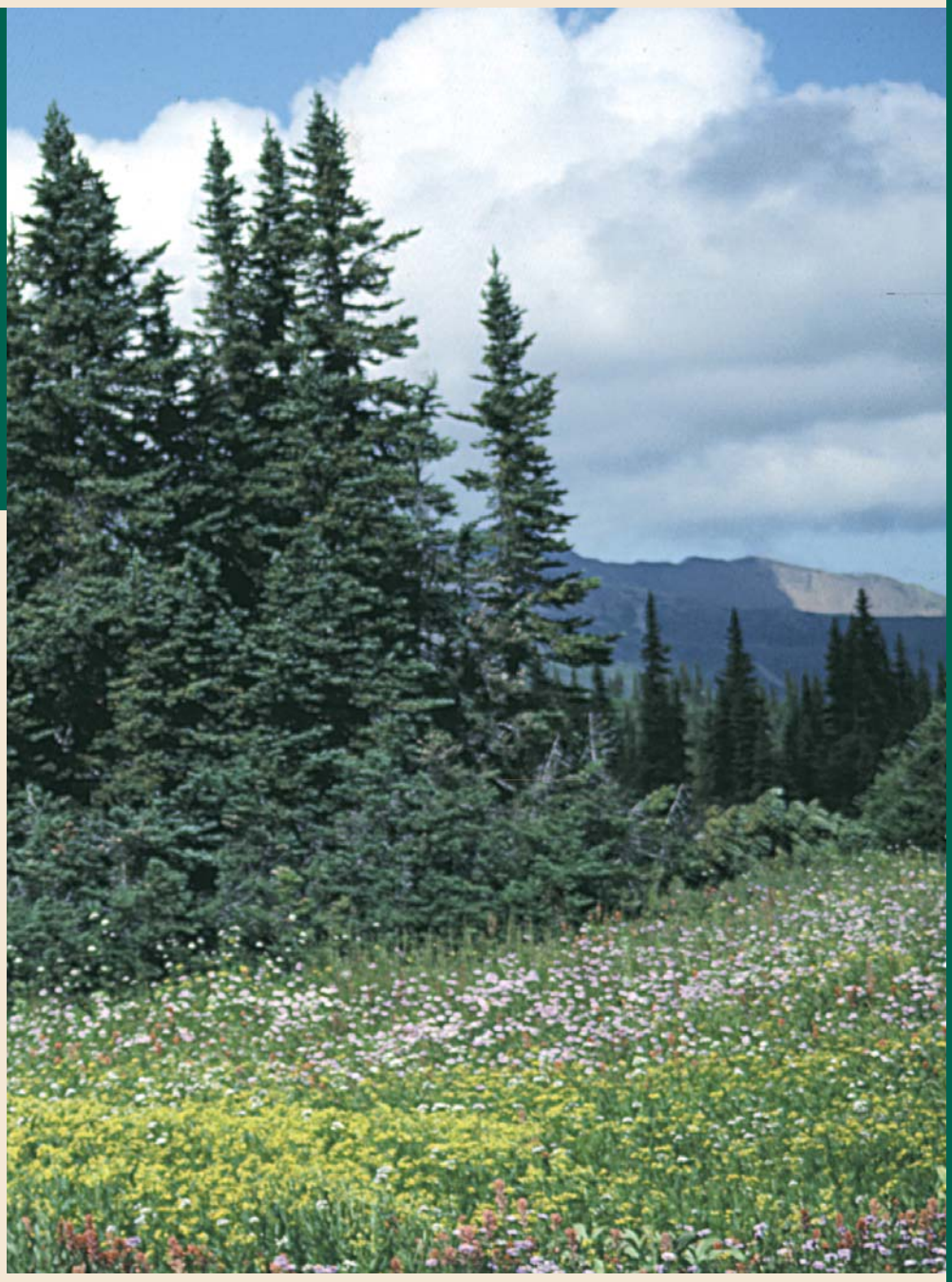
The Stewardship Series

NATURESCAPE
BRITISH COLUMBIA

Caring for Wildlife Habitat at Home



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Native Plant and Animal Booklet, Central Interior

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ABOUT NATURESCAPE BRITISH COLUMBIA

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INTRODUCTION

The Provincial Guide has given you the basic how-to information for creating wildlife habitat in your yard. The next step is to consider the type of habitat appropriate to your location in the Central Interior. What plants should you consider? And what animals can you expect to attract?

To answer these questions, let's first venture into the surroundings beyond your home. Let's explore the concept of ecosystems and the physical area of the Central Interior to take a look at where your property sits in this larger scheme of things. Then we can return to your outdoor space and begin to answer your questions.

To get a better sense of our sustaining environment, we need a different perspective – one that looks beyond the neighbourhoods and town sites. While it is still possible in British Columbia to look over mountains and plateaus and see large expanses of natural ecosystems, the valley bottoms in many areas have been radically changed. Many of us live and work in the warmer valleys, and much of the natural habitats there have given way to urban development and agriculture. What are the different species of wildlife found in these areas? How do they live in this natural world? In the past, what animals, plants, and soils would have been where your nearest town now sits?

Just as we define our neighbourhoods and communities, so too the natural world can be defined by natural communities. You can think of these divisions of the natural landscape as nature's neighbourhoods. In essence then, you have two addresses – your urban address, and your address within the natural environment of the Central Interior.

This Native Plant and Animal Booklet explains the broader natural environment within which you live, and allows you to determine the general types of wildlife habitats you might consider when planning **Naturescape** projects. It includes a listing of plants and examples of their uses by wildlife, and listings of wildlife species with notes on their natural history.

Heart-shaped sonica
T .Godin

ECOSYSTEMS AND ECOSYSTEM DIVERSITY

Ecosystem Defined

An ecosystem is a concept. The term applies to a set of living organisms and non-living elements, and their interaction with each other in both obvious and subtle ways.

You can think of an ecosystem as being any segment of the world that includes all the organisms and the environment within which they occur. The entire system must have a primary energy source, which is generally the sun. Plants use the sun's energy for their growth and, in turn, serve as food and shelter for animals. The cycle continues with the animals. Their foraging activities may, for example, play a role in pollination, seed dispersal, or opening up the plant community so that other species may become established.

The science of ecology, which studies the myriad relationships and processes in ecosystems, has only begun to scratch the surface in recognizing, describing and understanding all the processes that occur in different ecosystems. There is still much we don't know or fully understand.

Ecosystems can be defined at different scales from the very small to the very large. A decaying log in the forest, with its many plant and animal organisms and associated non-living elements such as water, forms a small ecosystem within a much larger forest ecosystem.

Just as within a neighbourhood each person has an address, so within an ecosystem each organism has an address or habitat. Differences in habitat are quite clear; grassland animals such as Columbian ground squirrels and Long-billed Curlews do not live in the same neighbourhood as subalpine forest animals such as snowshoe hares or Brown Creepers. But animals not only live in different habitats, they have different foraging and life history strategies. You could think of these as their work addresses, where you would find Snowshoe Hares and Brown Creepers doing very different things.

Since every species has its own niche, or job, the loss of a species in any ecosystem has a ripple effect on the entire system. That is one of the many reasons why biodiversity is so important. On another scale, the loss of habitat diversity leads to a lessening of species diversity and richness in our natural world.

SHARING YOUR OBSERVATIONS

As you create and nurture wildlife habitat on your property, you become one of the discoverers in the relatively young science of ecology. Your observations of relationships and processes, which happen within the wildlife habitat you provide and nurture, may be valuable to others. **Naturescape British Columbia** encourages you to record your observations. Who knows what you might discover in this on-going adventure?

Diversity of Ecosystems

Ecosystems vary from one place to another due to a myriad of factors, including climate, terrain, disturbance, soil forming processes and age. Because British Columbia shows tremendous variation in all these factors, it has an incredible diversity of ecosystems. In fact, this province is the most naturally diverse in all of Canada.

Climate

The climate in British Columbia is as diverse as its ecosystems. The combination of high mountain ranges, deep valleys and westerly winds off a large ocean produce some of the rainiest, snowiest, driest, hottest, coldest and windiest climates in Canada. Each winter the coast is inundated with the heaviest rainfalls in North America. This winter rain turns to snow as you climb the mountains, so the Coast and Columbia mountain ranges record some of the greatest snow depths in the world. Other locations in the Central Interior nestled in the lee of the Coast Mountains, receive so little precipitation they can almost be considered deserts.

Temperatures along the open coast are moderated by the massive waters of the Pacific Ocean, rarely dipping below freezing in winter and rarely exceeding 25°C in summer. Sites east of the coast ranges are cut off from the moderating influence of the ocean and annual temperatures there can fluctuate widely.

Development of Ecosystem Diversity

An ecosystem will change over time, and each organism within the system has its own life cycle. Nothing remains static in nature. Different plant species succeed others in the development and evolution of a forest, thus creating habitat for different wildlife species over time. The tremendous diversity in a tropical rain forest results not only from the warm, predictable tropical weather, but from the long life of the forest, and the myriad of climate changes and disturbances that have affected it during that development. In the Central Interior, the most diverse ecosystems are in the valley bottoms.

This is especially true in the north where long summer days produce highs above 35°C and frigid Arctic fronts bring winter temperatures down to -40°C or less.

Topography

The topography of an area – its mountains, valleys and plateaus – affects the diversity of ecosystems within that area. Species of plants and animals that favour the sheltered or leeward side of mountains may differ from those that thrive on the unsheltered or windward side. Furthermore, the slope of the terrain and angle to the sun will limit the kinds of plants that can grow and the animals associated with them. If you look at a mountain valley, you see a richness in vegetation and wildlife species. Whereas the steep, rocky, upper slopes of the mountains on either side are often sparsely vegetated and contain different and fewer animal species.

Disturbance

Disturbance and the frequency of that disturbance affects the relative evolution of an ecosystem. Natural disturbances, such as landslides, flash floods, forest fires, wind storms and tidal waves, alter or change existing ecosystems on both a local and regional level.

The more frequent the disturbance, the less likely the ecosystem will be able to evolve to the degree of complexity it could exhibit. Avalanche slopes, bright green swathes of alder in the dark green spruce-fir forests, exist because annual avalanches permanently inhibit the growth of large trees in their path.

The dry forests and grasslands of the Central Interior are shaped by fire. Natural fires used to sweep through these habitats every ten years or so, burning small shrubs and trees. The perennial bunchgrasses and large lodgepole pines and Douglas-firs survive most fires, resulting in an open, park-like habitat.
If fires are suppressed, young firs and pine survive to form a dense forest entirely different from the fire-maintained parkland.

Some types of disturbance may recur over time, but cause relatively local disturbance to a system. High winds cause trees to topple and create various-sized clearings in the forest, but they generally do not significantly alter the forest. Other types of disturbance may change the original ecosystem forever. An area of wetland, filled in with boulders and other rock debris from a landslide, is not likely to return again to a wetland ecosystem.

Disturbances are not always natural. One of the most detrimental types of disturbance is urbanization, which irrevocably alters the landscape, removes areas of natural habitat and causes barriers to the movement of plant and animal species between remaining habitats. Roughly a quarter to a third of any urbanized land surface is covered by pavement, and much of the remainder contains buildings, houses, and other structures. Logging roads and recreational off-road vehicle tracks cause further erosion of the natural habitat.

The introduction of non-native plant species such as Canada thistle, knapweed, and toadflax has damaged interior ecosystems. These plants and other non-native species aggressively out-compete native plants. Introduced wildlife such as European Starlings and House Sparrows has seriously affected native animal populations as well.

Ecoprovinces, ecoregions, and ecosections

British Columbia's 10 ecoprovinces are divided into 47 terrestrial and marine ecoregions; these are further divided into 116 local scale ecosections.

HOW ECOSYSTEMS ARE CLASSIFIED IN BRITISH COLUMBIA

Scientists have developed a number of different ecosystem classification schemes over the years. Each scheme makes use of a combination of one or more of three main factors: climate, physiography, and vegetation.

One system used by the B.C. Ministry of Environment, Lands and Parks and other agencies involved in resource and environmental management is known as the Ecoregion System. This classification is based on the interaction between climatic processes, such as seasonal rainfall pattern, and physiography or topography.

The Ecoregion System divides the landscape into ecosystems at various spatial scales. Because the **Naturescape** program is ecologically-based, it makes use of the ten ecoprovinces that make up British Columbia.

- ecoprovinces define areas with consistent climate, relief, and geological structures such as the Central Interior Ecoprovince
- ecoregions occur within ecoprovinces and cover areas with major physiographic and major climatic variation, such as the Fraser River Plateau Ecoregion.
- Ecosections occur within ecoregions and define areas with minor physiographic and climatic variation, such as the Bulkley Basin Ecosection.

Ecoprovinces, ecoregions, and ecosections each describe, albeit at different scales, areas of similar climate, physiography, vegetation and wildlife potential.

Think of the Ecoregion System as a way of determining your address in the broader, natural community of the Central Interior beyond your neighbourhood and municipality. In this case your address becomes one of the four ecoregions, or ultimately twelve ecosections, within the Central Interior Ecoprovince.

CENTRAL INTERIOR ECOPROVINCE

Bulkley Ranges Ecoregion

Bulkley Ranges Ecosection

Chilcotin Ranges Ecoregion

Central Chilcotin Ranges Ecosection
Western Chilcotin Ranges Ecosection

Fraser River Plateau Ecoregion

Bulkley Basin Ecosection
Cariboo Basin Ecosection
Cariboo Plateau Ecosection
Chilcotin Plateau Ecosection
Fraser River Basin Ecosection
Nazko Upland Ecosection
Nechako Upland Ecosection
Quesnel Lowland Ecosection
Western Chilcotin Upland Ecosection

THE CENTRAL INTERIOR ECOPROVINCE

from "An Introduction to the Ecoregions of B.C." (MOELP 1999)

Location

The Central Interior Ecoprovince lies east of the Coast Mountains between the Fraser Basin and the Thompson Plateau. Some of the mountain ranges east of the coastal mountains are also included because they are much drier and have a more" interior type" of climate. The ecoprovince consists of the Chilcotin and Cariboo Plateaus, the southern two-thirds of the Nechako Plateau, and the Bulkley, Thatsa, and Chilcotin Ranges west to the centre of the Pacific Ranges.

Climate

The area has a continental climate, typified by cold winters, warm summers, and a precipitation peak in late spring or early summer. Like most of the province south of 57°N, the Pacific air has a moderating effect on the climate. The area lies in a rain shadow leeward of the Coast Mountains. In summer, there is intense surface heating and convective showers, and during winter, there are frequent outbreaks of Arctic air.

Vegetation

Seven major vegetation types occur in the ecoprovince. Locally the vegetation varies according to changes in topography, soils, and hydrology. Grasslands generally occur along the major rivers in the southern Central Interior. Common grassland plants include big sagebrush, rabbitbrush, bluebunch wheatgrass, needle-and-thread grass, pasture sage, and sand dropseed. Shrub-grasslands integrate into a Douglas-fir climax community. At lower elevations, open Douglas-fir forests have an understory dominated by bluebunch wheatgrass. At higher elevations, the forest is closed, and lodgepole pine, with a pinegrass understory, may occur. Other important tree species include trembling aspen, paper birch, Rocky Mountain juniper, white spruce on moist sites, and cottonwoods on flood plains. In upland areas of the southern and western portions, where the climate is dry and severe, even-aged stands of lodgepole pine are dominant. White spruce may occur, however, where moisture is not limiting. Understories are sparsely vegetated with scattered ground lichens, common juniper, soopolallie, birch-leaved spirea, grouseberry, pinegrass, and kinnikinnick. In the moister northern uplands, white spruce, often with subalpine fir, is the climax dominant. Here the understory has a high diversity of species including prickly rose, high-bush cranberry, thimbleberry, creamy peavine, pinegrass, and blue wild rye. A moderately well developed moss layer is also present. To the southwest, bordering the coastal system, a montane vegetation zone occurs which is dominated by hybrid spruce with scattered subalpine fir and extensive lodgepole pine forests. There is limited subalpine vegetation, in which Engelmann spruce, subalpine fir, and whitebark pine at high elevations, are the climax dominants. Alpine tundra vegetation is restricted to the western areas, where bunchgrasses, sedges, and hardy forbs dominate areas not covered by rocks or glaciers.

