know?** Jays sometimes follow predators around, or are attracted by predator activities. They then feed on the scraps left by predators.

**205. HORNED LARK****T**

**Traits:** Medium-sized bird with slender bill; black "horns"; broad black stripe under eye; black bib

**Habitat:** Alpine tundra in summer; plains of Lower 48 in winter

**Foods:** Caterpillars, ants, wasps, grasshoppers, leafhoppers, spiders, seeds of grasses and other plants

**Eaten by:** Foxes, weasels, jaegers, falcons, short-eared owls

**Do You Know?** In its courtship flight, the male horned lark climbs to heights of 800 feet (244 m) and begins its high-pitched flight song as it circles downward.

**209. BLACK-BILLED MAGPIE****F,W**

**Traits:** Large, black and white bird with glossy green and blue feathers; very long tail; large, stout bill

**Habitat:** Builds a domed stick nest in spruce or broadleaf trees; feeds in the forests and in openings

**Foods:** Small mammals, insects and other invertebrates, berries, carrion (dead animals), eggs and young of other birds

**Eaten by:** Squirrels, weasels, marten, and ravens eat eggs and young.

**Do You Know?** Abandoned nests of this bird are sometimes used by other birds, including merlins.

**206. SWALLOW****F,T,W**

**Traits:** Small bird with a slender body and long, pointed wings; tiny bill; short legs; and small feet; moderately long, forked tail

**Habitat:** Open areas around lakes, ponds, and rivers; some species nest in tree cavities.

**Foods:** Flying insects (flies and mosquitoes)

**Eaten by:** Hawks, falcons

**Do You Know?** Swallows catch almost all their food in flight, sometimes even skimming insects off the surface of ponds and lakes.

**210. NORTHWESTERN CROW****F,W**

**Traits:** Medium-sized, black bird with a square tail and heavy bill

**Habitat:** Coastal forests; nests in dense thickets of spruce or hemlock trees. Feeds along the shoreline.

**Foods:** Invertebrates (mussels and limpets), carrion (dead animals), eggs and young birds, small mammals

**Eaten by:** Great horned owls, goshawks; eggs taken by ravens, jays, squirrels

**Do You Know?** Crows open clams and mussels by carrying them aloft and dropping them on rocks below.

**207. GRAY JAY****F,T**

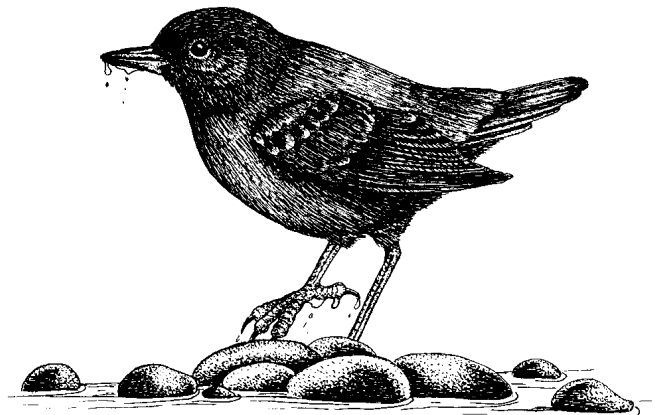
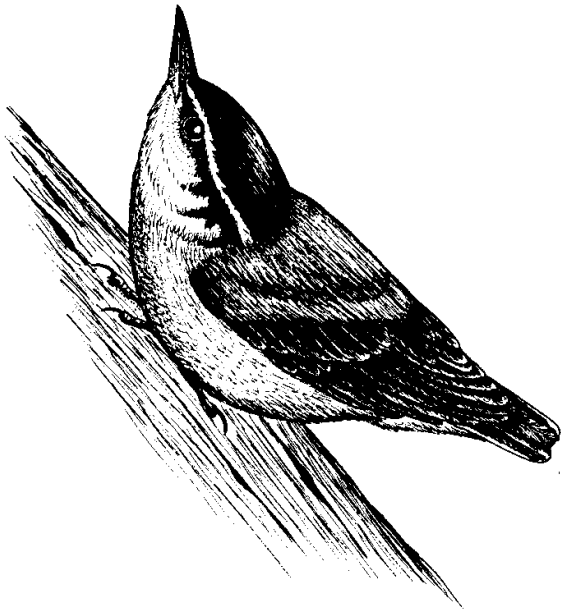
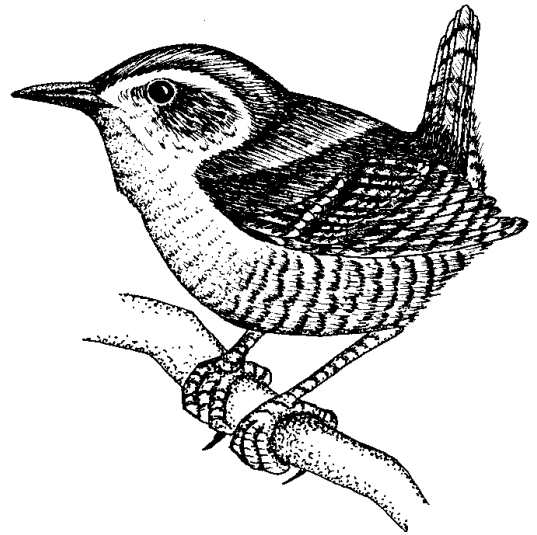
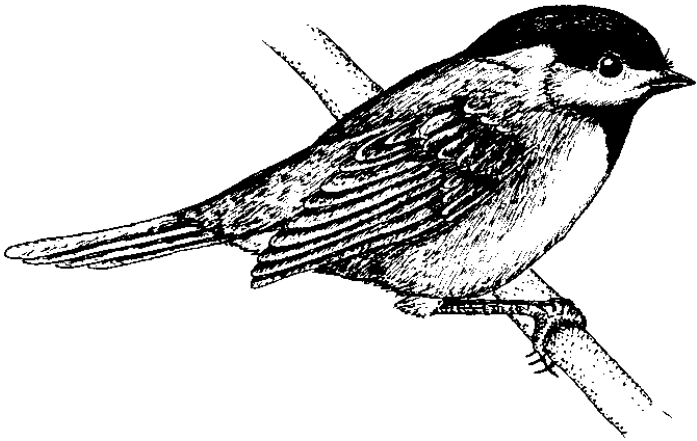
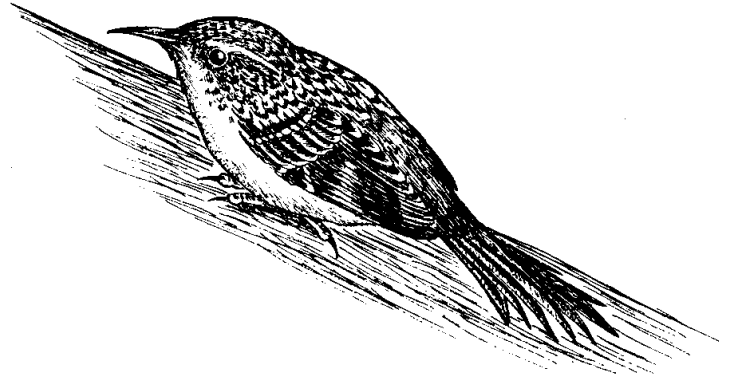
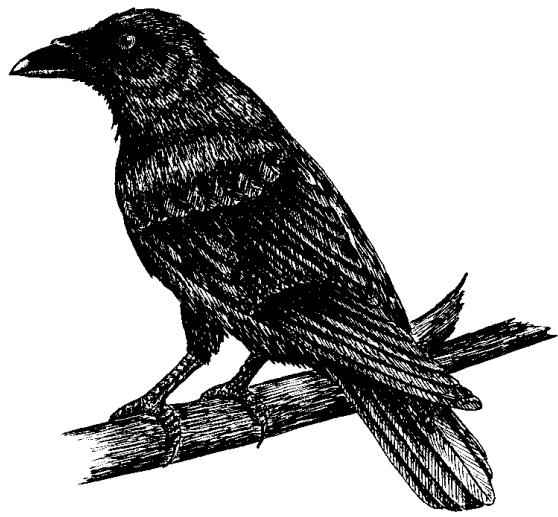
**Traits:** Medium-sized, gray bird with long tail; rounded wings, slightly hooked bill

**Habitat:** Mature forests and forest openings; more common in boreal forests

**Foods:** Variety; eggs and young of other birds, small mammals, insects and other invertebrates, berries, dead animals

**Eaten by:** Hawks, falcons, owls

**Do You Know?** When gray jays find an abundant food source, they hide small caches for later use; sticky saliva help them attach to trees and crevices.



**214. BROWN CREEPER** **F**

**Traits:** Small brown bird with thin, curved bill and stiff tail feathers

**Habitat:** Old-growth forest for feeding and nesting; nests in tree cavities or behind bark that has peeled away from the trunk of a dead tree.

**Foods:** Insects that live in and under the bark of trees (beetles, moths, flies, spiders)

**Eaten by:** Sharp-shinned hawks, boreal owls

**Do You Know?** Brown creepers spiral up trees from near the base, hugging the bark closely as they search for insects.

**211. COMMON RAVEN** **F,T,W**

**Traits:** Large, black bird with wedge-shaped tail; broad wings; heavy bill.

**Habitat:** Forests, shrublands, tundra, wetlands; builds a stick nest on cliffs or in trees.

**Foods:** Small mammals, birds, berries, carrion (dead animals), eggs and young of other birds

**Eaten by:** Crows, marten, jays, or other predators may take eggs.

**Do You Know?** Ravens are very intelligent. They often work cooperatively to “steal” food from large predators and pets.

**215. WINTER WREN** **F**

**Traits:** Small brown bird that holds its short tail upright; thin bill

**Habitat:** Coastal forest habitats that include shrubs and ground cover plants; old-growth forests during winter

**Foods:** Beetles, sawflies, ants, caterpillars, aphids, lacewings, spiders, mites

**Eaten by:** Sharp-shinned hawks, boreal and saw-whet owls; shrews and squirrels prey on eggs and young.

**Do You Know?** The wren’s loud song and aggressive territorial defense are surprising considering its small size.

**212. CHICKADEE** **F**

**Traits:** Small gray or brown bird with short, thin bill; long tail; dark cap and chin

**Habitat:** Boreal chickadees need mature boreal forests with conifer trees. Black-capped chickadees use broadleaf or mixed forests. Chestnut-backed chickadees use old-growth coastal forests.

**Foods:** Insects from leaves, bark, or branches (thrips, moths, butterflies, lacewings, flies, spiders); also seeds and berries

**Eaten by:** Small hawks, owls, shrikes

**Do You Know?** Chickadees can put on 8 percent of their body weight in fat each day. Each winter day, chickadees go through the same cycle: eat and put on fat in the short daylight, then burn up fat to keep warm through the long night.

**216. AMERICAN DIPPER** **F**

**Traits:** Plump, all-gray bird with short neck, short bill, short tail, and long toes

**Habitat:** Clear, fast-moving streams primarily in conifer forests

**Foods:** Larvae of caddisflies, stoneflies, mayflies, mosquito, midges, water striders, water boatmen, diving beetles; also clams, snails, small fish, fish eggs

**Eaten by:** Hawks, mink, weasels; sometimes large fish

**Do You Know?** Dippers can walk underwater by grasping stream bottoms with their long toes and pushing forward with short wing strokes.