Fauna

Sixty-five percent of the bird species known to occur in British Columbia, and 61% of all those that breed in the province are found in the Central Interior. The Chilcotin Plateau provides prime habitat for numerous species of waterfowl and marsh birds. This area is the world centre of breeding abundance for Barrow's Goldeneyes, Greater Yellowlegs, and Yellow-headed Blackbirds. The plateau is also one of the most important breeding areas for Long-billed Curlews and Ring-billed Gulls in the province. High breeding concentrations of Eared Grebes, Sandhill Cranes, Herring Gulls, and Black Terns also occur here. Additionally, the only breeding colony of American White Pelicans in the province is found on the Chilcotin Plateau.

Moose, mule deer, California bighorn sheep, cougars, black bears, coyotes, and wolves are the most common large mammals in the Central Interior Ecoprovince. Grizzly bears can also be found here. Small mammals found throughout the region include the western jumping mouse, muskrat, and long-tailed weasel. Big brown bats and Townsends's big-eared bats hibernate here. The most common amphibians and reptiles in the ecoprovince include the western and common garter snakes, western toad, wood frog, and spotted frog.

The ecoprovince also supports anadromous fish such as Chinook, sockeye, and steelhead salmon, white sturgeon, and Pacific lamprey. Native and introduced rainbow trout, Dolly Varden, mountain and lake whitefish, lake chub, and redside shiner are important freshwater fish that occur in the Central Interior.

ECOPROVINCE SUBDIVISIONS

By Dennis Demarchi

Ecoprovince Subdivisions - The Central Interior Ecoprovince is subdivided into three Ecoregions containing 12 Ecosections.

The Bulkley Ranges Ecoregion

is a narrow mountainous area located leeward of the rounded Kitimat Ranges. Moist air spills over into this area, but generally the descending air is dry. Arctic air invades from the northeast, bringing periods of intense cold temperatures. There is only one Ecosection in the Ecoregion.

The Bulkley Ranges Ecosection

is a rounded mountain system that lies on the leeward side of the Kitimat Ranges. Cordilleran ice once covered the entire Ecosection. Vegetation zonation varies mainly with elevation but also with the influence of moist Pacific air. Sub-boreal Spruce is found in the valleys and lower slopes. Over 60 percent of the Ecosection is dominated by the Engelmann Spruce - Subalpine Fir zone, which occurs on the middle slopes. Alpine Tundra with small glaciers occurs on the upper slopes and summits. Small stands of Coastal Western Hemlock and Interior Cedar - Hemlock forests occur on the lower slopes adjacent to the low coastal passes. Hudson Bay Mountain, which provides a backdrop to Smithers, demonstrates the environmental complexity of this Ecosection. Access is limited to resource extraction roads mainly in the Telkwa and upper Zymoetz watersheds, and to the Hudson Bay Mountain ski development.

The Chilcotin Ranges Ecoregion

is a long, narrow area of high, somewhat rounded mountains, located in the rainshadow of the Pacific Ranges. Precipitation is greatest in the northwest portion, adjacent to the low coastal passes of the Atnarko River; and least in the southeast, which is leeward of the highest portion of the Pacific Ranges. Cold Arctic air often lies against the northern perimeter, infiltrating into the north-facing valleys.

The Central Chilcotin Ranges Ecosection

is a dry, rounded mountain area located leeward of the Pacific Ranges in the southeast. The rainshadow effect is enhanced on the eastern perimeter, where the deep Fraser River trench creates usually cloudless skies. Adjacent to the Fraser River, and in the low north-facing valleys, dry Douglas-fir forests occur. At higher elevations the Montane Spruce zone, with predominantly lodgepole pine forest, occurs.
On the mid-elevation slopes and valleys, the Engelmann Spruce -Subalpine Fir zone, with extensive cold air, and shrub meadows, occurs.
The mountain summits are dominated by Alpine Tundra, which ranges from the dry grasslands on the outer mountains, through barren rock fields to extensive snowfields adjacent to the Coast Range divide. Access is limited to a few resource roads that penetrate into the larger valleys. Tsylos, Homathko River/Tatlayoko Lake and Taseko Lakes protected areas occur within this Ecosection.

Pacific tree frog
T .Godin

The Western Chilcotin Ranges Ecosection

is a moist, rugged mountain area located leeward of the north end of the Pacific Ranges. Low passes and exposure to the coastal environment via the Bella Coola and Klinaklini river valleys brings increased moisture to this portion of the Ecosection. Cold Arctic air often lies against the northern and eastern margins and low valleys, occasionally over-riding the entire area with intense cold air for short periods during the winter and early spring months. Dry Douglas-fir forests occur in the Klinaklini and Atnarko river valleys. The lodgepole pine dominated Montane Spruce zone occurs along the lower slopes of the eastern margin along the Fraser Plateau. At higher elevation the Engelmann Spruce - Subalpine Fir Zone dominates, while the Alpine Tundra Zone occurs throughout on the mountain summits. Access is limited to a portion of the Chilcotin Highway that traverses the lower Atnarko river valley. The southern portion of Tweedsmuir park occurs in the northwest portion of this Ecosection - the Atnarko and upper North Klinaklini watersheds.

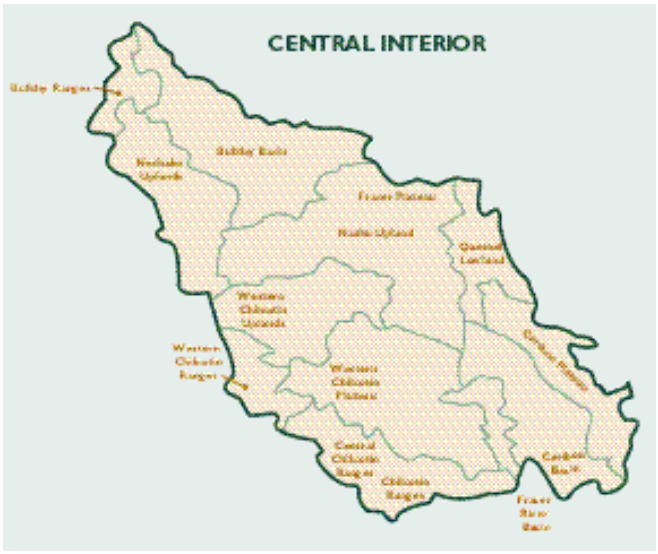
The Fraser Plateau Ecoregion

is a broad, rolling plateau that is underlain by flat or gently sloping basaltic lava flows. The Ecoregion also includes several shield volcanoes and a small portion of the leeward side of the Kitimat Ranges. The entire area was overridden by Cordilleran ice moving eastward in the north and northward in the south leveling and moving vast quantities of rock and soil. The climate is somewhat continental, with precipitation resulting from the vast areas of wetlands, lakes and streams. There is also additional moisture brought into the area by way of the low Kitimat Ranges. The entire Ecoregion is often embedded under cold Arctic air in winter and spring.

The Bulkley Basin Ecosection

is a broad lowland area, lying in the northern portion of this Ecoregion. There is a strong rainshadow effect caused from its position eastward of several ranges of the Coast Mountains. The broad valleys are filled with many lakes from the large Francois Lake, to medium sized Fraser, Tchesinkut, Tachick, Nulki and Cheslatta lakes to many more smaller ones. A large, multi-armed reservoir (Ootsa, Whitesail, Natalkuz and Tetachuck lakes) was created from damming the Nechako River. River drainage is via the Bulkley/Morice rivers northward to the Skeena River or the Nechako/Endako rivers eastward to the Fraser River. The entire area was overridden by Cordilleran ice moving out of the Coast Mountains southeastward in the north up the Bulkley Valley and eastward in the south in the general direction of the Nechako River. Except for small areas of higher relief that has Engelmann Spruce - Subalpine Fir zone, most of this Ecosection is dominated by lodgepole pine forest in the Sub-boreal Spruce Zone. In the lower valleys, trembling aspen stands occur on the southerly-facing slopes. Extensive development and farming occurs along the Yellowhead Highway corridor of the Bulkley/Endako Valley from Vanderhoof in the east to Smithers and Moricetown in the west and in the Francois Lake area.

Extensive logging has occurred throughout this Ecosection. A small protected area occurs along the southeast margin of Francois Lake, and the northern tip of Tweedsmuir Park extends into this Ecosection on the south shore of Ootsa Lake.



The Central Interior Ecoprovince

The 10 ecoprovinces of British Columbia

The Cariboo Basin Ecosection

is a rolling upland area with dry forests, interspersed with wetlands and grasslands on south-facing slopes, lying in the southeastern portion of this Ecoregion. This Ecosection lies mainly on the uplands on the east side of the Fraser River south of McLeese Lake, but it includes a portion of the Chilcotin in the Meldrum - Mackin Creek areas, as well as a short segment of the Fraser River up stream from the Chilcotin Bridge. It is one of the last places in this Ecoregion to be overridden by southward moving cold Arctic air, and it is more often affected by warm dry air from the south. The numerous lakes, streams and wetlands contribute to the summer precipitation. The area is a rolling plateau of flat-lying basaltic lava that slopes gently to the west and south. The entire area was overridden by Cordilleran ice that flowed from the mountains to the east and west to coalesce and moved northward in the north and southward in the south. Vegetation is predominantly in the Interior Douglas-fir Zone. Douglas-fir forests are common throughout with lodgepole pine forests occurring at higher elevations. Trembling aspen stands occur throughout and are most striking in the low elevation, south-facing grasslands. Numerous wetlands, small streams and lakes occur across the landscape, and the area is drained by many streams and small rivers flowing off the plateau surface into either the Fraser River or the Thompson River. The Cariboo Highway provides for the major flow of traffic through this Ecosection, but the numerous communities, small farms and ranches throughout and logging operations are connected by a series of roads and secondary highways. There are several small provincial parks and wildlife viewing sites, but no large protected areas within this Ecosection.

The Cariboo Plateau Ecosection

is a rolling upland of increased relief on the southeastern portion of this Ecoregion. There is increased moisture as a result of the eastwardly moving, moist Pacific air rising over the Columbia Mountains to the east. Temperatures are also cooler than in the adjacent Cariboo Basin Ecosection due to the increased elevation here. Cordilleran ice moved southwestward and northwestward out of the adjacent Columbia Highlands, rounding the hills and ridges and depositing vast quantities of soil and rocks. Most of the Ecosection is dominated by two forested Biogeoclimatic zones: the Sub-boreal Pine Spruce zone with lodgepole pine and trembling aspen forests occurs in the south at the lower elevations; and, the Sub-boreal Spruce zone with white spruce, subalpine fir and lodgepole pine forests occurs at higher elevations and in the northern portion of the Ecosection. Many wetlands, small and medium sized lakes occur across the Ecosection.

Access through this Ecosection is via the many secondary highways and resource development roads that service the small communities, farms and forest industry. There are no large protected areas within this Ecosection

The Chilcotin Plateau Ecosection

is a rolling upland with increased relief in the south near the Chilcotin Ranges and in the northwest near the large shield volcanoes of the west Chilcotin. This Ecosection lies in the southwest portion of the Ecoregion. A rainshadow effect is quite pronounced here as easterly moving Pacific air retains most of its moisture as it passes over this area. Winter temperatures are often very cold, with some of the lowest temperatures in the province occurring here.

Cordilleran ice moved northeasterly across this area moving vast quantities of soil and rocks. Vegetation zonation reflects the rise in elevation from the Chilcotin River in the northeast towards the mountains in the south and west.

Douglas-fir zone forests occur adjacent to the Chilcotin River, giving way to Sub-boreal Pine - Spruce zone forests with predominantly lodgepole pine. At higher elevations near the Chilcotin Ranges Montane Spruce and ultimately Engelmann Spruce - Subalpine Fir zone forests occur. There are many small streams and rivers that drain this area, and the upland is dotted with wetlands and small lakes. The Chilcotin Highway that connects Anahim Lake and Bella Coola with Williams Lake is the major access link, but there are many resource roads that provide access to the ranches and farms and for the logging industry. There are two small protected areas - at Stum Lake and along the Taseko River, and a Wildlife Management Area at Chilanko Forks - and several smaller protected areas.

The Fraser River Basin Ecosection

is a deeply incised trench that divides the lower portion of the Fraser Plateau in two. This Ecosection has a unique climate caused by exposure to the sun heating the steep grasslands with rising warm air currents forcing the clouds onto the adjacent plateaus. This freeing of the valley from clouds further enhances the sun's effects. Ponding of the Fraser River during the periods of glaciation caused a large lake to form, which was filled with deep layers of silt. Subsequent down-cutting by the Fraser River and smaller side tributaries has left a series of exposed silt cliffs the length of the Ecosection. The Biogeoclimatic Zones reflect the warm dry conditions that prevail here. The Bunchgrass Zone with big sagebrush, bluebunch wheatgrass and needle-and-thread, at the lowest elevations, give way to dry steppe that is dotted with trembling aspen copses. At the highest elevations at or near the plateau edge, the Interior Douglas-fir Zone predominates. Access is limited to the Chilcotin Highway which passes across the north portion of the Ecosection, and to a resource road that traverses the Fraser river from the Caribou to the Chilcotin Plateau.

Except for some development along the Chilcotin Highway, most land use is in the form of large ranches and several Indian Reserves. There are two significant protected areas, the Junction Sheep Range and the Churn Creek. In addition, there is a large wildlife reserve at Deer Park between the Chilcotin Highway and the mouth of Riske Creek.

The Nazko Upland Ecosection

is a rolling upland with several areas of higher relief that is situated in the north-central portion of this Ecoregion. During glaciation Cordilleran ice moved northeasterly across this area depositing vast quantities of soil and rock. Melting ice at the end of the glaciation created many long, melt-water channels that filled with gravel and coarse rock and have subsequently contained slow moving streams and wetlands. This Ecosection has increased precipitation over other Ecosections to the west and south caused by moist Pacific air masses meeting cold Arctic air from the north. In addition, surface heating of the many lakes, streams and wetlands in the summer causes sporadic showers. Vegetation zonation reflects the moister conditions with the lodgepole dominated Sub-boreal Pine - Spruce zone occurring along the West Road and Nazko river valleys in the south, and the white spruce, subalpine fir, lodgepole pine dominated forests occurring north of that. On the highest areas the Engelmann Spruce - Subalpine Fir zone occurs. Resource extraction roads provide the main access for the small ranches, Indian Reserves and small ranches. Tweedsmuir Park in the western portion of the Ecosection and Nazko Lakes are the largest protected areas. The Alexander Mackenzie Heritage Trail cuts through the area from east to west.

The Nechako Upland Ecosection

is a hilly upland consisting of several monadnocks (isolated hills) and foothills to the Kitimat Ranges lying in the northwestern portion of the Ecoregion. Glaciers moved generally eastward from the Coast Mountains eroded the hills and depositing large quantities of soil and rocks. The Ecosection is drained by the Morice River to the north, the Nechako river system to the east and the Dean River to the west. Many medium sized and small lakes and wetlands occur across the Ecosection, and the damming of the Nechako River has created a large reservoir complex - Eutsuk, Whitesail, Tahtsa lakes. There are no permanent settlements and access is limited to the forest development roads north of Tahtsa Lake. The north half of Tweedsmuir Park lies within this Ecosection, occupying more than half of it.