**213. RED-BREASTED NUTHATCH** **F**

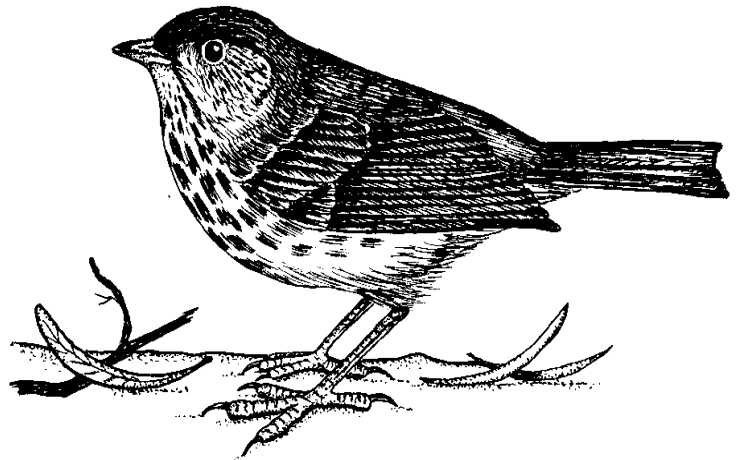
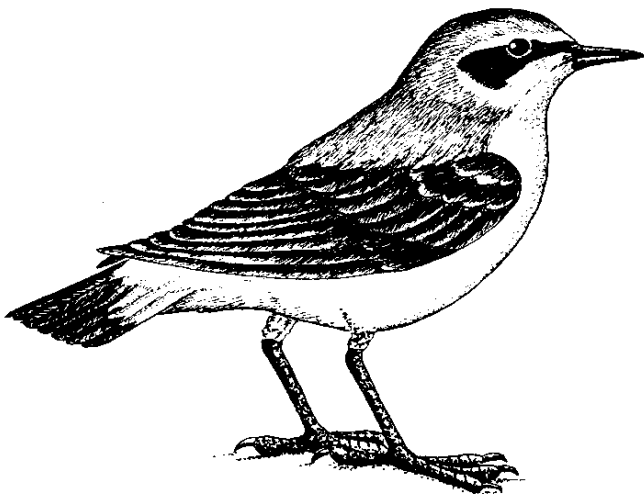
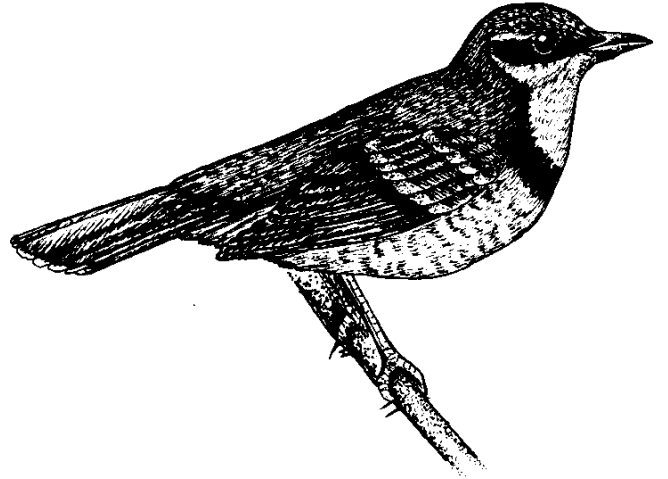
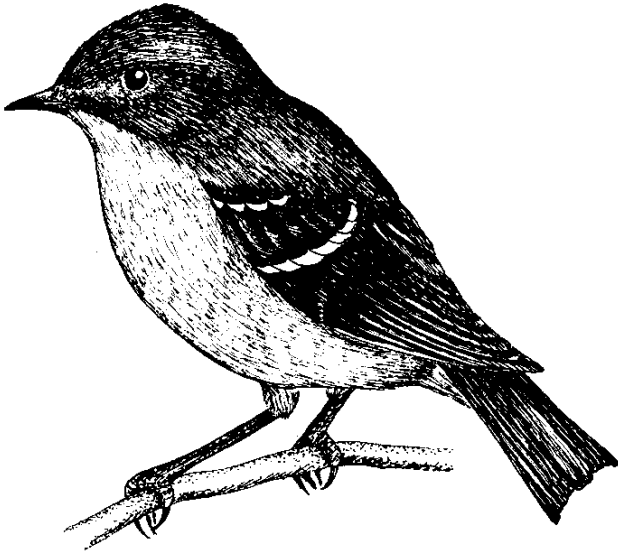
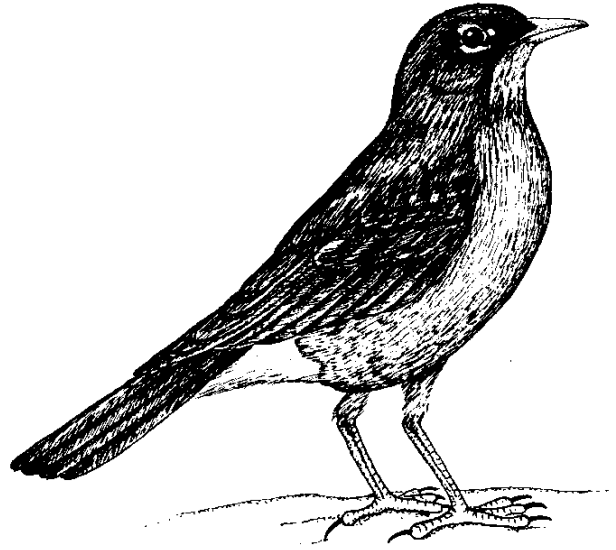
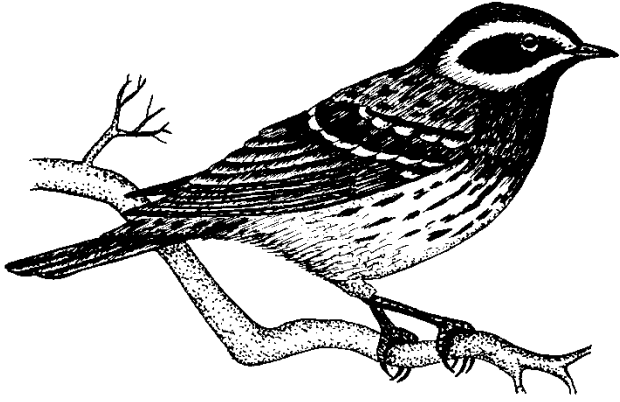
**Traits:** Small bird with a short tail and chunky body; long, chisel-like bill; dark gray on top, reddish underneath

**Habitat:** Mature forest stands with large trees having holes for nesting and roosting

**Foods:** Insects that live on the bark and leaves of trees; also seeds of conifers

**Eaten by:** Sharp-shinned hawks, boreal owls

**Do You Know?** By traveling down trunks head first, nuthatches find food in crevices that is missed by other birds (brown creepers) that move up the trunk.



## 220. AMERICAN ROBIN

F,T,W

**Traits:** Medium-sized bird with a long tail and short, thin bill; gray on back, reddish breast

**Habitat:** Open areas with many ground-cover plants as feeding areas; songposts and nest sites in tall shrubs or trees

**Foods:** Beetles, grasshoppers, ants, caterpillars, worms, berries and other fruits

**Eaten by:** Hawks, falcons, owls, cats

**Do You Know?** Robins are aggressive during the breeding season. A male will fight with his own reflection thinking it is another male robin.

## 217. WARBLER

F

**Traits:** Small birds with thin bills; many have yellow markings.

**Habitat:** Varies by species; shrub thickets, mixed and conifer forests

**Foods:** Insects that live on leaves and twigs of trees and shrubs (true bugs, leafhoppers, moth and butterfly larvae, aphids, flies, beetles, sawflies, spiders)

**Eaten by:** Merlins, sharp-shinned hawks, shrikes

**Do You Know?** Most warblers winter in Central or South America.

## 221. VARIED THRUSH

F

**Traits:** Medium-sized bird with a long tail and short, thin bill; gray on back, reddish underneath with black "V" on breast.

**Habitat:** Conifer and mixed forests; nests in trees, but feeds on the ground.

**Foods:** Beetles, ants, flies, caterpillars, grasshoppers, spiders, snails, worms, millipedes and other invertebrates; also berries

**Eaten by:** Hawks, falcons, owls; red squirrels prey on eggs.

**Do You Know?** The song of the varied thrush sounds like a telephone ringing.

## 218. KINGLET

F

**Traits:** Tiny birds with short, thin bills and short tails; males have flame-colored crowns.

**Habitat:** Mature and old-growth forests; ruby-crowned kinglets prefer mixed forests. Golden-crowned kinglets mainly use mature coastal forests.

**Foods:** Insects that live on the leaves of trees and tall shrubs (true bugs, moth and butterfly larvae, aphids, ants, beetles, spiders)

**Eaten by:** Merlins, sharp-shinned hawks, small owls

**Do You Know?** Despite being one of the smallest birds, the ruby-crowned kinglet has a song that is one of the loudest.

## 222. SMALL THRUSHE

F,T,W

**Traits:** Small birds with long tails and short, thin bills; brown backs; spots on white breast

**Habitat:** Tall shrub thickets, forest openings and edges, old conifer or broadleaf forests

**Foods:** Beetles, ants, moth and butterfly larvae, flies, treehoppers, millipedes, snails, berries

**Eaten by:** Hawks, falcons, owls; red squirrels prey on eggs.

**Do You Know?** Thrush habitat is being rapidly destroyed; we are in danger of losing these fine songsters from forests in the eastern United States.