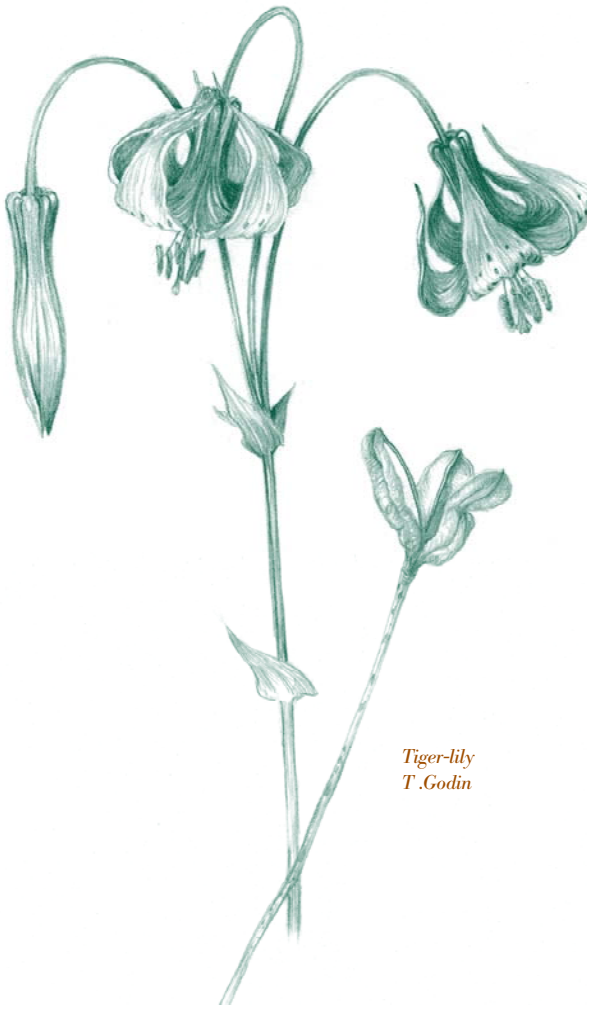
The Quesnel Lowland Ecosection

is a lowland trench lying between the Nazko Upland to the west and the Quesnel Highland to the east, in the northeastern portion of this Ecoregion. Cold Arctic air invades this area from the Fraser Basin more readily than it does other Ecosections in this Ecoregion. Precipitation is enhanced by the moist Pacific air rising over the Columbia Mountains or by the summer heating of lakes, streams and wetlands. Cordilleran glaciers flowed generally northward across this Ecosection from out of the Quesnel Highlands to the east. Blockage of the major rivers to the south, west and north created a large lake that, when it drained, left behind deep silt and gravel sediments. The area is drained by the Quesnel and Cottonwood rivers from the southeast, but is divided by the Fraser River, which flows through this Ecosection from north to south. The Sub-boreal Spruce Zone is dominant here, but the forests vary from Douglas-fir on the dry south-facing slopes of the Fraser river south of Australian to trembling aspen, lodgepole pine, white spruce and subalpine fir forests with rising elevation.

The Cariboo Highway links this area with Prince George and the Lower Mainland, while secondary highways and forest development roads provide access to the small communities, farms, ranches and forests. There are no large protected areas in this Ecosection.

The Western Chilcotin Upland Ecosection is a rounded upland with several large shield volcanoes lying in the west - central portion of this Ecoregion. Cordilleran ice moved eastward across the northern and eastern portion of this area, but moved westward onto the coast from the southern portion. The uplands were severely rounded, but large areas of outwash, gravels and sands were deposited in the wide intermountain areas. Drainage radiates away from this Ecosection: to the north and east via the West Road and Nazko rivers; to the southeast via the Chilcotin River; and to the west via the Dean River. The lodgepole pine dominated Sub-boreal Pine - Spruce Zone occurs in the wide intermountain plain of the upper Dean River. Above that and across most of the eastern flank of the Ecosection the Montane Spruce Zone of lodgepole pine and white spruce occurs. The Engelmann spruce - Subalpine Fir Zone occurs on the higher forest slopes. The Alpine Tundra Zone occurs as a gently rolling landscape on the mountain summits. The Chilcotin Highway traverses the Ecosection in the south as it passes through Anahim Lake and Nimpo Lake. Access to other reaches of the Ecosection is limited to a few resource development roads for logging and to service the many small ranches that occur on the lowland meadows. The central-west portion of Tweedsmuir Park lies on the western part of this Ecosection, while the newly created Itcha Ilgachuz protected area occurs over the large shield volcanoes in the center of the Ecosection.

TOWN/CITY	ECOSECTION
Clinton	Cariboo Basin
100 Mile House	Cariboo Basin
Williams Lake	Cariboo Basin
Horsefly	Cariboo Plateau
Alexis Creek	Chilcotin Plateau
Anahim Lake	Western Chilcotin Upland
Quesnel	Quesnel Lowland
Nazko	Nazko Upland
Vanderhoof	Bulkley Basin
Fraser Lake	Bulkley Basin
Burns Lake	Bulkley Basin
Houston	Bulkley Basin
Telkwa	Bulkley Basin
Smithers	Bulkley Basin



Tiger-lily
T .Godin

PUTTING IT ALL TOGETHER IN YOUR YARD

You now have a general introduction to ecosystems and a broad visual picture of the Central Interior Ecoprovince. After determining the location of your home within this ecoprovince, spend some time taking a closer look at natural, undisturbed areas nearby.

The type of native plant garden and wildlife habitat that will work best in your outdoor space depends on a combination of factors including the size of your property, exposure to sun and other elements, soil conditions, topography, whether you are in an urban or rural setting, and your specific location within the Central Interior Ecoprovince. Everyone's outdoor space is different.

The amount of shade or sunlight your outdoor space receives is an important factor to consider when creating your naturescape. For example, if you have a small yard that is shaded by adjacent buildings or large trees, you may want to consider creating a shady forest floor habitat, filled with shade-tolerant shrubs and groundcovers native to the forests in your area. If your property has a full south or southwest exposure, you may want to try planting a native dry grassland or meadow habitat.

You will also need to consider the basic condition of your soil when selecting plants. Having your soil analyzed in a laboratory is the best way of determining the nutritional and textural base upon which you are building your naturescape garden. If analysis is not possible, then talk to some local gardeners. They usually have a good understanding of local soil conditions, and can recommend the most suitable plants for your garden. They may also be able to recommend ways of modifying your soil conditions, if you choose to do so.

Soil texture and topography affect drainage conditions on your property, and will also need to be considered when choosing plants for your garden. For example, well-drained gravelly soils may be perfect for many grassland or alpine plants, but are inappropriate for plants adapted to moist bottomland soils.

The specific location of your home within the Central Interior Ecoprovince will also have considerable bearing on what plants you can grow and what animals you can expect to attract to your property. This is where time spent observing natural areas beyond your property will be helpful. If you can hear frogs calling near your home, you may be able to attract them to a natural or artificial pond in your yard. If you live near a natural forested area with deciduous and coniferous trees and various berry-producing shrubs, you may want to consider creating a similar forest edge habitat in your yard. By noting the types of habitat found in local natural parks and undeveloped rural and wilderness areas, you will have a better idea of how your garden can fit into the natural landscape around you. The plant tables that follow this section have been organized according to the type of habitat you may want to create or enhance. By using these habitat categories along with the information on moisture and sunlight requirements for individual species, you will be able to select plants that best suit your naturescape garden, and blend with surrounding natural areas.

Remember, the more you study natural habitats, the more you will understand their structure, patterns, and processes. Creating native plant and wildlife habitat is not a one-time project. It is an on-going process of experimentation and refinement. Your awareness and understanding of what works in your outdoor space will grow with time and experience, as will your ability to make your garden more attractive to wildlife. Some things may not work at first, but don't get discouraged. Try to determine why the project isn't succeeding. The solution may be as simple as moving a nest box to a different location, or opening up some forest edge habitat to attract wildlife. Use surrounding natural areas as your teacher – look to them if you need answers. Most importantly, be patient, and enjoy the adventure.

Common Yellowthroat
T .Godin

CREATING AN URBAN NATURESCAPE GARDEN

The size and shape of your outdoor space may limit the extent of native plant and wildlife habitat that you can develop. Apartment dwellers with balconies could focus on creating small flower gardens to attract hummingbirds and butterflies. Townhouse patio yards may offer enough space to provide a few shrubs and small trees that produce berries or seeds that are attractive to birds. If your patio area is large enough, perhaps a small wildflower meadow or shrubby section of forest could be created. Small yards have potential for some larger trees or forest edge or open forest habitat. A pond for amphibians could also be considered. Nest boxes for birds and bats (see the Provincial Guide) are a valuable addition to any backyard. You will be most successful in attracting these animals, however, if you also have trees and shrubs that provide cover and foraging habitat, and if your wildlife habitat is somewhat undisturbed by human activities.

CONNECTING YOUR RURAL LIVING SPACE WITH THE NATURAL LANDSCAPE

Living in a rural community provides you with a wonderful opportunity to create a living space that blends naturally into the surrounding wild landscape. This can be as simple as letting the clearings around your buildings develop "fuzzy" edges that lead gently into the surrounding grasslands or forests. This may take some practice, though. Many of us were raised to believe that the wilderness needed to be brought under control, and that untidy garden spaces were a sign of bad moral character.

Believe it or not, you can remain an upstanding member of society and still create a beautiful, practical living space that harmonizes with the surrounding wild landscape. You can do this merely by placing manicured areas and flower gardens closest to your home where you will have the greatest opportunity to gaze upon them.

Then as you move away from your house, allow the landscape to become increasingly more wild and natural. This way you will create a living space that is both aesthetically pleasing to you and which complements the surrounding landscape.

Designing your space -

When designing your outdoor living space, try to retain existing landscape features such as snags, brush piles and rock piles. These provide valuable habitat for many wildlife species. You can also create brush piles and rock piles by following the instructions in the Provincial Guide. Also consider retaining as many native plants as possible. If there are some plants you do not want in your garden, try moving them to another place on your property, rather than destroying them.

Plan to use water efficiently throughout your naturescape. This will probably mean planting vegetable gardens or non-native flowering plants close to your house, since this is usually where your water source is located.

Native plants will rarely need to be watered once they become established. Group these together with other plants that do not need supplemental watering. This way you will only have to water those areas of your garden that really need it. Traditional lawns need water to remain green all summer. Try to use lawns only where they are needed (e.g. sitting or play areas), keep them small, and place them close to other areas that need water. If you are living in a dry area, try xeriscape landscaping (see the Provincial Guide) using the drought-tolerant plants listed in the plant tables in this booklet.

Creating your space –

Remember to proceed slowly with your project. The creation of a naturescape is not something that should be hurried. You are well advised to spend the first year taking stock, letting things grow, and revising your plans gradually.

You may need to start your project by cleaning up some existing junk piles. Once this is done, consider allowing these areas to reestablish on their own. You may like what comes up. This will also let you see what types of native plants grow best in those spaces. If you are impatient, you can always plant these areas with species that self-propagate quickly, or seed them thickly with species that easily become established.

If you are moving existing plants to new locations, do so early in the spring, and let them grow naturally. Native shrubs and trees do not need to be pruned. You can further reduce the maintenance of your natural landscape by letting plants self-seed. You only need to "dead-head" those plants you do not want to spread. Also try to leave branches and twigs, and bark and leaf litter on the ground. It may look messy, but this type of debris can provide valuable habitat for insects, amphibians and reptiles, and small mammals and foraging habitat for some bird species. And finally, if you need to condition your soil to meet the needs of your naturescape design, you can do so by following the instructions provided in the Provincial Guide.

Creating grassland or meadow habitats –

The unique dry grasslands and wetter subalpine wildflower meadows of the Central Interior are some of the most colourful landscapes in this region. If you are fortunate enough to have grasslands or meadows near your property, you may be able to create additional habitat by allowing native plants to move in naturally to your space. The easiest way to do this is to avoid mowing or grazing corners of fields, areas between buildings, or sites along fencelines or roadways. The same methods can be used to enhance existing grassland or meadow habitats. Recently cleared areas or sites with large areas of bare soil can also be seeded with native grassland or meadow plants. Annual grasses such as oats or rye can be used effectively as ground cover in meadow areas until native plants become established. Avoid mowing or grazing any grassland habitats you create. Meadows, however, can be mowed or grazed annually in late fall. You can also create small versions of meadows in your garden. Leave your lawn unmown, then in early spring, dig out sections of your lawn and add native plants and bulbs, or broadcast seed the area with native plant seeds. If you want a neater look, mow the area once or twice in the spring, and then not until fall. Remove grass clippings after they have dried.

Enhancing forest habitats near your home –
Pockets of woodland habitat in your outdoor space will provide continuity with nearby forests. You can plant small woodland habitats around your property, or you can plant smaller, shade-tolerant shrubs, trees, and groundcovers along the forest border to create more forest edge habitat (see the Provincial Guide). The plant tables in this booklet will help you select plants that are most suitable for the type of woodland habitat you wish to create, whether it is a deciduous, coniferous, open, or deep shade woodland.

Protecting and restoring riparian habitats –
Riparian habitat refers to the green belt of vegetation around wetlands, lakes, rivers, and streams. The lush plant growth in these areas protects the waterbodies from runoff, and provides extremely valuable habitat for many wildlife species. Try to protect riparian habitats on or near your property by not draining wetlands, and by leaving at least a 15-metre-wide band of vegetation along or around the shoreline. Do not use fertilizers or pesticides around riparian areas. These chemicals have an uncanny knack of ending up in surface and ground water runoff and, not surprisingly, can seriously threaten the health of a wetland. Also try to restrict livestock grazing and human activity around wetlands. Amphibians and breeding wetland and marsh birds are often highly sensitive to disturbance, and to the removal of protective riparian vegetation.

You may be able to enhance or restore riparian areas by planting native plants, and by reducing human and livestock use of the riparian zone. If you do not have wetlands on your property, remember that even small, wet areas such as seeps and ditches can provide valuable native plant and animal habitat if you avoid mowing or clearing them. For additional information on the protection of riparian areas, see the reference section in the Resource Booklet.

Providing wildlife travel corridors –
Many wild animals avoid travelling across large open areas because this makes them vulnerable to predators. Interconnected corridors of protective vegetation form important travel routes for many animals. You may be able to create or enhance wildlife travel corridors on and around your property. For example, if you plant a windbreak of trees, consider adding some shrubs to provide additional protective cover for smaller animals. Or you could plant hedgerows of native shrubs. The hedge should be 4-5 metres wide, and should include a variety of shrubs that provide seeds and berries. After the shrubs become established, you may wish to add some climbing vines. Do not prune your hedgerows. Thicker growth usually provides better cover. You can also plant shrubs in clumps throughout your property. As well as providing small islands of protective cover and foraging habitat, these shrub groupings can act as living screens for areas of your yard that you may not want to see.