## 219. NORTHERN WHEATEAR

T,W

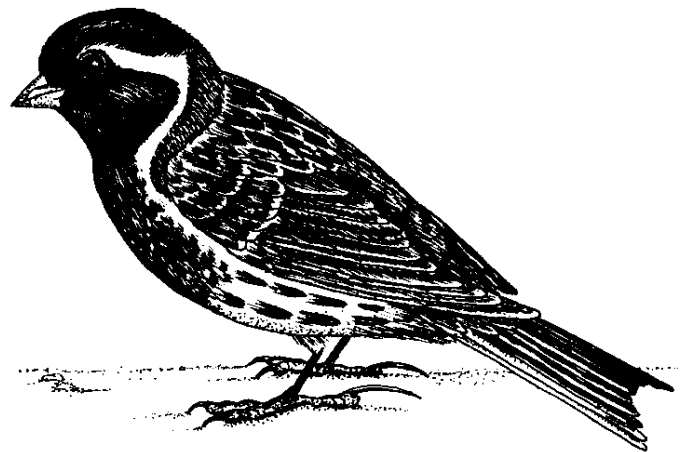
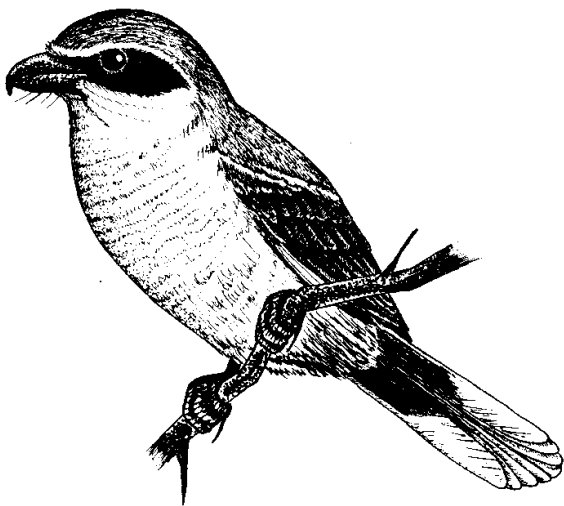
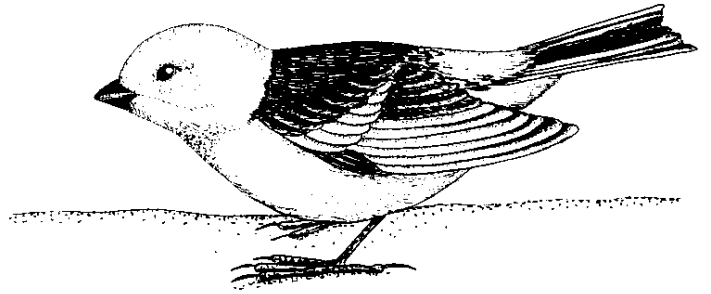
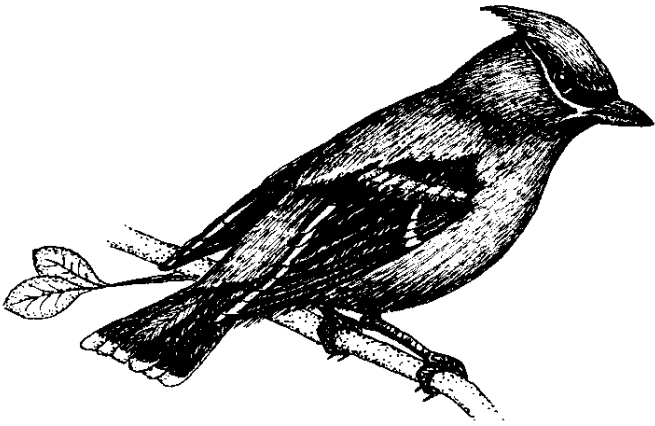
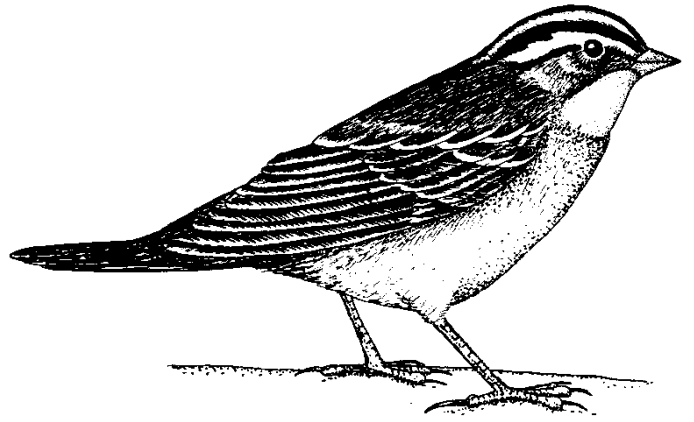
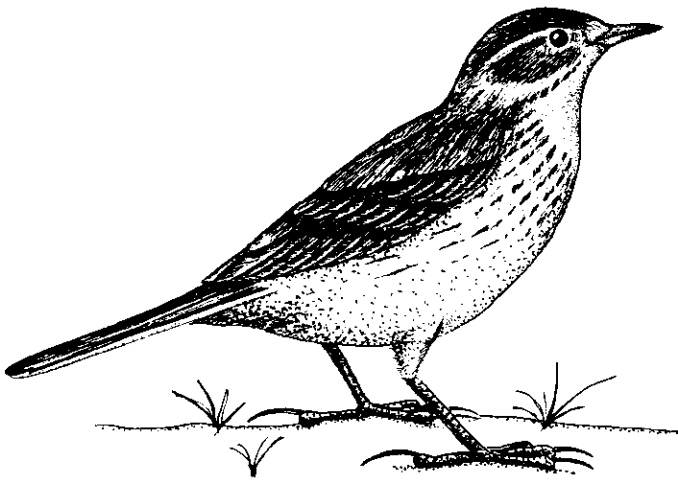
**Traits:** Small bird with white rump patch; black and white tail pattern like an upside-down "T"

**Habitat:** Alpine and dry lowland tundra in summer; coastal wetlands in winter

**Foods:** Spiders and other invertebrates

**Eaten by:** Jaegers, weasels, foxes, short-eared owls, falcons

**Do You Know?** The wheatear migrates from tundra nesting areas to winter in eastern Asia and Africa.



**226. SPARROW****F,T,W**

**Traits:** Small birds with stout, cone-shaped bills; majority are brown on the back and light underneath; many have streaks on the breast.

**Habitat:** Tall shrub thickets, forest edges, sedge lands, open tundra

**Foods:** Seeds of ground-cover plants and tall shrubs; insects during nesting season

**Eaten by:** Sharp-shinned hawks, falcons, small owls, shrikes; weasels, squirrel, ravens prey on eggs and young.

**Do You Know?** Sparrows often use hair from moose or feathers from other birds to line their nests.

**223. WATER PIPIT****F,T,W**

**Traits:** Small, ground-dwelling birds with slender bills and tails with white outer feathers

**Habitat:** Tundra, tidal flats, fields, alpine meadows, lakeshores, rivers, streams

**Foods:** Insects, small invertebrate animals

**Eaten by:** Foxes, weasels, jaegers, short-eared owls, falcons

**Do You Know?** In courtship flight, the male pipit flies 50-150 feet (15-46 m) straight up in the air while singing.

**227. SNOW BUNTING****T**

**Traits:** Small white bird with long black and white wings

**Habitat:** Alpine and lowland tundra throughout Alaska in summer; some remain along the coast throughout winter, but most migrate to central plains of the Lower 48.

**Foods:** Seeds and buds of tundra plants, amphipods, crane flies, spiders, beetles

**Eaten by:** Foxes, weasels, jaegers, short-eared owls, falcons, small hawks

**Do You Know?** Snow buntings avoid severe cold by burrowing into the snow. They often nest in buildings and boxes abandoned by humans.

**224. BOHEMIAN WAXWING****F,W**

**Traits:** Medium-sized light brown bird with crest on head; short bill; bright yellow and orange markings

**Habitat:** Nests in open black spruce forests and muskegs; feeds in all types of forests.

**Foods:** Blueberries, cranberries, and other berries; also flying insects, (flies, butterflies, dragonflies, true bugs, beetles, and others)

**Eaten by:** Hawks, falcons, small owls

**Do You Know?** The red, waxlike spots on the wings of the adult give this bird its name.

**228. LAPLAND LONGSPUR****T**

**Traits:** Small bird; breeding male has black crown, face, and breast and chestnut hind neck. Female is nondescript, like many sparrows.

**Habitat:** Alpine and dry lowland tundra; nests in side of tussocks, small clumps of sedge, or dry knolls

**Foods:** Seeds and buds of plants, crane flies, mosquitoes, spiders

**Eaten by:** Weasels, foxes, jaegers, gulls, short-eared owls, falcons, small hawks

**Do You Know?** Longspurs often line their nests with caribou hair or ptarmigan feathers.

**225. NORTHERN SHRIKE****F,T,W**

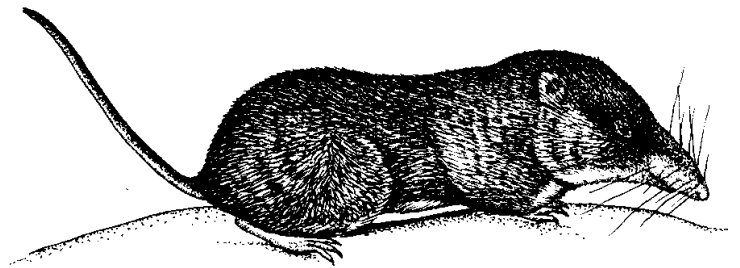
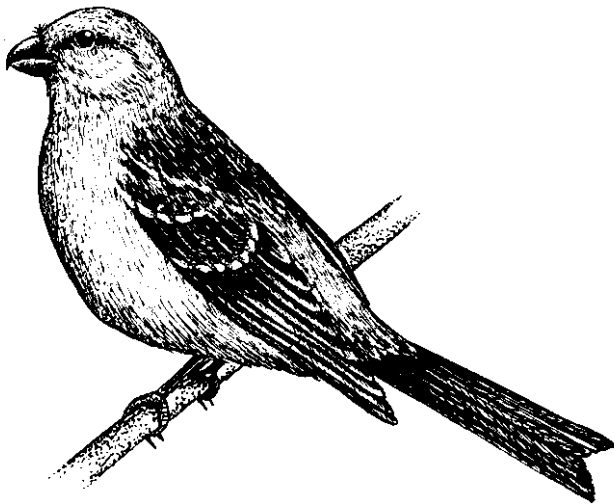
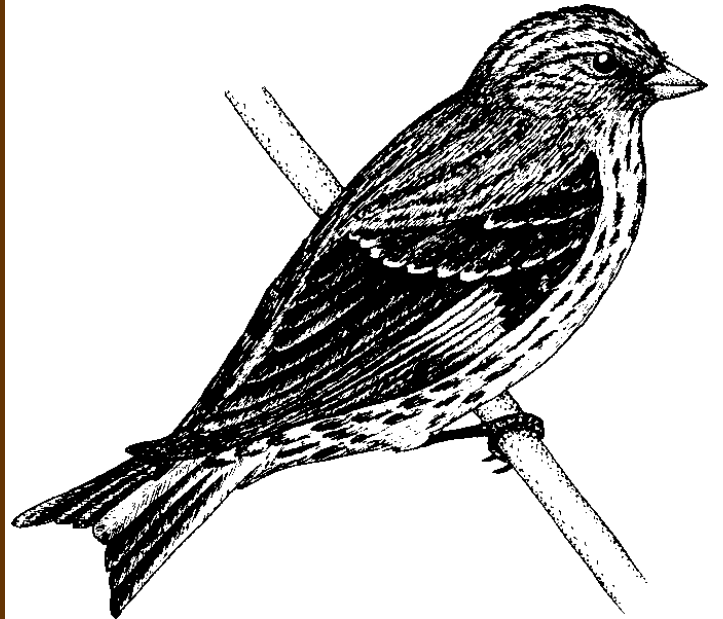
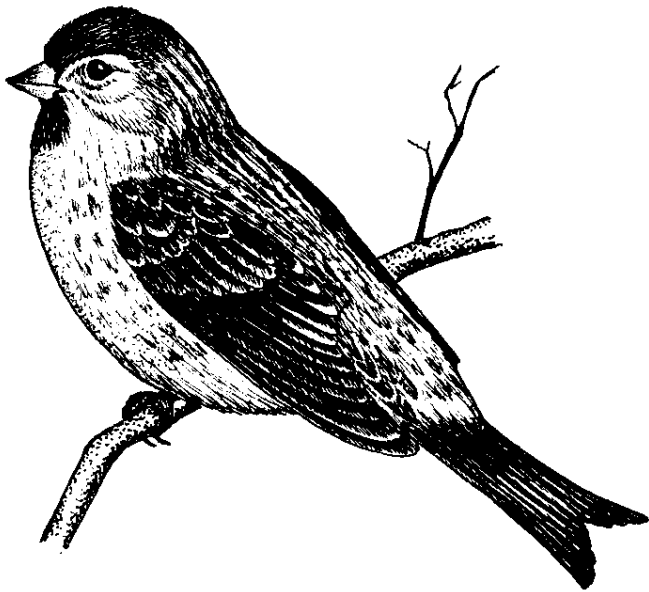
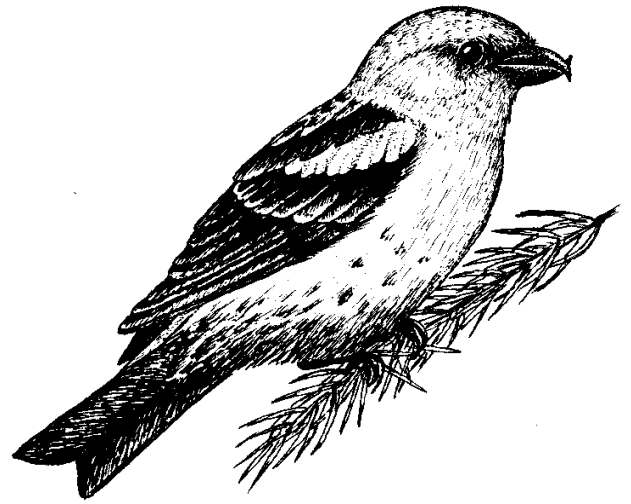
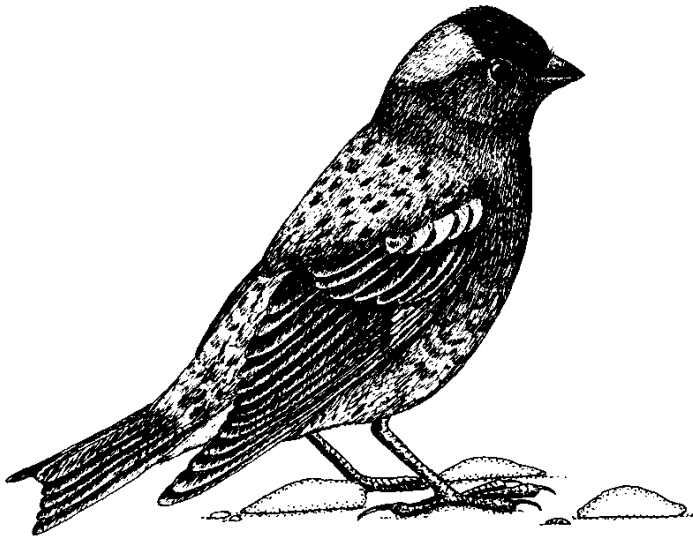
**Traits:** Medium-sized, gray bird with black mask; sharply hooked bill; long talons; predator

**Habitat:** Tall shrub thickets, forest openings and edges

**Foods:** Small birds and mammals, large insects

**Eaten by:** Merlins, sharp-shinned hawks

**Do You Know?** The shrike hangs its prey in the forks of branches. It can kill and store more prey than can be eaten at one time, earning it the name "butcher bird."



### 232. CROSSBILL

F

**Traits:** Medium-sized bird with slightly forked tail; bill crosses at tip; males are reddish, females are yellowish.

**Habitat:** Mature and old-growth conifer forests

**Foods:** Seeds of conifers, alders, birches, willows, poplars; also insects

**Eaten by:** Sharp-shinned hawks, boreal owls, saw-whet owls; squirrels may eat eggs and young.

**Do You Know?** Crossbills may nest almost any time of the year. They are nomadic.

### 229. GRAY-CROWNED ROSY FINCH

T

**Traits:** Small bird with pinkish-brown on wings and lower belly

**Habitat:** Alpine tundra

**Foods:** Seeds of alpine tundra plants, insects

**Eaten by:** Weasels, foxes, jaegers, short-eared owls, falcons

**Do You Know?** During nesting season, both sexes develop a pair of sacs in their upper throats, which are capable of carrying food.

### 233. PINE SISKIN

F

**Traits:** Small bird with stout, cone-shaped bill; yellow on the wings and at base of tail

**Habitat:** Mature conifer forests, old-growth coastal forests; nests on a branch of a conifer.

**Foods:** Seeds of conifers, alder, birch; also moth and butterfly larvae, aphids

**Eaten by:** Sharp-shinned hawks, boreal owls; squirrels take eggs.

**Do You Know?** The siskin's winter range is highly erratic; large flocks appear here one year, there the next.

### 230. COMMON REDPOLL

F,T

**Traits:** Small bird with red spot on forehead, stout body, cone-shaped bill

**Habitat:** Tall shrub thickets, mixed broadleaf-conifer forests; nests in alder or willow shrubs.

**Foods:** Seeds of birch, willow, aspen, alder and other plants; also insects in summer

**Eaten by:** Merlins, boreal and short-eared owls, sharp-shinned hawks, shrikes; weasels and squirrels may prey on eggs.

**Do You Know?** Redpolls store food in throat pouches on the back of their necks to digest during long winter nights. They are nomadic, moving from place to place.

### 234. SHREW

F,T,W

**Traits:** Very small mammals with a long, pointed nose; short legs; soft, dense fur; Alaska species have a long tail.

**Habitat:** Moist areas in forests, shrublands, wetlands, tundra

**Foods:** Springtails, beetles, fly larvae, centipedes, mites, worms, spiders, round worms, eggs and young of small ground nesting birds, young voles, carrion

**Eaten by:** Weasels, owls, kestrels, jaegers, shrikes

**Do You Know?** The shrews metabolism is so rapid that an individual shrew may eat its own weight in meat every three hours!

### 231. PINE GROSBEEK

F

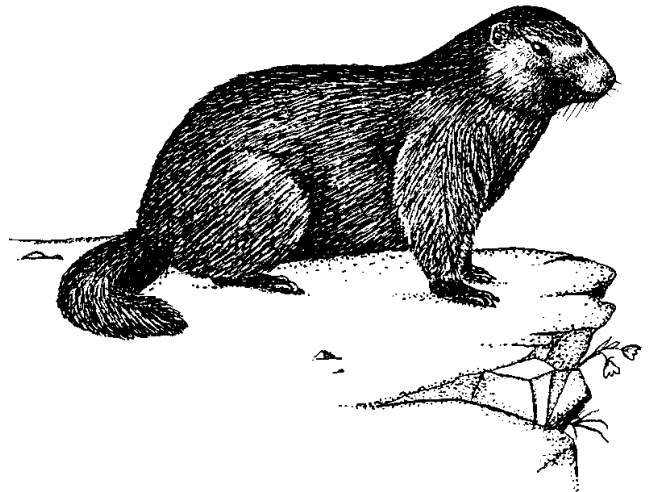
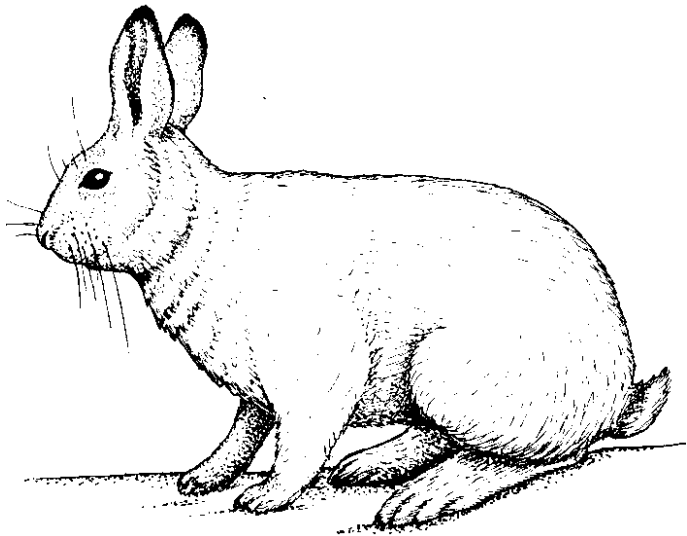
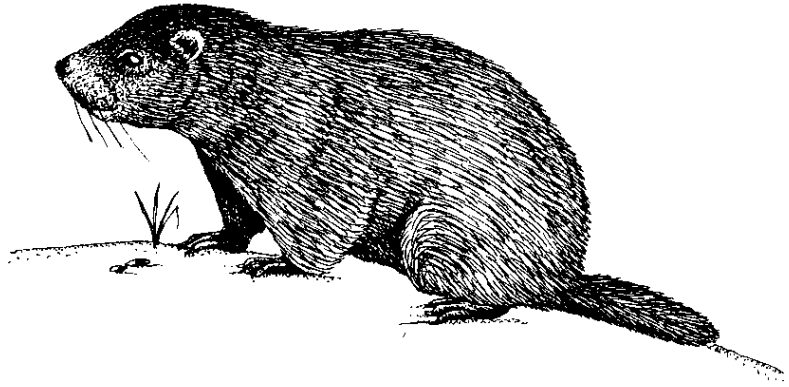
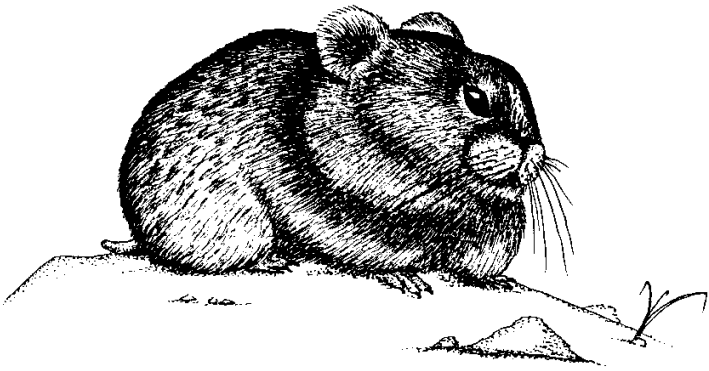
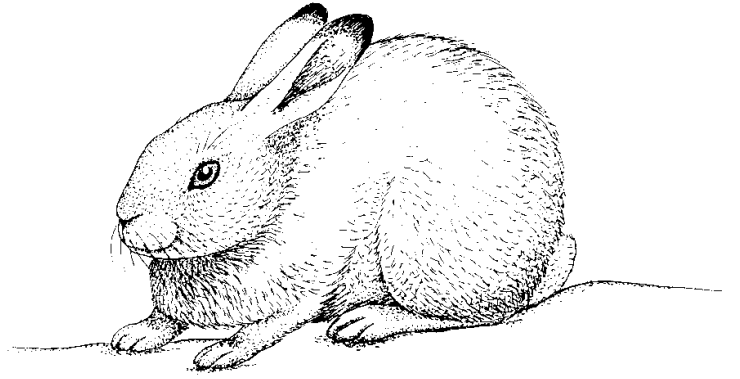
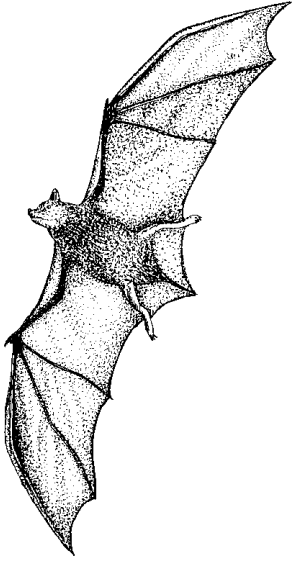
**Traits:** Medium-sized bird with a stout, cone-shaped bill; males are red; females are gray with gold markings.