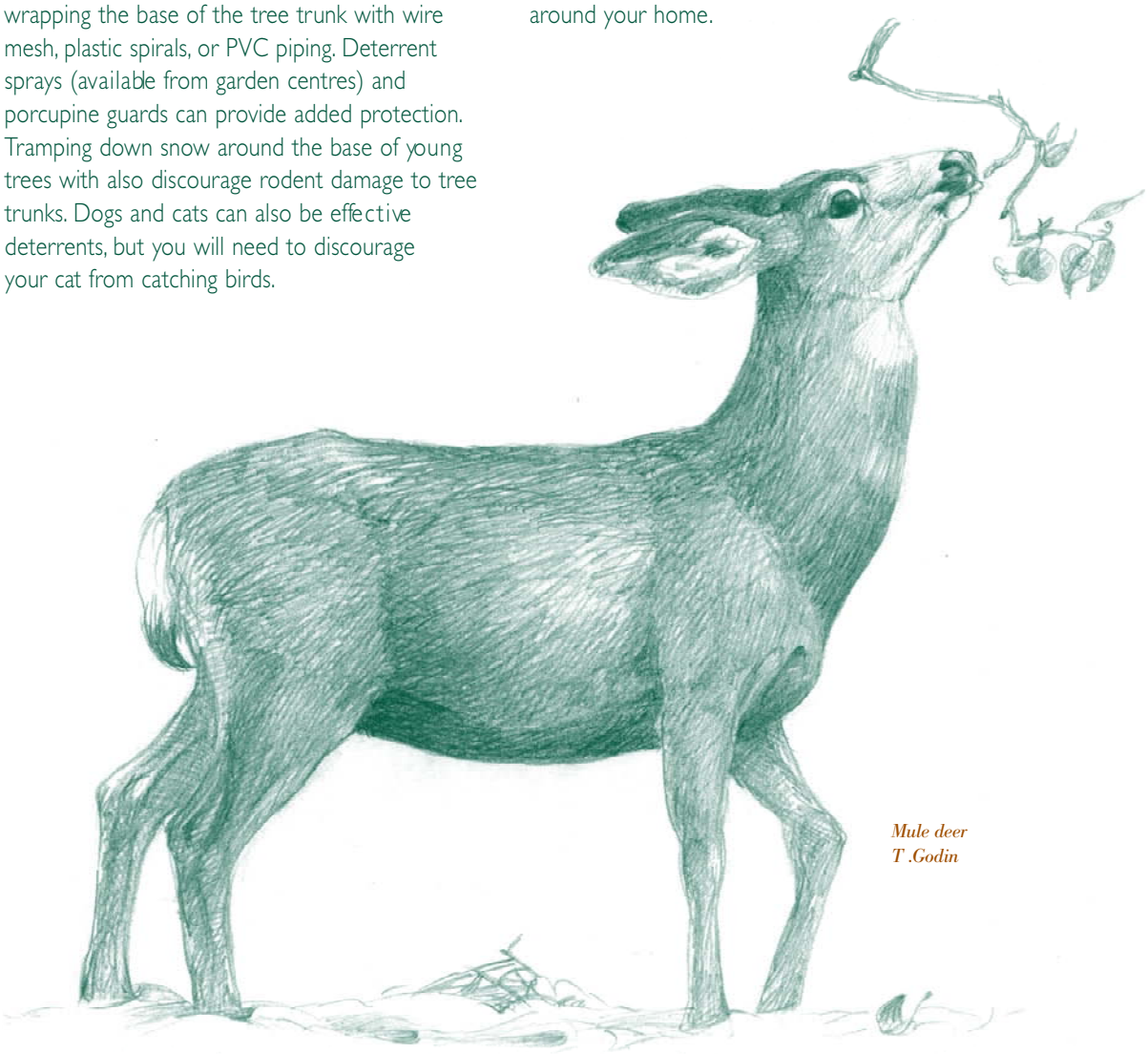
When you don't want to share your space with wildlife -
If deer and moose are common visitors around your home you will probably want to protect some of your garden by fencing it (although dogs can also be helpful here). Placing vegetable and flower gardens close together can reduce fencing costs and maintenance. A handsome and inexpensive fence can be made by obtaining scrap boards from local mills. Cut the boards into 1.5-2 metre lengths, and nail them vertically to cross rails made from tree thinnings. You will also need to place a top-rail 0.5 metres above the top of the fence. You may wish to plant native shrubs and vines along your fences to camouflage them, or to create additional cover or foraging habitat for wild animals.

Another type of fence can be made from rails and fish netting. Rails can be made from tree thinnings, and netting can be obtained at no cost from net repair shops on the coast. Elevate the cross-rails 2.5 metres above the ground and drape the netting over the rail and down to the ground. Weight the bottom of the netting with rocks or boards. This type of fencing has the added advantage of allowing you to see beyond your property to the surrounding wilderness.

If rodents are a problem in your garden, you can keep them from damaging young trees by wrapping the base of the tree trunk with wire mesh, plastic spirals, or PVC piping. Deterrent sprays (available from garden centres) and porcupine guards can provide added protection. Tramping down snow around the base of young trees with also discourage rodent damage to tree trunks. Dogs and cats can also be effective deterrents, but you will need to discourage your cat from catching birds.

If birds are raiding your vegetable or flower garden, try planting native berry- and seed-producing plants around your property. Birds are less likely to eat your prize fruits and vegetables if there are plenty of native food sources nearby.

If mosquitoes and black flies are a problem around your home, keep trees, shrubs, and tall grasses away from outdoor sitting areas. Thinning existing vegetation slightly, or planting new areas so that there is good air movement amongst plants will also help control populations of biting insects around your home.



Mule deer
T .Godin

IN SUMMARY

Look beyond your yard and focus on the surrounding natural environment. You share this landscape with a community of native plants and animals. Can you see how your home's address now becomes your location in the broader landscape of the Central Interior Ecoprovince?

As you drive through the towns and villages of this region, you may notice how different they are from the surrounding rural or wilderness areas. Urban landscapes need not be so disconnected from the natural landscape. A little creativity and a slightly different approach to landscape planning are all that is needed to "naturalize" our urban centres. You will become an important part of this new philosophy by creating a naturescape garden. By caring for native plant and wildlife habitat around your home, you begin the process of creating a mosaic of native habitats that connect with the surrounding wilderness. Eventually, you may want to move beyond your property line and promote the creation, restoration, enhancement, or maintenance of larger natural areas. Also think about the impact of human activity on your local natural landscape. Consider learning about how urban development and resource extraction affects your local environment. You may even want to get involved in local area planning and decision-making. Whatever you do, you will soon see that your naturescape is part of an overall commitment to maintaining the integrity and diversity of your local natural community.

SUMMARY OF PLANT AND ANIMAL TABLES, CENTRAL INTERIOR

Table 1: Native Plants

This table includes native plants that are currently available from retail and wholesale nurseries. There are very few nurseries in the Central Interior that stock native plants. You may have greater success finding native plants in nurseries in the Southern Interior and lower mainland. Many nurseries in those areas provide mail order catalogues of the plants they stock (see the Resource Booklet).

Success rates for nursery-raised native plants are often much higher than those of plants taken from the wild, even if the nursery has propagated plants from stock that is not local to your area. Nursery-raised plants will do best if they are protected with mulch for the first winter, or until they become well established. If you are interested in growing a particular species that is not stocked by a nursery, try collecting the plant or taking cuttings from plants growing in areas that are already disturbed, or slated for development (e.g., road building sites, housing developments, logged areas, power-line or railroad right-of-ways). Do not disturb natural areas merely to create a similar natural space on your property. You will be most successful in transplanting native plants to your yard if you follow procedures such as those listed in the Streamkeepers and Wetlandkeepers manuals, or on the Streamside Nursery web-site (see the Resource Booklet). You could also collect seed from native plants, but collect no more than 10% of the entire seed crop, and do not collect in parks, ecological reserves, or wildlife management areas. Most native seeds take time to germinate. Pretreatment techniques such as scarification and/or stratification often improve germination rates. Most reliable gardening books provide tips on these types of pretreatment techniques.

The native plant table in this booklet is arranged by habitat type - i.e., woodland, grassland/meadow riparian area, or alpine. Woodland habitats include plants found in deciduous and coniferous forests that are either open (i.e., have partial shade at ground level), or closed (i.e., are completely shaded at ground level). Grassland/meadow habitats include arid grasslands and moist meadows found in subalpine parklands at all altitudes where trees have been cleared. Riparian areas refer to the green-belt of moisture loving vegetation around wetlands, lakes, rivers, and streams. Alpine habitats include alpine meadows (damp), rocklands and heaths. Use these habitat groupings, plus the key for light and moisture requirements to select plants that are most suitable for your setting. For example, if you want to create or enhance a dry, open woodland, or woodland edge habitat on your property, then select those plants listed under woodland habitats that prefer partial sun and well-drained soils. Many species, however, do well in more than one type of habitat, so you may wish to experiment with your plantings. Be aware, though, that local growing conditions vary considerably throughout the Central Interior. Depth and duration of snow cover, winter temperatures, and length of growing season all affect plant survival. In addition to using this plant table, you may wish to check nearby natural landscapes or refer to local plant identification guides (see the Resource Booklet) when making your selection of native plants to use in your natural landscape design.

Key

X - Indicates species that are suitable for xeriscape (water conservation) gardens

Availability

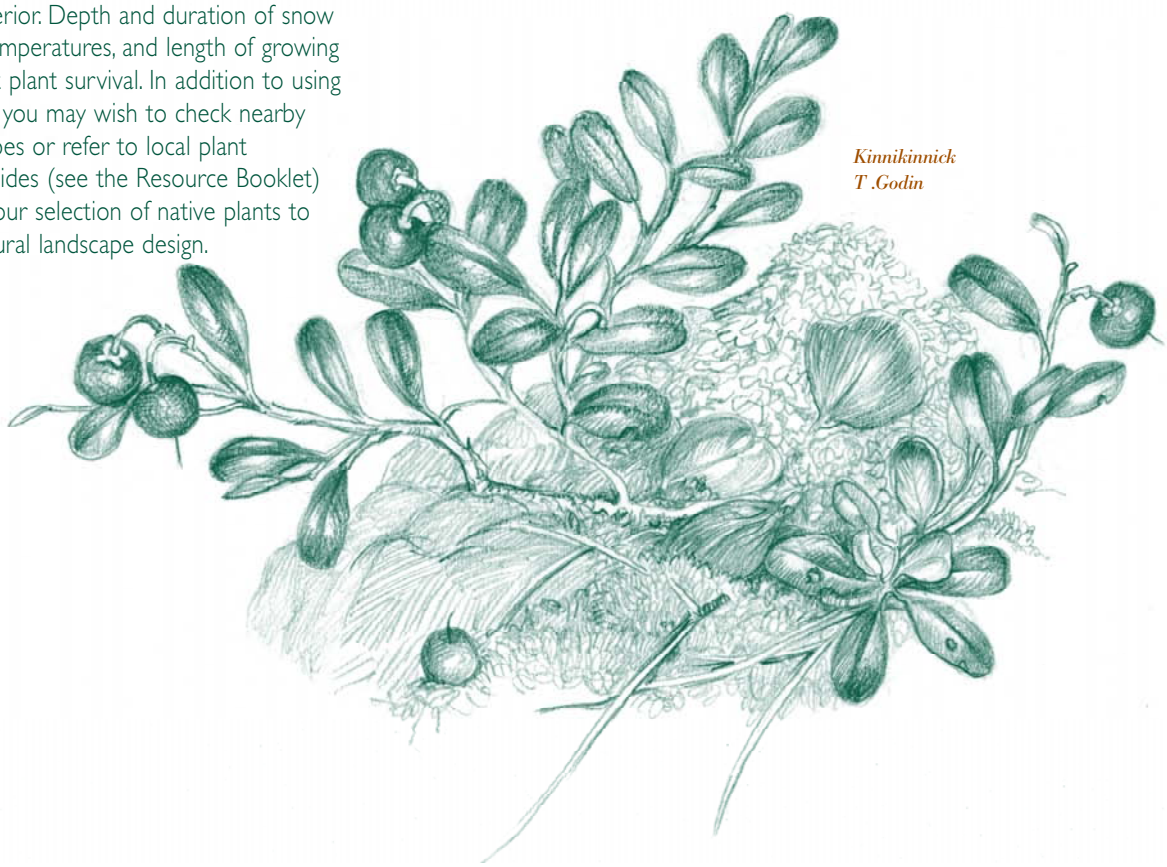
- available in specialty and wholesale nurseries. Contact nurseries for information
- available in retail nurseries outside the Central Interior
- available in local nurseries and garden centres

Sun Exposure

- prefers full shade
- prefers a mix of sun and shade
- prefers full sun

Moisture Preference

- prefers dry, well-drained soils
- needs some moisture
- prefers moist to wet soils



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T .Godin

Alpine

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
Trees					
subalpine fir *Abies lasiocarpa*				30 m evergreen found in subalpine forests; prostrate shrub at timberline; smooth grey bark, short branches, stiff needles, spire-like growth form	Seeds a favourite with squirrels; browse for mountain goats in parkland areas; buds, twigs and bark eaten by snowshoe hares in winter
Engelmann spruce *Picea engelmannii*	& SEED			24-40 m evergreen found in subalpine forests to treeline; smooth grey bark, short branches, stiff needles, spire-like growth form; extremely long lived	Seeds eaten by crossbills and squirrels
Shrubs					
false azalea *Menziesia ferruginea*	& SEED			Shrub up to 2 m tall; oblong leaves are light green with rusty coloured hairs; attractive salmon coloured urn-shaped flowers; leaves turn bright orange in fall	Cover and nesting for birds
white-flowered rhododendron *Rhododendron albiflorum*	& SEED			Slender, deciduous shrub to 2 m tall found in subalpine forests; leaves turn bronze to orange in fall; large showy white flowers; difficult to propagate	All parts are poisonous; dense foliage provides cover for birds and mammals; larval food for Zephyr butterfly
Ground Covers					
crowberry *Empetrum nigrum*	-			Up to 15 cm tall; low growing, matted evergreen shrub with needle-like leaves and black berry-like fruits; easily propagated from cuttings; able to tolerate severe winter conditions	Berries are eaten by black bears, grizzly bears, red-backed and heather voles
pink mountain-heather *Phyllodoce empetriformis*				Low, matted, evergreen 10-40 cm tall found in subalpine and alpine heath; leaves needle-like; pink-rose, bell shaped flowers; easy to propagate by cuttings or layering	
Grasses/Sedges/Rushes					
black alpine sedge *Carex nigricans*	-			4 to 30 cm tall sedge with stiff leaves and solitary spikes; grows in snowbeds in meadows of the alpine and subalpine	In its natural habitat, this and other sedges are important food for pikas, hoary marmots, mountain goats and caribou
small-flowered woodrush *Luzula parviflora*				20-80 cm tufted or solitary stems found in meadows and sub-alpine forests; inflorescence an open, nodding panicle; leaves 5-10 mm wide	Likely grazed by mountain goats and caribou in native habitat, particularly in spring when shoots are more palatable
alpine bluegrass *Poa alpina*	SEED			Short tufted perennial 5-30 cm forming mats of basal leaves; inflorescence extends above basal leaves	Forage plants for wildlife; seeds eaten by birds such as Horned Larks
Perennials					
western pasque flower/tow-headed babies *Anemone occidentalis; Pulsatilla occidentalis*				Perennial 20-50 cm tall found in subalpine and alpine meadows and forest openings; leaves feather-like; solitary white flowers; showy heads of soft, whitish, hairy seed heads	Probably eaten by hoary marmots; food for pika

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
yellow mountain-avens and white mountain avens *Dryas drummondii and D. octopetala*				25 cm prostrate, evergreen semi-shrub often forming extensive, low mats in open gravelly low to alpine areas (often calcium rich); single, pale yellow flowers with broad oval sepals; twisted and later fluffy seed head of feathery plumes; can be propagated by layering and by cuttings; roots fix nitrogen	Food for pika in native alpine habitat
subalpine daisy *Erigeron peregrinus*				Rhizomatous perennial 10-60 cm tall found at subalpine to alpine in meadows and forests; can form clumps; pink-purple flowers in mostly solitary heads	Food for pika in native alpine habitat
pink monkey-flower *Mimulus lewisii*				Perennial 30-80 cm tall from branching rhizomes found in subalpine wet forest openings; showy rose-pink trumpet shaped flowers found along creeks and streams	
showy Jacob's ladder *Polemonium pulcherrimum*				Taprooted perennial 5-35 cm tall with clustered stems found in subalpine forests to alpine meadows and ridges; leaves mostly basal and ladderlike; showy clusters of blue, bell-shaped flowers; easily propagated from seed and self seeds; grows in dry sandy or gravel substrate	
moss campion *Silene acaulis*				Perennial 3-6 cm tall in compact mats up to 50 cm broad found in rock crevices or exposed ridges at alpine; leaves mostly basal; showy, pink flowers; easily propagated from seed; grows in moist but well-drained soils.	
WOODLANDS					
TREES					
Sitka alder *Alnus crispa ssp. sinuata; Alnus sinuata*				Shrub or tree to 5 m in low elevation to subalpine forests. Roots fix nitrogen.	Alder seeds eaten by Pine Siskins, good foraging sites for warblers and other insectivores
paper birch *Betula papyrifera*				30-40 m deciduous tree found on moist but well drained soil in forests and forest openings; white, papery bark; leaves turn bright yellow in fall; shade intolerant; frost tolerant	Seeds eaten by Pine Siskins, chickadees and redpolls; food for beaver and porcupine; wrens and creepers nest under bark; larval food for butterflies
white spruce ** occurs in west Chilcotin only; hybrid spruce elsewhere *Picea glauca, and P. glauca x englemannii*				30-35 m evergreen similar to *P. engelmannii* but generally found at lower elevations in moist soil along rivers and lakes; shallow roots and susceptible to windthrow; *P. engelmannii* and *P. glauca* form hybrids in this area	Seeds eaten by crossbills and squirrels; large old trees good for raptor nests; young trees used for summer nest sites for flying squirrels; buds and needles eaten by grouse
lodgepole pine *Pinus contorta*				20-25 m evergreen found in forests at all elevations on a variety of soils and moisture regimes; straight and narrow form with long needles in bundles of two; used for shelterbelts; tolerates low nutrient sites.	Seeds eaten by crossbills, Pine Grosbeaks and squirrels.