**Habitat:** Young to old conifer and mixed forests; nests in conifer trees.

**Foods:** Buds, seeds, and berries of trees and shrubs; also insects

**Eaten by:** Sharp-shinned hawks, merlins, goshawks

**Do You Know?** The male pine grosbeak, like the redpoll, gets new feathers only once a year, after breeding.



### 238. TUNDRA HARE

T

**Traits:** Small mammal with dense, white winter fur

**Habitat:** Windswept rocky slopes and dry lowland tundra of western and northern Alaska

**Foods:** Willow shoots; leaves, flowers, and shoots of other tundra plants

**Eaten by:** Wolves, snowy owls, golden eagles

**Do You Know?** Newborn hares are covered with fur at birth (thus their name) and have their eyes open. True rabbits give birth to naked young whose eyes are closed.

### 235. LITTLE BROWN BAT

F,W

**Traits:** Mammal with forelegs modified to form membranous wings; keen eyesight; active at night

**Habitat:** Forested areas with a lake nearby; roost in caves, tree cavities, or buildings

**Foods:** Mosquitoes, moths, mayflies, caddisflies; usually feeds over water and in forest openings

**Eaten by:** Owls, squirrels

**Do You Know?** Bats capture flying insects by using echolocation. A single bat may eat as many as 1,000 mosquitoes in one evening.

### 239. WOODCHUCK

F

**Traits:** Small, ground-dwelling mammal with long front teeth for gnawing; short legs; long bushy tail; hibernates in winter.

**Habitat:** Forest edges in central Alaska

**Foods:** Green vegetation in spring and summer

**Eaten by:** Lynx, coyotes, wolves, red-tailed hawk

**Do You Know?** When alarmed, the woodchuck whistles sharply to warn its family.

### 236. COLLARED PIKA

T

**Traits:** Very small mammal with a stocky body; short legs; sharp, curved claws

**Habitat:** Rocky slopes of alpine tundra in eastern and central Alaska

**Foods:** Stems and leaves of grasses, sedges, and other alpine tundra plants

**Eaten by:** Foxes, weasels, rough-legged hawks, golden eagles, snowy owls

**Do You Know?** Pikas do not hibernate. Their winter survival depends on the amount of stored plant material they have gathered and dried.

### 240. MARMOT

T

**Traits:** Heavy-bodied mammals with gray or yellow fur and dark feet

**Habitat:** Well-drained or rocky slopes of alpine tundra throughout Alaska; the Alaska marmot occurs only in the Brooks Range. The hoary marmot occurs elsewhere in the state.

**Foods:** Grasses, sedges, herbs

**Eaten by:** Golden eagles, brown bears, wolves

**Do You Know?** Alaska marmots hibernate in communal dens, thus reducing heat loss by each individual marmot.

### 237. SNOWSHOE HARE

F

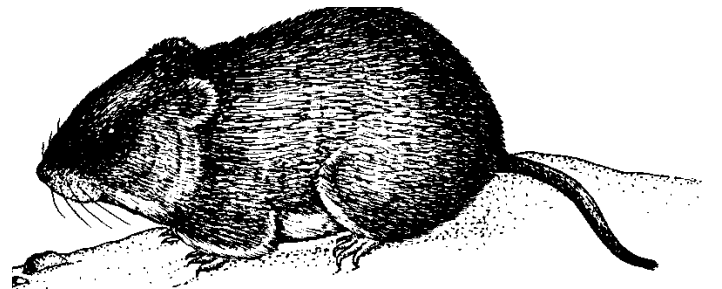
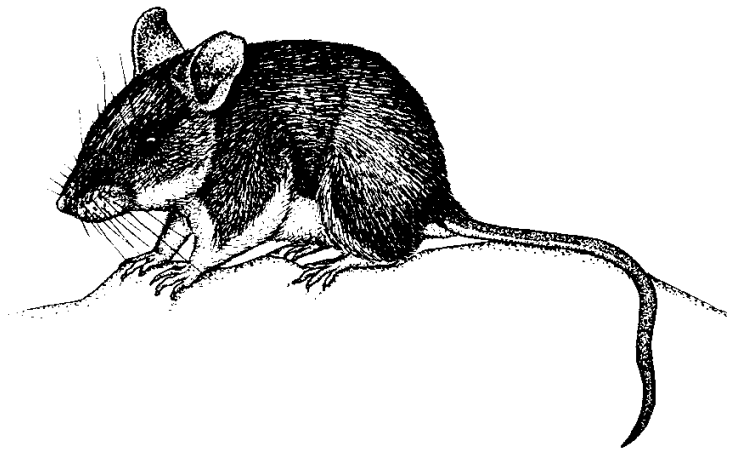
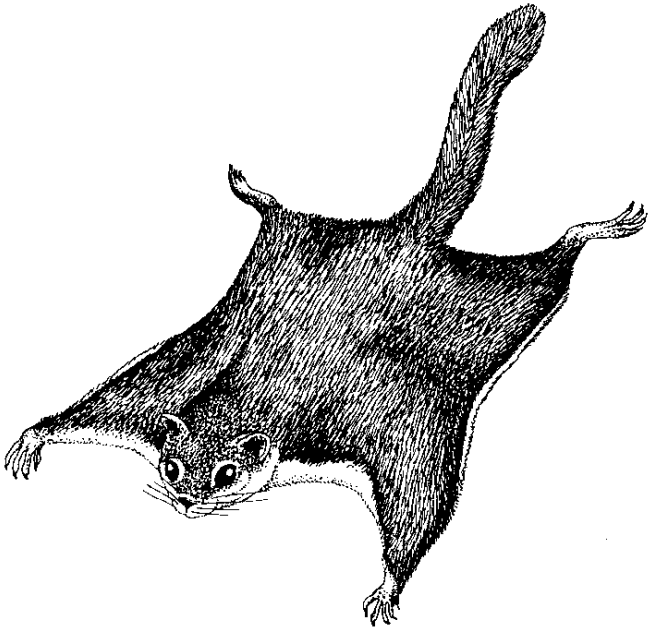
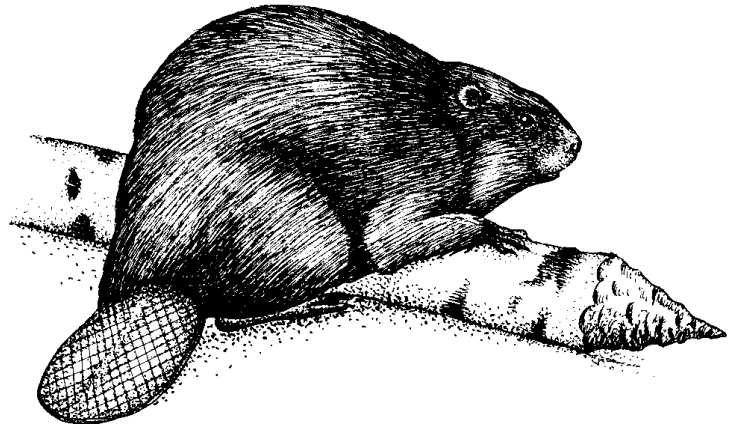
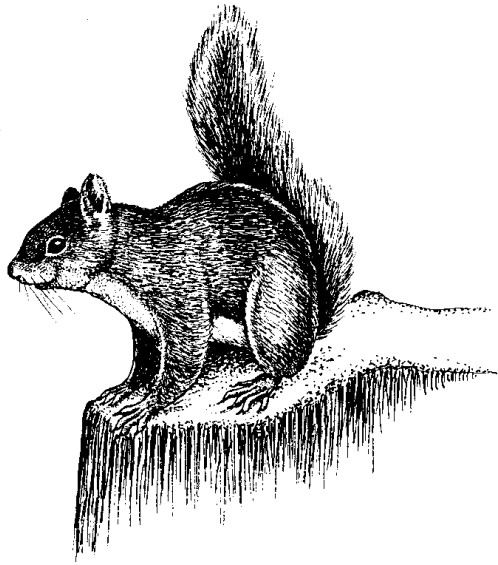
**Traits:** Small mammal with long front teeth for clipping twigs; large, long ears; short tail; long hind legs, and large hind feet; changes to white in winter.

**Habitat:** Forest mosaic that includes early successional stages where branches of willows, birch, and aspen are at heights it can reach

**Foods:** Buds and twigs of birch, willows, and aspen

**Eaten by:** Lynx, goshawks, great horned owls, red fox, coyote

**Do You Know?** Hares depend on microscopic organisms that live in their intestines to produce important vitamins.



**244. BEAVER****F,T,W**

**Traits:** Medium-sized mammal with long incisors; webbed feet; and a long, flat tail

**Habitat:** Slow-moving streams or lakes near willow, aspen, or other deciduous trees and shrubs

**Foods:** The cambium (inner bark) of willow, aspen, balsam poplar, and cottonwood trees; also shrubs; aquatic plants

**Eaten by:** Wolves, lynx, wolverines, bears, humans

**Do You Know?** Beavers change their environment to suit their needs by constructing large dams and by building lodges. Humans are the only animals that make more extensive changes in their environment.

**241. RED SQUIRREL****F**

**Traits:** Small mammal with long front teeth, short legs, large bushy tail; red-brown on back, whitish underneath

**Habitat:** Conifer forests

**Foods:** Seeds of spruce and other conifers, berries, mushrooms, some bird eggs and young

**Eaten by:** Marten, goshawks, great horned owls

**Do You Know?** When carrying and catching its food, this squirrel helps scatter seeds of spruce and berry-producing plants.

**245. DEER MOUSE****F,T**

**Traits:** Small mammal with long front teeth for gnawing, a long tail that is brown on top and white underneath, large eyes; this food-storing mammal is primarily nocturnal.

**Habitat:** Dry forest, tundra, grasslands

**Foods:** Seeds, nuts, insects, berries, mushrooms, fresh green vegetation

**Eaten by:** Foxes, weasels, marten, owls and other birds of prey

**Do You Know?** While eating and caching their foods, deer mice scatter the seeds of some plants and the spores of mycorrhizal fungi.

**242. NORTHERN FLYING SQUIRREL****F**

**Traits:** Small mammal with long front incisors; long bushy tail; short legs connected by a folded layer of loose skin used for gliding between trees

**Habitat:** Old forests with den sites in tree cavities and small forest openings

**Foods:** Mushrooms, truffles, other fungi; lichens, berries, green vegetation, seeds, buds, insects, small mammals and birds (live or dead).

**Eaten by:** Owls, goshawks, marten

**Do You Know?** Unlike most squirrels, flying squirrels are active only at night.

**246. VOLE****F,T,W**

**Traits:** Small, mouselike mammals with rounded noses, short tails and legs, and long front teeth (incisors) for gnawing

**Habitat:** Forests, shrublands, wetlands, tundra

**Foods:** Fresh green vegetation, seeds, roots, berries, mushrooms and other fungi

**Eaten by:** Coyotes, wolves, foxes, marten, weasels, hawks, owls, jaegers, sandhill cranes, ravens, gulls, and other predatory birds

**Do You Know?** The singing vole makes a high-pitched trill when danger threatens the colony.

**243. ARCTIC GROUND SQUIRREL****T**

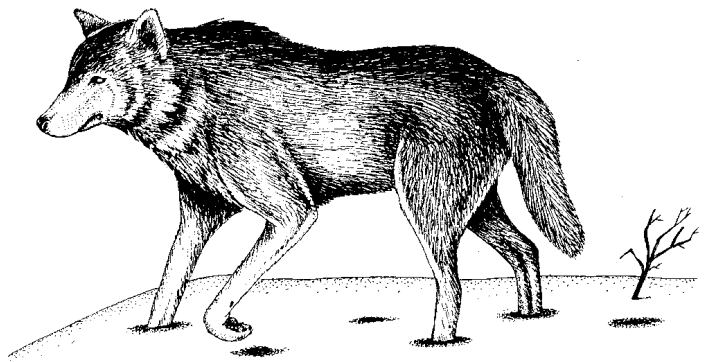
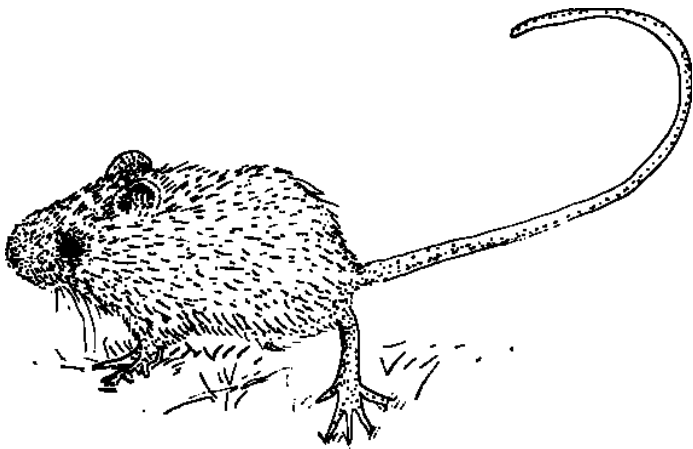
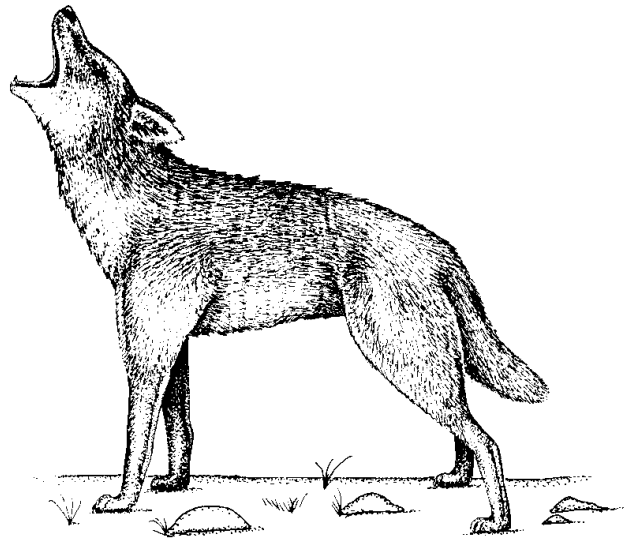
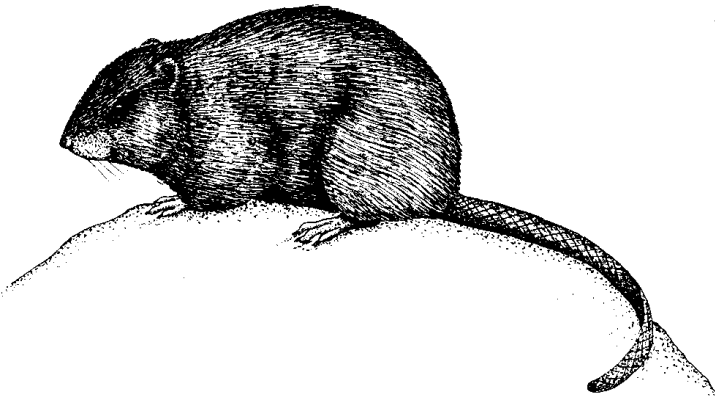
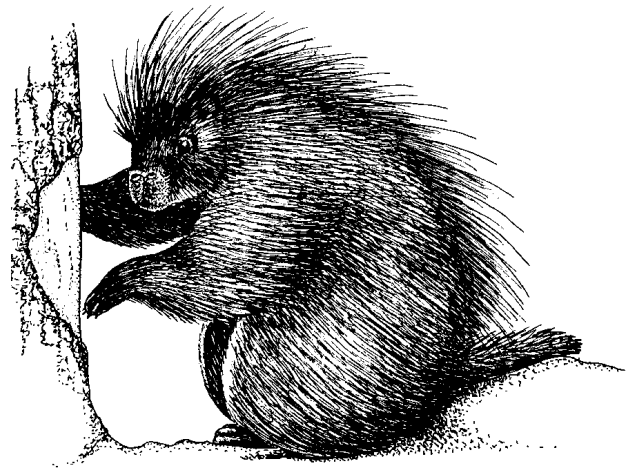
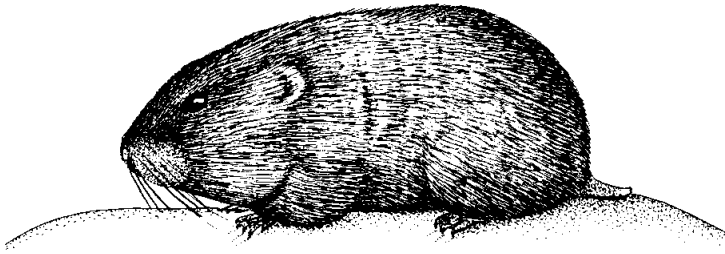
**Traits:** Large, reddish ground squirrel flecked with white; has a very small tail

**Habitat:** Well-drained soil of lowland and alpine tundra

**Foods:** Shoots and leaves of tundra plants, berries, insect larvae, bird eggs, carrion

**Eaten by:** Foxes, wolves, wolverines, brown bears, golden eagles, rough-legged hawks, snowy owls

**Do You Know?** This mammal hibernates for seven months each year.



**250. PORCUPINE****F**

**Traits:** Mammal with large front teeth for gnawing, short legs; back and tail covered with quills

**Habitat:** Conifer forests that include large hollow trees or small caves under rocks or logs for denning

**Foods:** Green vegetation in spring and summer, the inner bark (cambium) of spruce and birch trees in winter

**Eaten by:** Lynx, coyotes, wolves, wolverine, some bears

**Do You Know?** The wounds this animal inflicts on tree bark allow various microscopic parasites to enter trees.

**247. LEMMING****T,W**

**Traits:** Small mouselike mammal with a thick neck and very short tail; two gnawing teeth (incisors) on both upper and lower jaws

**Habitat:** Alpine and lowland tundra, muskegs

**Foods:** Shoots and leaves of grasses and sedges; bark, twigs, and buds of willow and dwarf birch; some insects, berries, fungi

**Eaten by:** Owls, jaegers, gulls, rough-legged hawks, arctic foxes, weasels, wolves

**Do You Know?** Collared lemmings turn white in winter and grow shovel-like claws for digging through ice and snow.

**251. COYOTE****F,T,W**

**Traits:** Doglike mammal with large, sharply pointed ears; long bushy tail; long legs; gray to brown in color

**Habitat:** Open areas, including early successional stages of boreal forest, wetlands, tundra

**Foods:** Hares, voles, lemmings, carrion (dead animals); some marmots, ground squirrels, muskrats, birds, fish, insects

**Eaten by:** Wolves, great horned owls, golden eagles, bears

**Do You Know?** Coyotes scavenge scraps from wolf and bear kills of large prey.

**248. MUSKRAT****T,W**

**Traits:** Brownish rodent; long, naked tail, flattened side to side with short hairs; hind feet webbed; two gnawing teeth (incisors) on both upper and lower jaws

**Habitat:** Ponds, lakes, marshes, estuaries

**Foods:** Aquatic plants (bulrushes, water lilies, pondweeds), some mussels, frogs, fish

**Eaten by:** Hawks, owls, foxes, coyotes, mink

**Do You Know?** During winter, muskrats spend much of their time under the ice. They maintain holes through the ice, called "pushups," for breathing and as feeding sites.

**252. WOLF****F,T,W**

**Traits:** Large, doglike mammal with sharp teeth; long bushy tail; long legs; lives and hunts in packs

**Habitat:** Forests, tundra, and wetlands wherever large herbivores (moose, deer, caribou, goats, or sheep) are available for food

**Foods:** Moose, deer, caribou, muskoxen, goats, and Dall sheep adults and young; also marmots, beaver, voles, other small mammals

**Eaten by:** Other wolves occasionally

**Do You Know?** Social hunting behavior (hunting in packs) allows wolves to prey on large animals such as moose, caribou, and muskoxen.