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
ponderosa pine *Pinus ponderosa* X				15-30 m evergreen found only in open forests of southern sections of central interior; attractive reddish jigsaw bark, long needles and large cones; roots sensitive to compaction or other disturbance; not shade tolerant	Seeds provide food for birds and mammals; ponderosa pine forests provide important winter range for ungulates
trembling aspen *Populus tremuloides*				To 30 m deciduous tree found in a variety of sites from moist, open forests to the edges of dry grasslands; whitish bark; trembling leaves that turn bright yellow in fall; shallow invasive roots; appropriate for rural landscapes	Aspens are food plants for several butterfly species; fast-growing and quickly provide bird foraging habitat; older aspens are favoured by woodpeckers for nest cavities; food and building material for beaver; food for porcupine; buds are a favourite Ruffed Grouse food
interior Douglas-fir *Pseudotsuga menziesii var. glauca*				25-35 m evergreen found in mid-elevation to subalpine forests in well drained soils; deeply furrowed bark; short needles soft to the touch; somewhat shade tolerant; not frost hardy; moderately drought tolerant; coastal subspecies is found in nurseries, the interior form must come from specialty nurseries	Abundant seeds support small mammals and birds; many mule deer in this region rely on Douglas-fir forests for winter shelter and food; older trees are good sites for raptor nests and woodpecker feeding
SHRUBS					
Douglas maple *Acer glabrum*				1-7 m deciduous shrub found in dry to moist open forests and clearings; good ornamental; early crimson twigs in spring; leaves turn bright red-orange in fall; small enough for urban yards	Seeds eaten by Evening Grosbeaks; flowers a nectar source for insects
Sitka alder *Alnus crispa* ssp. *sinuata*				1-5 m deciduous shrub found at all elevations in forests and clearings; long male catkins in spring; female catkins cone like; roots fix nitrogen; will establish in disturbed sites; easily propagated from fresh seed collected in fall	Alder seeds eaten by Pine Siskins; good foraging sites for warblers and other insectivores
saskatoon *Amelanchier alnifolia*				1-5 m deciduous shrub found in dry to moist forests, on slopes, and gullies of grasslands; showy white flowers in early spring; purple good tasting berries; cultivars widely available for fruit garden; prune largest stems at ground level to control height	Berries eaten by many birds including tanagers, thrushes, and Cedar Waxwings; berries are also a favourite of bears and small mammals; important winter browse for deer and moose; larval food for Two-tailed Swallowtail
redstem ceanothus *Ceanothus sanguineus* X				1-3 m deciduous shrub found in open forests and clearings; fluffy clusters of white flowers; red twigs add winter colour; roots fix nitrogen	Favourite browse for deer; also browsed by moose and bighorn sheep; larval food plant for several species of butterflies, including the Pale Swallowtail
snowbrush *Ceanothus velutinus* X				0.5-2 m sprawling evergreen shrub found in warm dry forest openings; clusters of white flowers; fragrant foliage; a good ground cover for large spaces; requires extra water until established; fixes nitrogen	Important browse for deer, moose and bighorn sheep
beaked hazelnut *Corylus cornuta*				1-4 m deciduous shrub found in moist but well drained sites in open forests and shady clearings; many stems; male catkins long and drooping	Cover and nest sites for many birds; hazelnuts gathered and stored by chipmunks, squirrels, voles, mice, crows and jays

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
black twinberry *Lonicera involucrata*	& SEED			0.5-2 m deciduous shrub found in sites with moist to wet soils in forests, clearings and edges of wetlands; small yellow twin flowers in early spring; black berries in conspicuous red bracts	Flowers are a nectar source for hummingbirds in spring. Berries eaten by birds and mammals
tall Oregon-grape *Mahonia aquifolium*				Attractive evergreen shrub to 1m found in dry to moist forests and openings; holly-like leaves, yellow showy flowers and blue berries; spreads from roots; will grow in dry shade or full sun but size will vary considerably with conditions	Large, dense specimens provide winter cover for ground-dwelling birds; nectar for butterflies
Devil's club *Oplopanax horridus*	& SEED			Erect to sprawling 1-3 m deciduous shrub found in moist to wet sites in forests; very spiny stems; large leaves; attractive clusters of bright red berries; slow to propagate from seeds, cuttings, or layering; a garden ornamental but use in areas away from traffic; understory of shady forests	Berries are a favourite with bears
false box *Pachistima myrsinites*				Dense evergreen shrub to 60 cm found in coniferous forests and clearings; tiny red flowers	Browse for deer and moose
northern black currant *Ribes hudsonianum and R. lacustre*				0.5-2 m deciduous shrub found in moist and wet forests and openings; no thorns; small white flowers early in spring; black berries; numerous cultivars for the fruit garden	Berries provide food for birds and mammals; flowers provide nectar for hummingbirds
prickly rose *Rosa acicularis*				1.5 m deciduous shrub found in open forests, clearings, and disturbed sites; thorny stems; single pink flowers and red hips; invasively spreads by suckering	Rose hips are eaten by many animals particularly mammals such as chipmunks, coyotes, bears and grouse
thimbleberry *Rubus parviflorus*				0.5-2 m deciduous shrub found in open forests and clearings; large maple-like leaves; white flowers; soft red berries; forms thickets so suitable to naturalize among trees	Berries eaten by birds and small mammals
soopolallie *Shepherdia canadensis*	& SEED			1-2 m deciduous shrub found in open forests, openings and clearings; tiny red flowers in early spring; many small red berries; need male and female plants to get berries; fixes nitrogen; understory plant of open forests	Leaves and fruit eaten by heather voles in summer
western mountain-ash *Sorbus scopulina*				1-5 m deciduous shrub found in moist forests, openings, and clearings; clusters of white flowers; orange berries; sticky winter buds	Berries a favourite of waxwings, Pine Grosbeaks, robins, and starlings; twigs eaten by deer and moose
Sitka mountain ash *Sorbus sitchensis*				1-4 m deciduous shrub found in open coniferous forests, clearings, and along stream banks; clusters of white flowers; orange berries; non sticky winter buds	Berries a favourite of waxwings, Pine Grosbeaks, robins, and starlings; twigs eaten by deer and moose

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
snowberry *Symphoricarpos albus*				50-150 cm deciduous shrub found in open forests and openings; delicate appearance; pinkish flowers; white berries that persist through winter; spreads by rhizomes to form low thickets	Winter food for Pine Grosbeaks and Townsend's Solitaires; host for Snowberry Clearwing Sphinx moth
western yew *Taxus brevifolia*				Low spreading evergreen to 15 m tree found in moist shady coniferous forests; flat needles; bark has reddish or purplish scales that come off exposing a rose underbark; red fleshy berry like fruits	Berries are poisonous to humans and livestock but variety of birds use them as food
black huckleberry *Vaccinium membranaceum*				Coarse deciduous shrub to 1.5 m found in coniferous forests, openings, and clearings; small urn-shaped pink flowers appearing with or after leaves; purplish delicious berries	Vacciniums are larval food plants for several butterflies including the Pink-edged Sulphur and Reakirt's Copper; berries are eaten by birds and mammals
highbush-cranberry *Viburnum edule*				Straggly to erect deciduous 0.5-2.5 m shrub found in moist to wet sites in forests, clearings, and swamps; clusters of small white flowers; dark green leaves that turn brilliant red in fall; red berry like fruits that persist in winter	Berries eaten by birds in winter
GROUND COVERS					
kinnikinnick *Arctostaphylos uva-ursi* ***X***				Trailing evergreen shrub found on well-drained sites in forests, clearings, and gullies in grasslands; shiny, dark green leaves; pink flowers; red berries; native strains more drought-tolerant than cultivars	Berries eaten by birds, voles and bears; twigs and buds are also winter food for the red-backed vole; larval food plant for the Brown Elfin; nectar source for butterflies
bunchberry *Cornus canadensis*				5-20 cm trailing rhizomatous perennial found in moist coniferous and mixed forests and openings; clusters of small flowers surrounded by large conspicuous white bracts; bright red berries in late summer	Year round forage for deer; grouse eat the berries
woodland strawberry *Fragaria vesca* and *F. virginiana*				Perennial spread by runners as in cultivated strawberries found in open forests, meadows and along stream banks; leaves yellow green; white flowers; small delicious berries	Berries eaten by birds, small mammals, bears and humans; larval food for Two-banded Skipper butterfly
velvet-leaved blueberry *Vaccinium myrtilloides*				10-40 cm deciduous perennial; grows in dense colonies; velvety branches; flowers in clusters	Fruit eaten by chipmunks, bears, other mammals and grouse; twigs and buds are winter food for voles; larval food for a variety of butterflies
mountain cranberry **actually only occurs north of this ecoprovince *Vaccinium vitis-idaea*				Mat-forming evergreen shrub 10-20 cm tall found in coniferous forests from low to alpine elevations; small urn-shaped pink flowers in spring; red berries; needs moist soil	Fruit eaten by chipmunks, bears and other mammals; larval food for a variety of butterflies

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
GRASSES					
pinegrass *Calamagrostis rubescens*				60-100 cm tall common grass found in forests in this region; often does not form heads in shade but spreads by rhizomes. Reddish colour at base	Seeds eaten by deer mice and chipmunks; grazed on by grizzly bears and mule deer; food plant for a variety of butterfly and moth larvae
PERENNIALS					
heart-leaved arnica *Arnica cordifolia*	SEED			10-60 cm perennial from a rhizome found in open forests; opposite heart-shaped leaves; large showy yellow composite flowers bloom in spring; not invasive; easily propagated from seed	
fringed aster *Aster ciliolatus*	SEED			Perennial 60-90 cm tall found in forests, openings, and clearings; purple flowers bloom in late summer; heart-shaped leaves; spreads by rhizomes; blooms more in sun	Butterfly nectar plant; asters are larval host plants for Checkerspot and Crescent butterflies
showy aster *Aster conspicuus*				30-100 cm perennial from rhizomes found in open forests, openings, and meadows; showy purple flowers	Butterfly nectar plant; asters are larval host plants for Checkerspot and Crescent butterflies
fairyslipper *Calypso bulbosa*	-			10-25 cm perennial with round bulb-like corm found in forests with abundant leaf mould; solitary showy rose flowers with ladyslipper-like lip; cannot be transplanted because of associated fungi needed in soil; plant destroyed when picked.	
blue clematis *Clematis occidentalis*				Delicate climbing or trailing vine up to 5 m long found in open forests and openings; large blue flowers; mop shaped cluster of seeds; easily propagated from fresh seeds sown in fall or by layering a section of the vine; will grow in sun if roots are shaded	Seed heads used by birds as nesting material
white geranium *Geranium richardsonii*	& SEED			40-80 cm perennial found in deciduous forests and moist meadows; deeply divided basal leaves; white flowers with purple veins; easily propagated from fall sown seed; prefers shade and soil rich in humus	
tiger lily *Lilium columbianum*				Perennial to 1 m tall from cluster of scaly bulbs found in moist open forests, openings, and clearings; beautiful nodding orange flowers; smooth unbranched stems and whorls of leaves; propagation from seed or bulbs	
arctic lupine *Lupinus arcticus*				Perennial to 80 cm tall found in forests, clearings, and meadows and alpine; stalk of showy purple flowers; large palmate shaped leaves; can form large colonies in meadow; spreads easily	Seeds eaten by ground squirrels; food for pika in alpine areas; larval food for Icarioides Blue butterfly

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
clasping twistedstalk *Streptopus amplexifolius*				50-100 cm perennial found in moist forests and openings; stems branched; leaf base clasps stem; greenish-white bell shaped flowers hang from a twisted stalk; yellow to red berries	Berries are eaten by chipmunks and grouse
western meadowrue *Thalictrum occidentale*				40-100 cm tall perennial from rhizomes; bluish green delicate leaves; male and female flowers on separate plants. Found in meadows and open woods	
three-leaved foamflower *Tiarella trifoliata*				15-50 cm tall perennial from rhizomes found in moist coniferous forests; 5 lobed toothed leaves; tiny white flowers with thread like petals on long flowering stalks	
Canada violet *Viola canadensis*				10-40 cm tall perennial from rhizomes found in deciduous forests and clearings; large heart-shaped leaves on long stalks; white flowers on long stems; easily propagated from runners or sections of rhizomes; can be invasive	Larval food plant for butterflies
FERNS & FERN-ALLIES					
oak fern *Gymnocarpium dryopteris*				Solitary leaves but in colonies found in moist forests and openings; leaves deciduous broadly triangular; 40 cm tall; spreads by creeping rhizomes	
GRASSLANDS / MEADOWS					
SHRUBS / TREES					
big sagebrush *Artemisia tridenta* ***X***	& SEED			2 m evergreen shrub with silvery-gray foliage, very aromatic; found in dry grasslands; small yellow flowers in late summer	Large specimens provide nest sites for Brewer's Sparrows
rabbit-brush *Chrysothamnus nauseosus* ***X***				1 m deciduous shrub with silvery-gray stems and leaves found in dry grasslands; bright yellow flowers in September	Browse for deer and bighorn sheep; nectar for butterflies
creeping juniper *Juniperus horizontalis*				Prostrate evergreen shrub forming mats 3 m in diameter found on dry rocky or sandy open slopes or open forests; bluish berry-like fruit.	Berries eaten by Townsend's Solitaires; browsed by bighorn sheep during the winter
Rocky Mountain juniper *Juniperus scopulorum*	& SEED			10 m shrubby evergreen; slow-growing, found on dry grassy slopes and rocky ridges	Berries eaten by Townsend's Solitaires; larval food plant for the Juniper Hairstreak; browsed by bighorn sheep during winter
shrubby penstemon *Penstemon fruticosus*	-			Low evergreen shrub up to 40 cm tall; bright tube-shaped purple flowers; easily propagated from cuttings; needs warm sites with sandy soils	Provides nectar to hummingbirds and butterflies
choke cherry **more of a grassland shrub - moved from forest section *Prunus virginiana*				Straggly 1-4 m deciduous shrub found in open forests and grasslands; bottlebrush clusters of white flowers; black berries; moist, rich soil preferred but adapts to dry, exposed sites; susceptible to Tent caterpillars; cultivated forms good for fall colour	Berries favoured by many birds and mammals; larval food plant of the Two-tailed Swallowtail butterfly