**249. MEADOW JUMPING MOUSE****F**

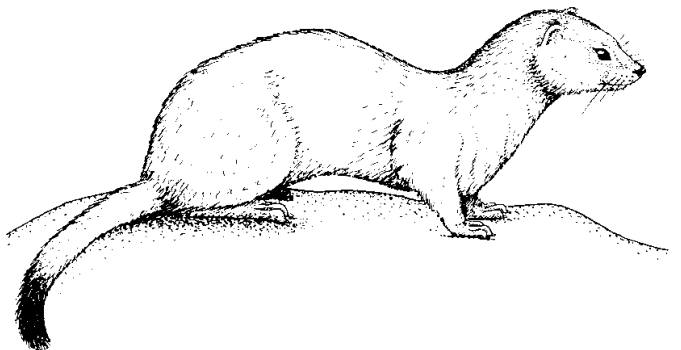
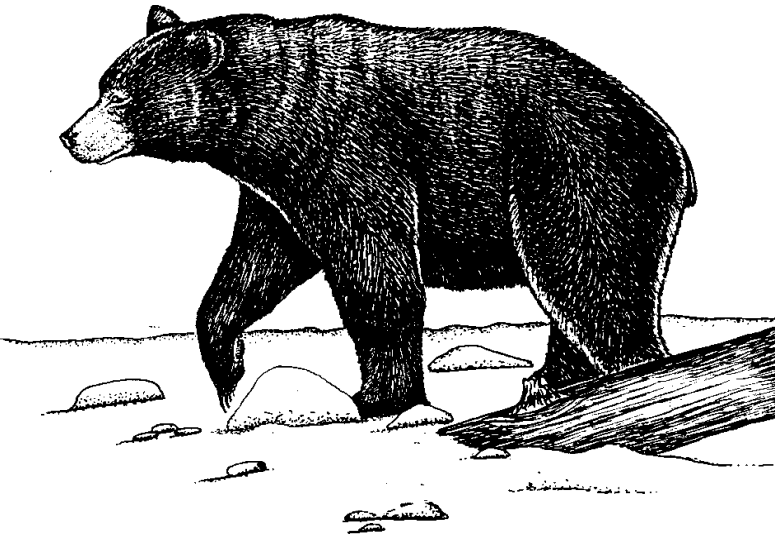
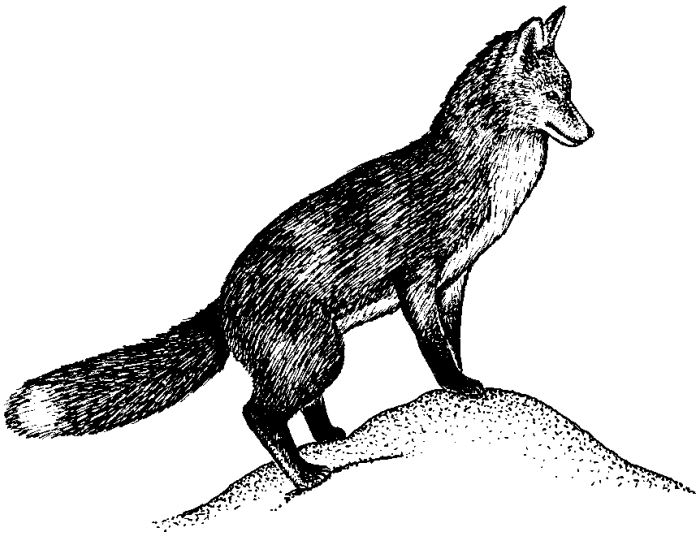
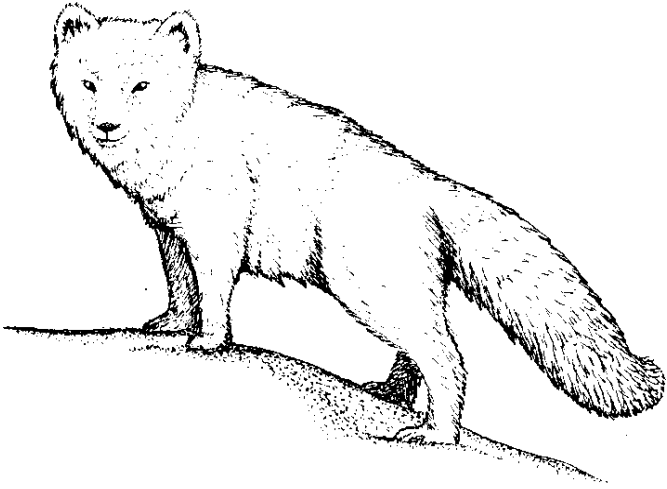
**Traits:** Small mammal with very long tail, large hind feet, small ears, and large front teeth for gnawing; hibernates during the winter and is primarily nocturnal.

**Habitat:** Forest edges and damp meadows; den sites beneath brush, logs, or stumps; well-drained sites to dig its deep winter burrow

**Foods:** Seeds, insects, fruits

**Eaten by:** Weasels, marten, owls, kestrels

**Do You Know?** The hind feet of jumping mice can propel them into six-foot (2-m) jumps.



**256. BROWN BEAR****F,T,W**

**Traits:** Heavysset mammal with short tail; long snout; large hump on shoulders; long claws on forefeet; brown fur; walks on heels rather than on toes.

**Habitat:** Tundra, forests

**Foods:** In spring, over-wintered berries, roots, fresh grasses, herbs; summer and fall berries; also small mammals, caribou, moose, salmon, carrion (dead animals)

**Eaten by:** Other brown bears, humans

**Do You Know?** Brown bears survive winter by remaining dormant in underground dens. They do not eat, drink, or defecate for the five to six months spent in the den.

**253. ARCTIC FOX****T,W**

**Traits:** Mammal with yellow-brown fur in summer, white in winter; also blue-gray variety that stays dark; short legs, ears, and muzzle

**Habitat:** Wetlands, dry tundra; pack ice in winter

**Foods:** Lemmings, voles, hares, birds and their eggs, fish, carrion from kills of larger animals

**Eaten by:** Occasionally taken by wolves, wolverines, or bears; snowy owls may take young foxes.

**Do You Know?** Arctic foxes were introduced to the Aleutian Islands by people for fur harvest and have caused declines in the populations of several seabirds and the Aleutian Canada Goose.

**257. MARTEN****F**

**Traits:** Small, furbearing mammal with sharp teeth, short legs, yellow to brown fur, long tail

**Habitat:** Conifer forests with high population of voles; mature conifer trees for cover

**Foods:** Meadow and red-backed voles, some berries, small birds, bird eggs, squirrels, and carrion (dead animals)

**Eaten by:** Coyotes, red fox, lynx, eagles, great horned owls

**Do You Know?** Martens use squirrel middens (piles of spruce cone scraps left by squirrels) for winter den sites.

**254. RED FOX****F,T,W**

**Traits:** Doglike mammal with long tail; sharp teeth; red to black fur; long legs

**Habitat:** Early successional stages of boreal forest, tundra, or wetlands where prey is abundant

**Foods:** Voles, lemmings, some muskrats, squirrels, hares, birds, eggs, insects, berries, carrion (dead animals)

**Eaten by:** Wolves, coyotes, lynx, wolverine; rarely by bears, golden eagles

**Do You Know?** Foxes store excess food when hunting is good.

**258. ERMINE (SHORT-TAILED WEASEL) F,T,W**

**Traits:** Small, furbearing mammal with sharp teeth; turns white in winter, except the tip of its long tail.

**Habitat:** Open areas (early successional stages of boreal forest, wetlands, tundra) with water for drinking

**Foods:** Voles, shrews, jumping mice, deer mice, other small mammals; some birds, insects, plants

**Eaten by:** Great horned owls, hawks, red foxes, goshawks

**Do You Know?** Ermines are chiefly nocturnal, but they also hunt during the day.

**255. BLACK BEAR****F**

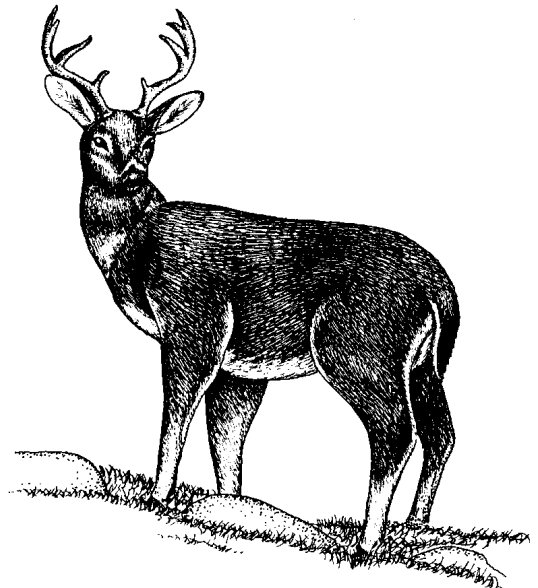
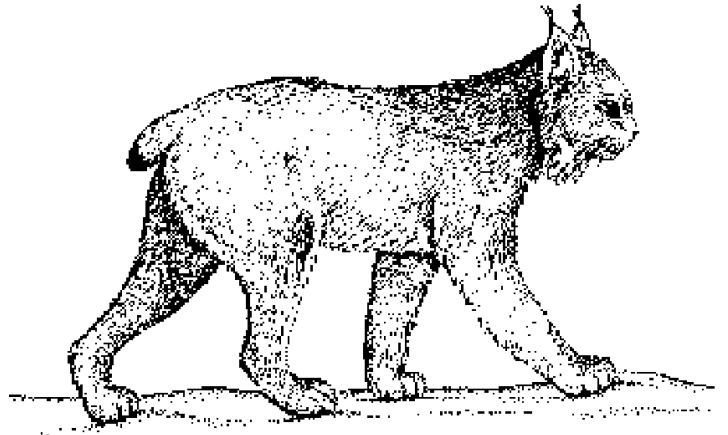
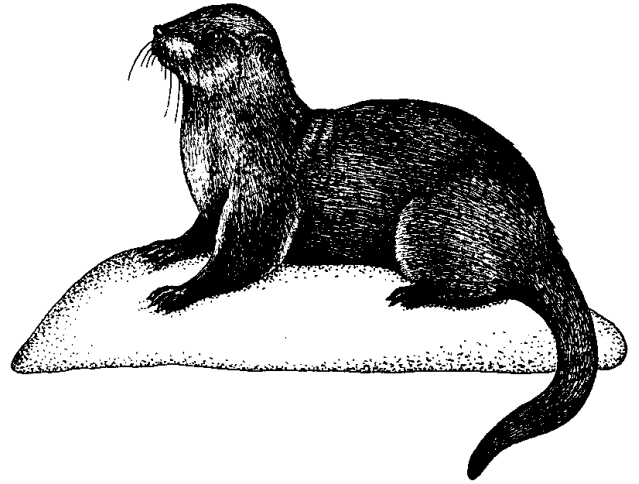
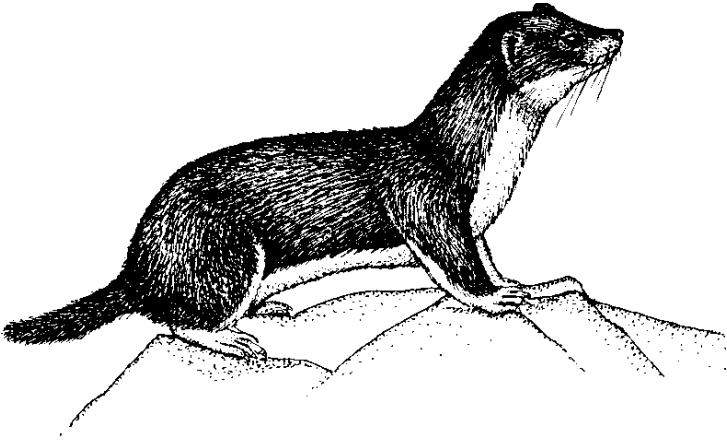
**Traits:** Large mammal with brown, black, or blue-gray fur; brown muzzle; short claws; sharp teeth

**Habitat:** Forested areas throughout Alaska

**Foods:** Varies seasonally; fresh green vegetation in spring, salmon and berries in fall; some moose calves and deer fawns; also carrion (dead animals)

**Eaten by:** Brown bears, black bears, humans

**Do You Know?** Black bears sometimes hibernate in a tree hollow created by fungi and bacteria that decayed the wood.



**262. RIVER OTTER****T,W**

**Traits:** Furbearing mammal with large canine teeth; long, slender body; short legs; webbed feet and a long tail covered with dense fur

**Habitat:** Streams, rivers, large lakes, sea coasts

**Foods:** Fish (rockfish, blackfish, sculpins, suckers) frogs, aquatic invertebrates, some birds and small mammals

**Eaten by:** Occasionally lynx, coyotes, wolves

**Do You Know?** River otters can dive 60 feet (18.3 m) and stay underwater for as long as four minutes.

**259. LEAST WEASEL****F,T**

**Traits:** Small furbearing mammal with a long tail; turns white in winter

**Habitat:** Early successional stages of boreal forest, tundra where food is abundant

**Foods:** Voles, shrews, lemmings, jumping mice, deer mice, other small mammals; some small birds, insects, plants

**Eaten by:** Great horned owls, hawks, red foxes, goshawks, ermine

**Do You Know?** Speed, ferocity, and its ability to fit into tight spaces help the weasel avoid larger predators.

**263. LYNX****F**

**Traits:** Medium-sized mammal in the cat family; large feet, short tail, sharp teeth

**Habitat:** Mosaic of old conifer and early successional stage forests where prey is abundant

**Foods:** Snowshoe hares almost exclusively; small mammals, birds when hare populations are low

**Eaten by:** Great horned owls or wolverines may eat young.

**Do You Know?** The lynx is the only cat native to Alaska.

**260. MINK****F,T,W**

**Traits:** Mammals with large canine teeth; a long, slender body; short legs; long, round tail; dense brown fur; feet not webbed

**Habitat:** Streams, lakes, marshes, inlets, estuaries

**Foods:** Muskrats, voles, lemmings; eggs and young of ducks, geese, and shorebirds; fish, frogs, mussels, aquatic insects

**Eaten by:** Hawks, owls, lynx, foxes, coyotes, wolves

**Do You Know?** Like all other weasels, mink have an anal scent gland that produces a strong odor.

**264. SITKA BLACK-TAILED DEER****F**

**Traits:** Small, hoofed mammal with long legs; reddish brown fur; black tail; antlers on male in fall

**Habitat:** Coastal hemlock-spruce forest; old-growth forest is critical for winter survival.

**Foods:** Herbs and shrubs (bunchberry and trailing bramble); blueberry, hemlock, arboreal lichens in winter

**Eaten by:** Wolves, brown bears, humans

**Do You Know?** This deer is native to Southeast Alaska, but humans moved some to Yakutat and to Kodiak and Afognak islands.

**261. WOLVERINE****F,T**

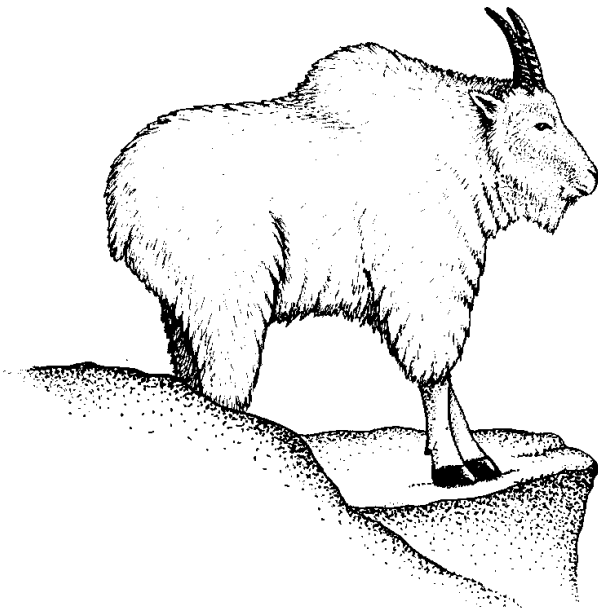
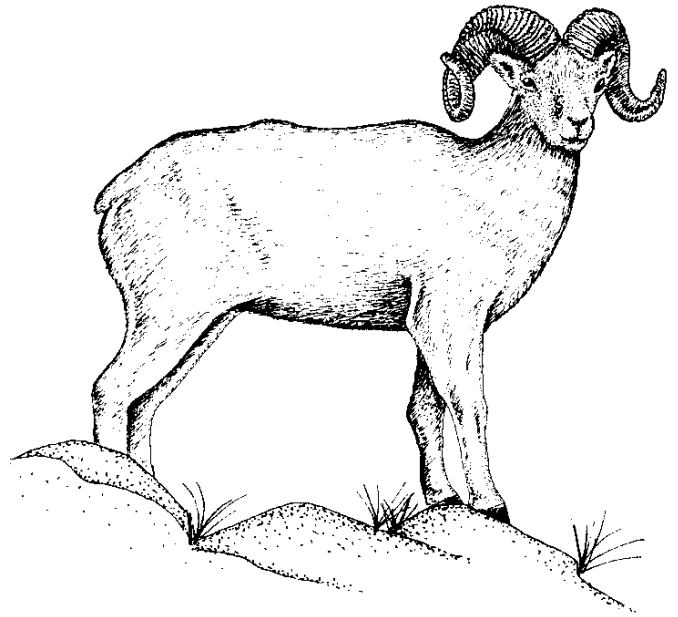
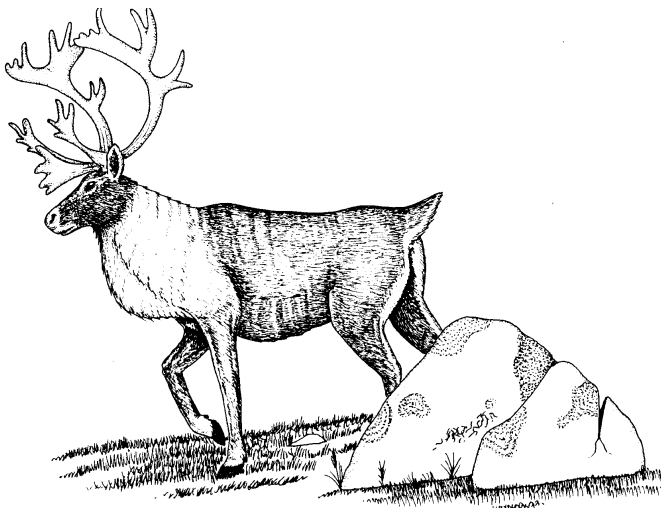
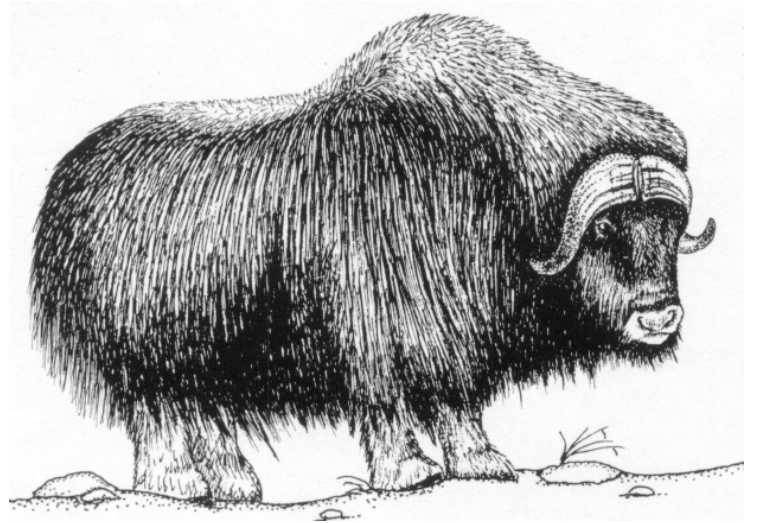
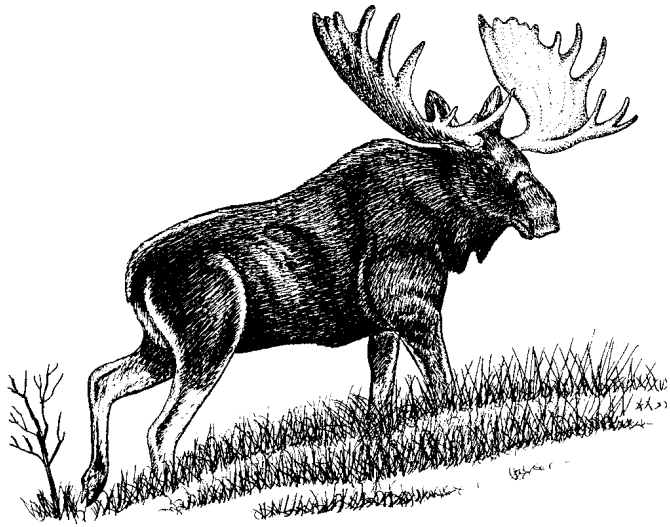
**Traits:** Furbearing mammal; brown with white stripes on sides; strong, well-developed teeth

**Habitat:** Coastal and boreal forests, tundra

**Foods:** Carrion (dead animals), marmots, voles; some bird eggs, berries, calves of moose and caribou

**Eaten by:** Occasionally killed by wolves or bears

**Do You Know?** Spinelike hairs on the pads of their feet help wolverines walk on snow and ice. Wolverines are fierce and solitary predators.



**268. MUSKOX****T**

**Traits:** Large, stocky mammal with long, dense fur; short legs and tail

**Habitat:** Lowland tundra of northern and western Alaska; prefers floodplains and river bottoms in summer; windblown, snow-free areas in winter

**Foods:** Grasses, sedges, herbs, woody plants (willows)

**Eaten by:** Wolves, brown bears, humans

**Do You Know?** The muskox is called "oomingmak" in Inupiaq, meaning "the animal with skin like a beard."

**265. MOOSE****F,W**

**Traits:** Large, hoofed mammal with long legs and long, drooping nose; large, palmate antlers on males in fall

**Habitat:** Tall shrub thickets along rivers; shelter in forests

**Foods:** Woody vegetation (willow, birch, aspen), grasses, sedges, horsetails, aquatic plants

**Eaten by:** Wolves, brown bears, humans

**Do You Know?** The moose is the largest member of the deer family in the world, and the Alaska race is the largest of all the moose.

**269. DALL SHEEP****T**

**Traits:** Mammal with dense, white fur and sharp hooves specially designed for climbing

**Habitat:** Separate summer and winter ranges of alpine tundra; cliffs for escape cover; windblown ridges where food is available during winter

**Foods:** Alpine grasses and sedges; also flowering herbs, willows, mosses

**Eaten by:** Wolves, wolverines, bears, humans; golden eagles will eat lambs.

**Do You Know?** These high-country animals are seldom found below timberline in Alaska.

**266. CARIBOU****F,T**

**Traits:** Moderately sized, hoofed mammal with short ears and tail; mane on neck; antlers large and variable with forward-projecting brow tines

**Habitat:** Lowland and alpine tundra, boreal forest; cool windblown sites or snow fields in summer to escape insects

**Foods:** Grasses, sedges, lichens, leaves of willow and birch, herbs

**Eaten by:** Wolves, bears, wolverine, humans

**Do You Know?** Caribou are the only member of the deer family in which both sexes grow antlers.

**270. HUMANS****F,T,W**

**Traits:** Large mammals that walk erect on two legs and have forelimbs with opposable thumbs

**Habitat:** Adaptable; variety of environments around the world

**Foods:** Moose, caribou, salmon, geese, many plants, domesticated animals

**Eaten by:** Wild animals kill people rarely; humans have no true predators.

**Do You Know?** The Alaska population prior to European contact was estimated at 84,750 people. In 2000, the population of Alaska was 629,932.

**267. MOUNTAIN GOAT****T**

**Traits:** Hoofed mammal with long, white hair on body and legs; short, black horns; long hair on chin

**Habitat:** Steep hillsides and cliffs of alpine tundra in Southeastern and Southcentral Alaska

**Foods:** Grass, herbs, low-growing shrubs in summer; hemlock, willow, other woody plants in winter

**Eaten by:** Wolves, coyotes, humans; golden eagles will kill kids (young goats).

**Do You Know?** Mountain goats are both grazing and browsing animals, depending on the particular habitat and season of the year.