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
smooth sumac *Rhus glabra*	& Seed			3 m deciduous shrub with clusters of yellow flowers and red berries; leaves spectacularly red in fall. Spreads rapidly from roots, good for bank stabilization. Adapts to a variety of soil and moisture conditions, but sun is essential	Berries are winter food for birds; bark and twigs eaten by woodchucks in early spring
northern gooseberry *Ribes oxyacanthoides*	Seed			0.5-1.5 m sprawling deciduous shrub; armed with bristles; yellow to white flowers in clusters; blue fruit	This early blooming currant provides nectar to hummingbirds returning after winter
Nootka rose *Rosa nutkana*	& Seed			3 m deciduous shrub with thorns at leaf bases, single pink flowers, and red hips. Found in meadows or open woodlands often near water; invasively spreads by suckering	Rose hips are eaten by many animals particularly mammals such as chipmunks, coyotes, and bears. The young foliage and young stems are browsed by wild ungulates.
prairie rose *Rosa woodsii* ***X***				2 m deciduous shrub with thorns on stems, clusters of pink flowers and red hips found in meadows, grasslands, and open forests. Invasively spreads by suckering; needs water for establishment.	Rose hips are eaten by many animals particularly mammals such as chipmunks, coyotes, and bears. The young foliage and young stems are browsed by wild ungulates.
red raspberry *Rubus idaeus*				Erect 1.5 m shrub similar to cultivated raspberry; found in disturbed sites or open forests	Berries eaten by birds and small mammals
willow species found in open areas *Salix commutata/ scouleriana*	-			Deciduous shrubs to trees; propagate easily from cuttings	Important browse for moose and larval host plants for swallowtails and other butterflies
GRASSES					
bluebunch wheatgrass *Agropyron spicatum /Elymus spicatus* ***X***	& Seed			Up to 100 cm perennial bunchgrass found in grasslands, meadows, and open woodlands; previous year's leaves persist; elegant stiff flower spikes	Excellent forage grass for deer and other ungulates; food plant for Skipper and Satyr families of butterflies; seeds and foliage eaten by meadow voles and Columbian ground squirrels; seeds eaten by Vesper Sparrows and Western Meadowlarks
slender wheatgrass *Agropyron trachycaulum*	Seed			Slender loosely tufted perennial 50-90 cm tall found in grassland, meadows, and open forests.	Good forage for ungulates; seeds and foliage eaten by meadow voles and Columbian ground-squirrels; seeds eaten by Vesper Sparrows and Western Meadowlarks
red three-awn *Aristida longiseta* ***X***				20-50 cm perennial bunchgrass with feathery mass of reddish awns found in grasslands often in shallow rocky soils; forms large clumps	Food plant for Skipper and Satyr families of butterflies; sharp awns can injure grazing animals
blue grama *Bouteloua gracilis*	& Seed			Densely tufted perennial 30-70 cm tall found in grasslands and meadows; spikes of bristly flowers held at odd angles and turn red as they mature; not invasive good for massing in full sun	Seeds eaten by deer mice and chipmunks; grazed on by grizzly bears and mule deer
giant wildrye *Elymus cinereus*	& Seed			1-2 m tall wide blue-green leaved perennial found where there is subsurface moisture in grasslands and meadows; often found at edges of wetlands; flower spikes up to 175 cm; highly ornamental; leaves last well into winter	

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altai fescue *Festuca altaica*	-			50-100 cm densely tufted coarse perennial; spikelets large and lustrous; very important grass in west Chilcotin	Important summer food for caribou
junegrass *Koeleria macrantha*	& Seed			Densely tufted perennial 20-50 cm tall found in grasslands; leaves bluish green; inflorescence spike-like turning purple at maturity	Seeds eaten by Vesper Sparrows and Western Meadowlarks; spring forage for deer; forage for bighorn sheep
Kentucky bluegrass *Poa pratensis*	Seed			Sod forming perennial 30-80 cm tall found in grasslands, meadows, and disturbed areas; an introduced species; highly tolerant of mowing and grazing	Foliage and seeds eaten by meadow voles; forage for bighorn sheep and deer; seeds eaten by grassland birds and waterfowl
sand dropseed *Sporobolus cryptandrus*				3-70 cm tufted perennial; seed head delicate	Seeds eaten by Vesper Sparrows and small mammals
needle-and-thread grass *Stipa comata* X	& Seed			60 cm tufted perennial found in dry grasslands; long, spear-like awns attractive, but can irritate pets	Forage for bighorn sheep and deer; foliage eaten by meadow voles
PERENNIALS					
mountain monkshood *Aconitum delphinifolium*	Seed			Found in meadows and often open forests; grows 10 to 120 cm tall depending on conditions and altitude; large showy dark purple hood-like flowers on unbranched stems	
yarrow **probably also belongs in forested section *Achillea millefolium* X	& Seed			10-100 cm tall perennial aromatic herb found in almost any open site; flat clusters of small white or pink flowers; feathery foliage; good bank stabilizer; invasive with irrigation; can be mowed and used as a ground cover	Seeds eaten by the yellow-pine chipmunk
nodding onion *Allium cernuum*	& Seed			50 cm tall leafless flowering stalks from oval bulbs found in grasslands; smells strongly of onion; pink flowers in nodding, umbrella-shaped cluster; grass-like leaves	Hummingbirds and butterflies use nectar
pearly everlasting *Anaphalis margaritacea* X	& Seed			20-90 cm tall with clusters of small yellow disk flowers surrounded by white bracts; found at all elevations in open sites; can be invasive; tolerant of poor soil; used as a dried flower	Preferred summer browse for deer
prairie crocus *Anemone patens* ssp *multifida*	& Seed			5-40 cm tall perennial found in grasslands and meadows; early spring purple cup-shaped flowers; basal leaves develop after earliest flowers; easily propagated from fresh seed that is allowed to germinate summer to fall; will self seed	
rosy pussytoes *Antennaria microphylla* X				Mat forming 5-40 cm rock garden specimen found in grasslands, meadows and other sites with good drainage; gray-wooly leaves; flowers pink to white in a small compact inflorescence	

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
blue columbine *Aquilegia brevistyla*				Taprooted perennial to 70 cm tall found in meadows, along streams, and in open forests; leaves often bluish; flowers blue and cream with hooked spurs	Provides nectar for hummingbirds
red columbine *Aquilegia formosa*	& Seed			Taprooted perennial to 1 m tall with unbranched stems found in meadows and open forests; showy spurred red and yellow flowers	Nectar source for hummingbirds and butterflies
tarragon *Artemisia dracunculus* ***X***				Aromatic perennial to 150 cm tall found in grasslands and on rocky slopes; yellow flowers	Favoured by Oregon Swallowtail butterfly
pasture sage *Artemisia frigida* ***X***				Mat-forming silvery wooly-hairy perennial 10-40 cm tall found in grasslands and open dry Douglas-fir and ponderosa pine forests; late summer blooming yellow flowers	Winter browse for bighorn sheep
showy milkweed *Asceplepias speciosa* ***X***	Seed			Rhizomatous perennial 40-120 cm tall found in grasslands or sandy or gravelly open areas near water; pink to purple flowers	Host plant for Monarch butterfly larvae
tufted white prairie aster *Aster ericoides*				30-80 cm tall bushy perennial found in meadows and grasslands; many small heads with white flowers in fall; easily propagated from seed or root but can be invasive; tolerates alkaline soils	Eaten by woodchucks; larval food for a variety of butterflies in Brushfoot family
arrow-leaved balsamroot *Balsamorhiza sagittata* ***X***	& Seed			75 cm tall perennial found in grasslands; showy large yellow sunflowers in spring; long taproot; cannot be transplanted	Forage plant for deer; eaten by Columbian ground squirrels; provides nectar for hummingbirds and butterflies
sagebrush mariposa lily *Calochortus macrocarpus*	& Seed			20-50 cm perennial from bulbs; grass-like leaves; pale to dark large flowers; very showy	
common hairbell *Campanula rotundifolia*				10-50 cm tall perennial found in meadows and forest openings; showy purple bell-shaped, nodding, flowers; variable height and form depending on site	Foliage contains alkaloids and is avoided by browsing animals
red paintbrush *Castilleja miniata*				10-30 cm tall perennial found in meadows to alpine elevation; cluster of stems from a woody base; brilliant red flowers ; partially parasitic on roots of neighbouring plants (do not transplant); difficult to grow so treasure if you have it	Important nectar source for hummingbirds; larval food for Anica Checkerspot butterfly
white clematis *Clematis ligusticifolia*				Woody climbing vine found in moist areas in grasslands and open forests; profuse white starry flowers; feathery white seed heads	Seed heads used by birds as nesting material
upland larkspur *Delphinium nuttallianum* ***X***				15-40 cm perennial found in grasslands and dry forests; 3-15 showy purple flowers on long stalks;	Poisonous to cattle and humans but not sheep; nectar for bees and butterflies

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
showy fleabane *Erigeron speciosus*				15-80 cm tall perennial found in meadows, clearings, and open forests; striking purple flower heads; easily established from seed and will self seed	Nectar for butterflies
parsnip-flowered buckwheat *Eriogonum heracleoides* ***X***				Clump forming perennial 10-40 cm tall found in grasslands and dry grassy openings; tufted white flowers on multiple stalks; silvery foliage	Valuable larval food plant for several butterflies including the rare Sheridan Hairstreak and Immaculate Green Hairstreak; nectar for bees
Northern rice root chocolate lily *Fritillaria camschatcensis*				Perennial to 80 cm from small, scaly bulbs and bulblets found in meadows and grasslands; bell shaped purplish flowers in compact heads	
brown-eyed Susan *Gaillardia aristata* ***X***	SEED			20-70 cm biennial from a taproot found in grasslands and open forests; showy yellow flowers; propagates easily from seed and then self seeds	Butterfly nectar source
sticky geranium *Geranium viscosissimum*	 & SEED			40-90 cm tall perennial found in grasslands, meadows, and open forests; stems and leaves sticky; showy pink-purple flowers	
old man's whiskers *Geum triflorum* ***X***	 & SEED			40 cm tall perennial often forming clumps found in grasslands, meadows and open forests; urn-shaped pink to yellow flowers blooming in early spring; feather like leaves; feathery clusters of seeds	
cow-parsnip *Heracleum lanatum*				Large robust hairy perennial to 3 m tall found in moist meadows, disturbed ground, and open forests; hollow stems with strong odour; large umbels of white flowers	This and other members of the carrot family are larval food plants for the Anise Swallowtail butterfly
wild blue flax *Linum perenne*	 & SEED			10-60 cm tall short lived perennial found in grasslands and dry open forests; pretty, slender plant with sky blue flowers; easily propagated from seed and self seeds	
large-fruited desert-parsley *Lomatium macrocarpum* ***X***				Less than 25 cm fern-like perennial found in grasslands and dry gravelly areas; white dill like early spring flowers; dormant in summer	Food source for Anise Swallowtail caterpillar
wild bergamot *Monarda fistulosa*	 & SEED			30-70 cm tall perennial found in grasslands, clearings, and dry open forests; bright mauve flowers in a showy cluster at end of stem; pleasant odour	Favorite of bees; provides nectar for hummingbirds
coast penstemon *Penstemon serrulatus*	 & SEED			40 cm tall perennial growing in clumps from a woody base; found in meadows and grassy openings at all elevations; dense cluster of purple flowers at the top of the stem	Provides nectar for hummingbirds: larval food for Anicia Checkerspot butterfly
tall Jacob's ladder *Polemonium caeruleum*	 & SEED			40 cm -1 m tall perennial found in moist meadow and open forests to high elevations; leaves mostly basal; showy pale purplish, bell shaped flowers in loose terminal clusters	

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Idaho blue-eyed grass *Sisyrinchium angustifolium*				Tufted perennial to 30 cm tall found in grasslands and meadows; leaves are grass like; blue flowers on slender stalks near top of flattened stem	
Canada goldenrod *Solidago canadensis*	& Seed			90 cm tall perennial found in meadows and clearings; plume of bright gold flowers in late summer	Butterfly nectar source; eaten by woodchucks
early blue violet *Viola adunca*				10 cm perennial; heart-shaped leaves; blue to deep violet flowers; found in meadows, grasslands, and open forests	
FERNS					
bracken fern *Pteridium aquilinum*				1-2 m large solitary deciduous leaves found in meadows, clearings, and open forests; spreads by rhizomes and can be invasive	Deer eat fiddle heads; poisonous to humans
Rocky Mountan woodsia *Woodsia scopulina*				Clusters of brittle deciduous leaves to 40 cm tall found on dry cliffs, crevices and rock slides; creeping rhizomes	
RIPARIAN AREAS					
TREES					
mountain alder *Alnus incana* ssp. *tenuifolia; Alnus tenuifolia*				10 m tree found along streams and at edges of wetlands; deciduous; roots fix nitrogen	Provides cover and nesting sites for a variety of birds
black cottonwood *Populus balsamifera*				30-40 m tree, deeply furrowed bark; grows easily from cuttings; invasive roots	Fast-growing and provides foraging habitat; older trees hollow-out, providing nest sites and roost sites for owls, swifts, woodpeckers, bats, and other animals; food plants for the larvae of several butterfly species; browse for ungulates
SHRUBS					
bog rosemary *Andromeda polifolia*				Low spreading evergreen shrub with small pink flowers, found in bogs, fens, and swamps	Poisonous to livestock; may be eaten by meadow voles
scrub birch *Betula glandulosa*				0.5-3m tall deciduous shrub found on the edges of wetlands, leaves turn russet in the fall	Provides cover for ground-dwelling birds; seeds eaten by wintering redpolls; buds provide winter food for grouse and ptarmigan
water birch *Betula occidentalis*				Shrub or small deciduous tree to 10 m tall found in forest openings on wet nutrient-rich ground; bark shiny, dark reddish brown; leaves turn yellowish brown in fall	Seeds eaten by Pine Siskins; seeds a favourite of redpolls in winter; beaver food and dam material; good site for warbler nests
red osier dogwood *Cornus stolonifera; Cornus sericea*				4 m shrub with many bright red stems, clusters of white flowers and white berries	Berries favoured by kingbirds, thrushes and other birds; important deer and moose browse; larval food for butterflies
black hawthorn *Crataegus douglasii*				8 m thorny shrub found on the edges of wetlands and streams; white flowers and blackish berries that remain in winter	Thick growth makes it a favourite for nesting and roosting birds; berries eaten by many species of birds and mammals; larval food for the Brown Elfin and Grey Hairstreak; shrikes hang prey on spikes
Columbian hawthorn *Crataegus columbiana*				5 m shrub found along water courses; thorny; white flowers and red berries	Thick growth makes it a favourite for nesting and roosting birds; berries eaten by many species of birds and mammals; shrikes hang prey on spikes

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
wolf-willow *Elaeagnus commutata*				3-4 m shrub found on sandbars and silty cutbanks along watercourses; silvery-gray foliage; small yellow, very fragrant flowers; silvery berries; fixes nitrogen; good drainage necessary; spreads rapidly	Berries eaten by birds and mammals; petioles, twigs and buds are winter food for the red-backed vole
sweet gale *Myrica gale*				1-1.5 m aromatic deciduous shrub; spreads by suckers; yellow waxy male and female catkins appear on separate plants before leaves	Nesting cover for birds
willows *Salix* spp.				Deciduous shrubs to trees from 2-12 m depending on species; easy to start from cuttings; use those that grow naturally in riparian areas	Willows are larval host plants for butterflies and important browse for moose; buds are eaten by grouse, bark is eaten by beaver; bark and buds eaten by heather voles in winter
American bush-cranberry *Viburnum opulus*				2 m shrub found along streambanks; white flowers; bright red berries	Berries eaten by birds in winter
GRASSES AND SEDGES					
large sedges *Carex* spp.	Seed			Sedges resemble grasses but most have solid stems that are triangular in cross-section with leaves in three rows; large sedges frequently grow in standing water and form extensive solid stands	Provide important cover and nesting material for nesting waterfowl; food for muskrats, bog-lemmings and other small mammals; larval food for butterflies
small sedges *Carex* spp.	Seed			Sedges have inconspicuous flowers; they often reproduce vegetatively and can be used to stabilize banks	Sedges used for food and nesting material by the northern bog-lemming and other small mammals; forage for ungulates; larval food for butterflies
tufted hairgrass *Deschampsia caespitosa*				Densely tufted low growing perennial hairgrass with inflorescence on a long stem 20-120 cm tall; found in wet meadows; the inflorescence is delicate and glistens; good accent plant	Seeds are food for birds and small mammals
narrow-leaved cotton-grass *Eriophorum angustifolium*				Perennial up to 70 cm tall; grows in water in large patches from widely spreading rhizomes; the seed head looks like a ball of cotton	
common sweetgrass *Hierchloe odorata*	& Seed			Perennial found in moist meadows and wetlands; spreads from long rhizomes; inflorescence is open and golden yellow; sweet smelling; good for stabilizing loose soil on slopes in disturbed areas	
reed canarygrass *Phalaris arundinacea*	Seed			Coarse perennial to 1.7 m found in wet and disturbed places; large wide leaves; propagates by seed and vegetative runners; difficult to eradicate; used for erosion control	Provides cover for waterfowl, marsh birds, and small mammals
great bulrush/hard-stemmed bulrush *Scirpus acutus; Scirpus lacustris* spp. *glaucus*				Stout perennial to 3 m; found in standing water often in dense stands; leaves insignificant; gray-brown spikelets on curved branches at top of stems	Provides food and cover for fish, muskrats, and otters; seeds eaten by ducks, shorebirds, and marshbirds; provides nesting cover for waterfowl, blackbirds, and wrens

Name Common, Scientific	Availability	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
small-flowered bulrush *Scirpus microcarpus*				Robust, leafy-stemmed perennial to 1.5 m; found in standing water; spikelets at end of spreading branches at top of stem	As above and geese eat the shoots, underground stems, and leaves
PERENNIALS					
water-plantain *Alisma plantago-aquatica*				Perennial found in standing water alone or with cattails; oblong leaves 3-15 cm wide grow from an underground stem; flowering head towers above leaves	Creates shade and shelter for young fish; waterfowl eat its seeds
great northern aster *Aster modestus*				Perennial 30-100 cm tall; showy flowers violet or purple	Nectar source for butterflies
field mint *Mentha arvensis*	SEED			Perennial 20-80 cm: spreads by rhizomes; invasive; grows in damp to wet conditions; fragrant	Nutlets are important food source to wildlife
buckbean *Menyanthes trifoliata*				Aquatic to semiaquatic perennial; white to pink flowers held above water on erect stems	Seeds eaten by waterfowl
yellow "monkey" flower *Mimulus guttatus*				Annual or perennial to 50 cm tall found in wet shallow depressions, disturbed areas; large yellow trumpet-shaped flowers	
water lily *Nuphar* spp.	-			Perennial found in ponds 1-2.5 m deep; leaves float at surface attached by long stalks to underground rhizomes; yellow flowers held above the water; can dominate the surface	Algae, aquatic insects, and other invertebrates grow under the leaves; seeds eaten by waterfowl; deer and muskrat eat leaves, stalks, and flowers; beaver eat rhizomes
silverweed *Potentilla anserina*				Found on edges of wetlands; low growing with feather like silvery to green leaves; spreads by runners; yellow single flower on long leafless stem	Cinquefoils eaten by voles
marsh cinquefoil *Potentilla palustris*				Found in marshes and bogs usually partly submerged; reddish stems up to 1 m; deeply divided and coarsely toothed leaves; flowers reddish purple	Flowers emit a fetid odour that attracts carrion-feeding insects as pollinators
simple-stemmed bur-reed *Sparganium emersum*				Found in marshes and ponds; up to 90 cm in length	Provides cover for waterfowl and marsh birds; seeds eaten by waterfowl and marsh birds; plants eaten by muskrat and deer
cattail *Typha latifolia*				Forms large stands in nutrient rich standing water usually with bulrushes; brown, cylindrical flower spike on top of a 1-3 m stem; leaves wide and nearly as long as stem	Provide shelter to waterfowl and semi-aquatic mammals; nesting sites for Red-winged and Yellow-headed Blackbirds and Marsh Wrens; important food source to a variety of wildlife; excellent water filtering qualities
stream violet *Viola glabella, V. palustris*				5-30 cm short-lived perennial found along streams and in wet forests; heart-shaped leaves; yellow flowers	Larval food for butterflies

Table 2 : Non-Native Plants

This table includes plants that are not native to the Central Interior, but which can be beneficial to local wildlife. These plants are hardy, and blend well with local native plants. Consult the Provincial Guide for ideas on planting to attract butterflies, hummingbirds, and other wildlife to your property.

KEY

X - Indicates species that are suitable for xeriscape(water conservation) gardens

AVAILABILITY

- available in specialty and wholesale nurseries. Contact nurseries for information
- available in retail nurseries outside the Central Interior
- available in local nurseries and garden centres

SUN EXPOSURE

- prefers full shade
- prefers a mix of sun and shade
- prefers full sun

MOISTURE PREFERENCE

- prefers dry, well-drained soils
- needs some moisture
- prefers moist to wet soils

Name Common, Scientific	Sun	Moisture	Description and Cultivation	Wildlife Habitat Values
TREES				
Amur Maple *Acer ginnala*			shrubby tree with brilliant red fall foliage	Seeds eaten by Evening Grosbeaks; caterpillars eat leaves
Russian olive *Elaeagnus angustifolia* ***X***			10 m; attractive tree with silvery foliage; small yellow very fragrant flowers and silvery berries; can be invasive	Berries are a winter favourite with many birds including Western Bluebirds, American Robins, Cedar and Bohemian Waxwings, and Evening Grosbeaks
Crabapple *Malus* spp.			4-10 m ; pinkish white blossoms followed by small fruit	Small fruits are eaten in winter by robins, waxwings, and Pine Grosbeaks
Colorado spruce *Picea pungens*			25 m evergreen; likes moist soil and sunlight; will tolerate dry sites	Thick foliage provides excellent roost shelter for birds; seeds are eaten by finches
Cherry *Prunus* spp.			4-6 m; likes well-drained moist soils	Flowers attract large butterflies; fruits are favoured by birds
American mountan ash and European mountain ash *Sorbus americana* and *Sorbus aucuparia*			4-10 m shrubby tree; attractive foliage, white clusters of flowers, and bright red berries	Important fall and winter fruit for thrushes, waxwings, and many other birds
SHRUBS				
Butterfly bush *Buddleia davidii* and *Buddleia alternifolia*			White to purple clusters of flowers; cut to ground level in winter and mulch for protection	Attracts butterflies and hummingbirds
Cotoneaster *Cotoneaster* spp.			These can be upright bushes 1-3 m tall, or ground-hugging species; small white flowers; red to black fruit	Edible berries are used by a variety of wildlife
English Hawthorn *Crataegus laevigata and Cratagus monogyna* ***X***				Berries attract birds
Burning bush *Euonymus alata*			2-3 m attractive shrub; brilliant red foliage in the fall; tolerates dry conditions	Winter berries for birds
Honeysuckle *Lonicera tatarica*			3 m; very hardy; red flowers and red berries	Attracts hummingbirds and insects

PLANTING NOTES

Date	Species	Observation

Table 3: Butterflies, Moths and Other Insects

Although the following list of butterflies and moths is extensive, it covers only those most likely to be seen in the Central Interior

Abundance

Sliding scale from 1 (rare) to 5 (common)

Food Plants for Caterpillars

Only the most frequently eaten plants are listed, and in some cases only the genus is given, because species use is poorly documented in British Columbia, butterfly watchers should record food plant records through photographs or pressed plant specimens.

Name Common, Scientific	Abundance	Food Plants for Caterpillars	Habitat, Distribution and Natural History
SKIPPERS - Family Hesperidae			
Northern Cloudy Wing *Thorybes pylades*	3	Many plants of the legume family	Forest openings, grasslands in the southern part of the region
Dream Dusky Wing *Erynnis icelus*	3	Poplar (*Populus* spp.), willow (*Salix* spp.)	Forest openings, where deciduous trees occur; southern part of the region
Persius Dusky Wing *Erynnis persius*	2	Milk-vetch (*Astragulus* spp.), lupine (*Lupinus* spp.)	Forest openings and grasslands
Two-banded Skipper *Pyrgus ruralis*	2	Cinquefoil (*Potentilla* spp.), Strawberry (*Fragaria* spp.)	Forest openings in the southern part of the region
Common Sooty Wing *Pholisora catullus*	2	*Chenopodium* spp.	Forest openings in the southern part of the region
Arctic Skipper *Carterocephalus palaemon*	2	Grasses	Stream edges, meadows, from low elevation to alpine
Common Branded Skipper *Hesperia comma*	4	Grasses	Grassland, forest openings from low to subalpine elevation
Tawny-edged Skipper *Polites themistocles*	2	Grasses	Forest openings and wetlands
Woodland Skipper *Ochlodes sylvanoides*	4	Grasses	Common in late summer from low to mid-elevations
Roadside Skipper *Amblyscirtes vialis*	3	Grasses	Forest openings from low to mid-elevations
PARNASSIANS and SWALLOWTAILS - Family Papillonidae			
Phoebus' Parnassian *Parnassius phoebus*	3	Stonecrops (*Sedum* spp.)	Grasslands from mid-elevation to alpine
Old World Swallowtail *Papilio machaon*	2	Tarragon (*Artemisia dracunculus*)	Restricted to low elevation grasslands; males patrol slopes near patches of larval food plants
Anise Swallowtail *Papilio zelicaon*	2	Many plants of the carrot family: cow parsnip (*Heracleum* sp./spp.), desert-parsley (*Lomatium* spp.)	Moist meadows in forested areas, from low elevations to subalpine
Canadian Swallowtail *Papilio canadensis*	4	Poplar (*Populus* spp.), willow (*Salix* spp.), cherry (*Prunus* spp.)	Low elevation to subalpine forest openings; frequently nectars on lilacs in gardens
Two-tailed Swallowtail *Papilio multicaudatus*	2	Choke cherry (*Prunus virginiana*), Saskatoon (*Amelanchier alnifolia*)	Low elevation grasslands and openings in Douglas-fir forests

Name Common, Scientific	Abundance	Food Plants for Caterpillars	Habitat, Distribution and Natural History
WHITES AND SULPHURS - FAMILY PIERIDAE			
Western White *Pontia occidentalis*	4	*Arabis* spp. and other wild mustards	Grasslands and forest openings from low elevation to alpine
Mustard White *Pieris napi*	3	Wild mustards	Cool, moist, open forests up to subalpine
Cabbage Butterfly *Pieris rapae*	5	Garden varieties of the mustard family, such as cabbage and cauliflower	Usually near human settlements, occasionally in natural habitats
Large Marble *Euchloe ausonides*	3	*Arabis* spp. and other wild mustards	Low to mid-elevation grasslands
Sara Orange Tip *Anthocharis sara*	4	*Arabis* spp. and other wild mustards	Grasslands and forest openings up to the subalpine
Clouded Sulphur *Colias philodice*	5	Legumes, especially alfalfa, clover and hedysarum.	Grasslands and alfalfa fields; forest openings up to alpine
Queen Alexandra's Sulphur *Colias alexandra*	2	Milk vetch (*Astragalus* spp.) and alfalfa	Low to mid-elevation grassland and forest openings
Pink-edged Sulphur *Colias interior*	3	Blueberries and huckleberries (*Vaccinium* spp.)	Low to mid-elevation forest openings
GOSSAMER WINGS - FAMILY LYCAENIDAE			
Blue Copper *Chalceria heteronea*	3	Buckwheat (*Eriogonum* spp.)	Grasslands, wherever *Eriogonum* spp. occurs in the southern part of the region
Purplish Copper *Epidemia helloides*	4	Dock (*Rumex* spp.), knotweed (*Polygonuum* spp.)	Widespread near wetlands, from low to high elevations
Reakirt's Copper *Epidemia mariposa*	3	Blueberries and huckleberries (*Vaccinium* spp.)	Widespread, particularly in forest openings in the mountains
Juniper Hairstreak *Mitoura siva*	4	Rocky Mountain Juniper (*Juniperus scopulorum*)	Wherever Rocky Mountain Juniper occurs in the southern part of the region
Brown Elfin *Incisalia augustinus*	4	Kinnikinnick (*Arctostaphylos uva-ursi*) and others	Widespread in dry forest openings wherever kinnikinnick occurs
Western Pine Elfin *Incisalia eryphon*	3	Pine trees (*Pinus* spp.)	Widespread in pine forest openings
Western Tailed Blue *Everes amyntula*	4	Members of the legume family such as peavine (*Lathyrus* spp.), vetch (*Vicia* spp.), and clover (*Trifolium* spp.)	Widespread in forest openings
Spring Azure *Celastrina argiolus*	5	A wide variety of shrubs including red-osier dogwood (*Cornus stolonifera*) and blueberry (*Vaccinium* spp.)	Widespread in forest openings and edges of wetlands
Silvery Blue *Glaucopsyche lygdamus*	5	A wide variety of legumes including milk-vetch (*Astragalus* spp.), vetch (*Vicia* spp.) and lupine (*Lupinus* spp.)	Widespread in grassland and forest openings up to the alpine
Northern Blue *Lycaeides idas*	4	A variety of legumes including, lupine (Lupinus spp.), vetch (Vica spp.) and peavine (Lathyrus spp.)	Widespread particularly in the mountains; often congregates on wet patches of mud
Greenish Blue *Plebejus saepiolus*	4	Clover (*Trifolium* spp.)	Widespread throughout the region in forest openings and meadows, wherever clover occurs
Icarioides Blue *Icaricia icarioides*	2	Lupine (*Lupinus* spp.)	Wherever native lupines occur in the southern part

Name Common, Scientific	Abundance	Food Plants for Caterpillars	Habitat, Distribution and Natural History
BRUSHFOOTS - FAMILY NYMPHALIDAE			
Aphrodite Fritillary *Speyeria aphrodite*	3	Violets (*Viola* spp.)	Grasslands and riparian forests
Zerene Fritillary *Speyeria zerene*	4	Violets (*Viola* spp.)	Forest openings from low to mid-elevation in the southern part of the region
Callippe Fritillary *Speyeria callippe*	3	Violets (*Viola* spp.)	Mid-elevation grassland and forest openings in southern part of the region
Atlantis Fritillary *Speyeria atlantis*	4	Violets (*Viola* spp.)	Low to mid elevation forest openings, particularly in cool moist forests
Hydaspe Fritillary *Speyeria hydaspe*	3	Violets (*Viola* spp.)	Forest openings, up to subalpine in the mountains
Mormon Fritillary *Speyeria mormonia*	3	Violets (*Viola* spp.)	Forest openings, up to the alpine in the mountains
Silver-bordered Fritillary *Clossiana selene*	3	Violets (*Viola* spp.)	Widespread in wetlands and aspen parkland
Meadow Fritillary *Clossiana bellona*	3	Violets (*Viola* spp.)	Moist meadows at mid-elevations
Freija Fritillary *Clossiana freija*	3	Heath family including blueberry (*Vaccinium* spp.), and kinnikinnick (*Artostaphylos uva ursi*).	Moist forest openings up to the subalpine of the region
Titania Fritillary *Clossiana titania*	4	Willows (*Salix* spp.), violets (*Viola* spp.)	Widespread in moist forest openings, usually in the mountains
Northern Checkerspot *Charidryas palla*	3	Aster family, including fleabane (*Erigeron* spp.), asters (*Aster* spp.) and rabbit-brush (*Chrysothamnus nauseosus*)	Grasslands, shrubby areas and forest openings in the southern part of the region
Pearl Crescent *Phyciodes morpheus*	5	Asters (*Aster* spp.)	Widespread in grasslands and forest openings; one of the most common species
Field Crescent *Phyciodes pratensis*	4	Asters (*Aster* spp.)	Widespread in grasslands and forest openings up to alpine
Pale Crescent *Phyciodes morpheus*	2	Thistles (*Cirsium* spp.)	Dry, low elevation grasslands in the southern part of the region
Anicia Checkerspot *Euphydryas anicia*	4	Members of the Figwort family including penstemon and paintbrush (*Castilleja* spp.)	Widespread in grasslands and in the mountains up to the subalpine
Satyr Angelwing *Polygonia satyrus*	3	Stinging nettle (*Urtica dioica*)	Widespread in forest openings up to the subalpine; adults hibernate over the winter
Green Comma *Polygonia faunus*	4	Birch (*Betula* spp.), alder (*Alnus* spp.) and willow (*Salix* spp.)	Widespread in forest openings; adults hibernate over the winter
Zephyr *Polygonia zephyrus*	3	Gooseberry (*Ribes* spp.), white rhododendron (*Rhododendron albiflorum*)	Widespread in mountain forest openings; adults hibernate over the winter
Gray Comma *Polygonia progne*	4	Gooseberry (*Ribes* spp.)	Widespread in mixed forest openings, up to subalpine; adults hibernate over winter
Compton Tortoise Shell *Nymphalis vaualbum*	5	Birch (*Betula* spp.), willow (*Salix* spp.), poplars (*Populus* spp.)	Widespread in forest openings; adults hibernate and are often out by mid-March

Name Common, Scientific	Abundance	Food Plants for Caterpillars	Habitat, Distribution and Natural History
Mourning Cloak *Nymphalis antiopa*	4	Usually willow (*Salix* spp.), or poplars (*Populus* spp.)	Widespread at low to mid-elevation forest openings; adults hibernate over winter
Milbert's Tortoise Shell *Aglais milberti*	5	Stinging nettle (*Urtica dioica*)	Widespread in forest openings from low elevation to alpine; adults hibernate
Painted Lady *Vanessa cardui*	3	Thistles (*Cirsium* spp.) are used most commonly, also a wide variety of other genera.	Migratory; common some years, rare others; low elevation to alpine
Red Admiral *Vanessa atalanta*	2	Thistles (*Cirsium* spp.)	Migratory; common some years, rare others; low elevation to alpine
White Admiral *Basilarchia arthemis*	4	Birch (*Betula* spp.), willow (*Salix* spp.), poplars (*Populus* spp.)	Widespread in low to subalpine forest openings and riparian areas
SATYRS - FAMILY SATYRIDAE			
Ringlet *Coenonympha tullia*	5	Grasses	Widespread in grasslands and forest openings up to mid-elevation
Common Wood Nymph *Cercyonis pegala*	5	Grasses	Low to mid-elevation forest openings
Dark Wood Nymph *Cercyonis oetus*	3	Grasses	Low to mid-elevation forest openings in the southern part of the region
Vidler's Alpine *Erebia vidleri*	3	Grasses	Subalpine to alpine
Common Alpine *Erebia epipsodea*	5	Grasses	Widespread; grasslands up to mid-elevation in the mountains
Macoun's Arctic *Oeneis macounii*	3	Grasses	Widespread; forest openings from low elevation to alpine
Chryxus Arctic *Oeneis chryxus*	3	Grasses and sedges (*Carex* spp.)	Widespread; forest openings from low elevation to alpine

Plant list for a central interior butterfly garden

Key

L Larval food plant;
N Necter source

Columbine	*Aquilegia formosa*	N
Common rabbit-brush	*Chrysothamnus nauseosus*	N
Hedysarum	*Hedysarum boreale*	LN
Kinnikinnick	*Arctostaphylos uva-ursi*	LN
Lilac	*Syringa* sp.	LN
Lupines	*Lupinus* spp.	L
Northern bedstraw	*Galium boreale*	N
Parsnip-leaved buckwheat	*Eriogonum heracleoides*	LN
Red clover	*Trifolium pratense*	LN
Red-osier dogwood	*Comus stolonifera*	L
Rockcress	*Arabis* spp.	L
Russian tarragon	*Artemisia dracunculus*	L
Showy aster	*Aster conspicuum*	LN
Showy fleabane	*Erigeron speciosus*	N
Shrubby penstemon	*Penstemon fruticosus*	N
Small-flowered penstemon	*Penstemon procerus*	N
Spreading dogbane	*Apocynum androsaemifolium*	N
Stinging nettle	*Urtica dioica*	L
Tall Oregon-grape	*Mahonia aquifolium*	N
Violets	*Viola* spp.	L
Wavy-leaved thistle	*Cirsium undulatum*	LN

Mourning Cloak
T. Godin

Name Common, Scientific	Abundance	Food Plants for Caterpillars	Habitat, Distribution and Natural History
NOTICEABLE MOTHS OF THE CENTRAL INTERIOR			
There are a total of about 900 species of moths in the Central Interior of BC. The following are some of the most noticeable species.			
SPHINX MOTHS - FAMILY SPHINGIDAE			
Elegant Sphinx *Sphinx perelegans*	3	Snowberry	Wings coloured in shades of grey
Twin-spot Sphinx Smerinthus jamaicensis	3	Willow, birch, wild cherry	Similar to the Eyed Sphinx, but smaller and with the blue eyespot divided in two
Eyed Sphinx Smerinthus cerisyi	4	Willow, poplar, apple	The Sphinx Moth most commonly attracted to lights
Bedstraw Sphinx Hyles gallii	3	Fireweed, bedstraw	Also commmonly called the "Hummingbird Moth", as with the White-lined Sphinx
White-lined Sphinx Hyles lineata	4	Fireweed, fuschia	Also commonly called the "Hummingbird Moth", because it hovers in front of flowers at dusk to sip nectar much like a hummingbird
Modest Sphinx Pachysphinx modesta	3	Willow, poplar	The largest Sphinx Moth
Snowberry Clearwing Hemaris diffinis	3	Snowberry	Also known as the "bee hawk", because it flies in the daylight much like a bumblebee
SILK MOTHS - FAMILY SATURNIIDAE			
Polyphemus Moth *Antheraea polyphemus*	3	Birch, willow, poplar, cherry, others	Frequently attracted to lights in riparian areas
TIGER MOTHS - FAMILY ARCTIIDAE			
Fall Webworm *Hyphantria cunea*	5	Willow, alder, hawthorn, apple, many others	A widespread web-building pest species; adult moths are pure white
TENT CATERPILLAR MOTHS - FAMILY LASIOCAMPIDAE			
Forest Tent Caterpillar *Malacosoma disstria*	5	Almost all deciduous trees and shrubs, but espcially poplar (trembling aspen) decades resulting in several years of severe	A widespread pest species, does not build tents, has major outbreaks in a given area every few years and causes defoliation of poplars
Western Tent Caterpillar *Malacosoma californicum*	5	Almost all deciduous trees and shrubs	A widespread tent building pest species, the closely related Forest Tent Caterpillar *(Malacosoma disstria)* does not build tents

Name Common, Scientific	Habitat, Distribution and Natural History
OTHER BENEFICIAL INSECTS	
Leafcutter Bees *Megachilidae*	Metallic, dark green bees that cut circular holes in leaves; use leaf cuttings to line burrows underground, or in rotting logs; are important pollinator insects
Orchard Mason Bees *Osmia lignaria propinqua cresson*	Shiny black bees about 2/3 the size of honey bees; are primarily solitary, and are usually found on flowering shrubs and trees; nest in small holes in trees or in specially designed bee boxes (see Griffen 1993 in the Reference section of the Resource Booklet)
Ground Beetle *Carabidae*	Medium to large, flattish, shiny beetles that actively prey on other insects; usually found under rocks or other objects
Ladybird Beetle *Coccinellidae*	Both adults and larvae are major predators of aphids; look for bristly, spindle-shaped, black and orange larvae near aphid colonies
Dragonflies & Damselflies *Odonata*	Beneficial predators; adults prey on flies, mosquitoes, and other small insects; eggs are laid in water bodies of almost any size ranging from small backyard ponds and water troughs to large wetlands; larvae prey on aquatic insects
Hover Flies *Syrphidae*	Wasp and bee-mimicking flies that characteristically hover motionless for a time, then buzz off; important pollinators of many flower species, especially those in the daisy family; larvae prey on aphids and scale insects
Water Striders *Gerridae*	Long-legged insects that skitter across the surface of small ponds, wetlands, and slow -moving streams; pursue insect prey on the water surface
Ichneumon Wasp *Ichneumonidae*	Fairly large, elongate wasps with very long ovipositors ("tails"); lay eggs on larvae of beetles, butterflies, and moths; do not sting humans

TABLE 4: AMPHIBIANS AND REPTILES

How to use this table:

This table lists all the amphibians and reptiles currently known to occur in the Central Interior.

Distribution:

Lists the ecosections where the species is found; "All" signifies that the species is widely distributed in the Central Interior. Please refer to the ecosection map and table.

How to Attract:

General Habitat:

lists the general habitat types where the species is found. Wherever possible, these habitat types have been made consistent with those in the plant tables for easy cross-referencing. Compare the type(s) of habitat on your property, or the types you wish to create, with those used by individual species to determine which amphibians and/or reptiles you may want to attract to your property.

Key Habitat Components:

Specific habitat features within the general habitat type that are important to the species' survival. These can include features such as breeding ponds, or structures that provide protective cover from predators or from the elements. You will have a greater chance of attracting amphibians and reptiles to your property if you provide these types of features within the general habitat types. For example, you may have the appropriate forest or meadow habitat for Wood Frogs, but without breeding ponds, the species is unlikely to be present.

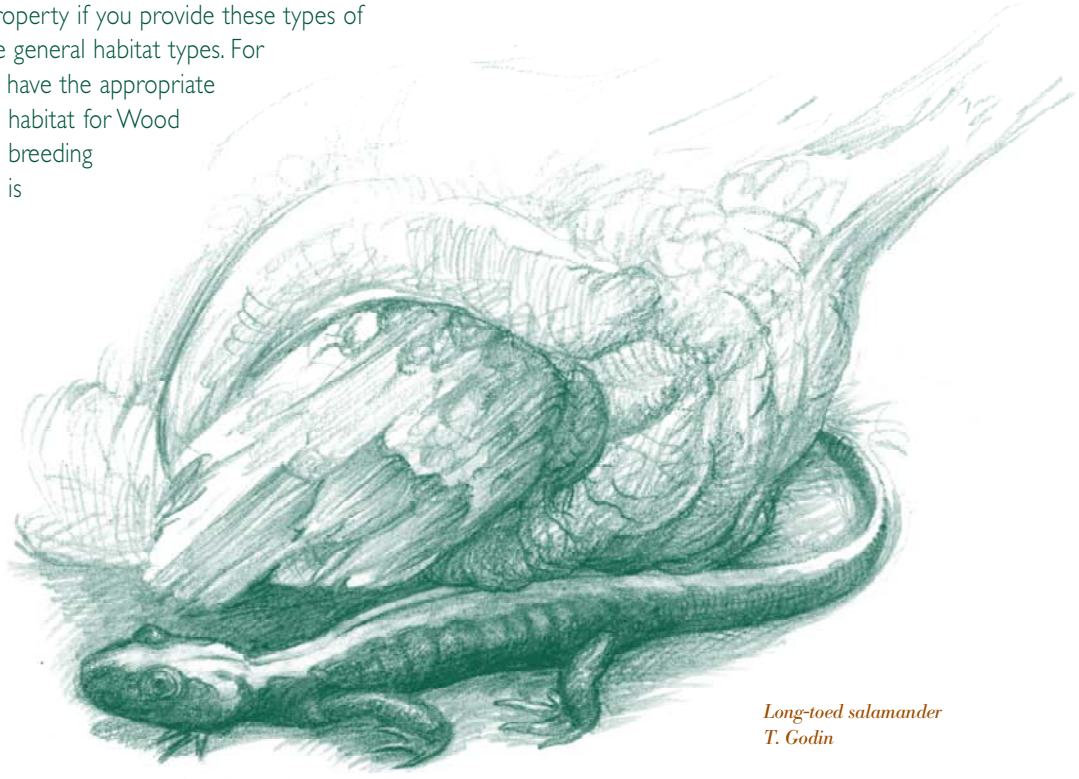
Most amphibians need cool, shady retreats near water. If you do not have natural wetlands on your property, the **Naturescape** Provincial Guide provides tips on creating wildlife ponds (pp. 28-31).

Most reptiles (lizards and snakes) need the protective cover of rock piles or coarse woody debris within their general habitats to withstand daily and seasonal temperature fluctuations. The Naturescape Provincial Guide gives tips on creating rock piles that may provide suitable micro-habitats for lizards and snakes.

Definitions:

Coarse woody debris is the term given to fallen trees, rotting logs, and broken tree branches and twigs that are lying on the ground.

Reminder: It is best to avoid handling amphibians. They may have toxic skin secretions that are transferred to your hands. In turn, they may absorb, through their permeable skin, chemicals such as sunscreens or bug repellants on your hands that are harmful to them. Furthermore, amphibians are often in danger of desiccation, and handling them can increase this risk.



Long-toed salamander
T. Godin

Name Common, Scientific	Distribution	Abundance	General Habitat	Key Habitat Components	Habitat, Behaviour and How to Attract
FROGS & TOADS					
Columbia Spotted Frog *Rana luteiventris*	All	Common	Rivers/streams Wetlands		Found in slow-moving or other permanent water, usually where there is abundant aquatic vegetation; breeds in shallow water; adults eat insects, spiders, and slugs; tadpoles eat algae and other plant material
Wood Frog *Rana sylvatica*	All	Common	Forests Meadows	Ponds (breeding)	Found in habitats near water; breeds in shallow water; adults eat insects, spiders, snails, slugs, and earthworms; tadpoles eat algae and bottom detritus
Pacific Treefrog *Hyla regilla*	Southern Central Interior	Common	Forests Meadows Wetlands	Ponds (breeding)	Breeds in shallow permanent water; adults eat insects; tadpoles eat algae and other plant matter
Western Toad *Bufo boreas*	All	Common	Forests Meadows Wetlands	Coarse woody debris, Rock piles (cover) Ponds (breeding)	Primarily terrestrial, but breeds in permanent water; also uses mammal burrows for cover; less commonly, digs its own burrows in loose substrates; adults eat insects; tadpoles eat algae and bottom detritus
SALAMANDERS					
Long-toed Salamander *Ambystoma macrodactylum*	All	Common	Forests Grasslands Wetlands	Coarse woody debris, Rock piles (cover) Ponds (breeding)	Often found near water or areas with moisture; breeding ponds can be small, but must have permanent water and considerable aquatic vegetation; eats snails and insects
REPTILES					
LIZARDS					
Northern Alligator Lizard *Elgaria coerulea*	Southern Cariboo Basin	Rare	Forests - open Rocky slopes	Coarse woody debris Rock piles (cover)	Found in warm, sunny, well-drained habitats; often basks on rocks; eats insects and spiders
SNAKES					
Common Garter Snake *Thamnophis sirtalis*	All	Common		Rock piles (cover)	Found in most habitats, especially near water; dens communally in large rock piles during winter; eats earthworms, slugs, small fish, amphibians, small mammals, and nestling birds
Western Terrestrial Garter Snake *Thamnophis elegans*	All	Common		Rock piles (cover)	Found in most habitats, especially near water; dens communally in large numbers in large rock piles during winter; eats slugs, small fish, amphibians, small mammals, and nestling birds.
Great Basin Gopher Snake *Pituophis catenifer deserticola* (Blue List)	Fraser River Basin, Cariboo Basin	Uncommon	Forests - open Grasslands Rocky slopes	Brush/shrubs, Rock piles, Underground burrows (cover)	Rocky sites used for winter denning, are critical to survival; will nest in rodent burrows in summer; eats snakes, small mammals, birds and their eggs

Name Common, Scientific	Distribution	Abundance	General Habitat	Key Habitat Components	Habitat, Behaviour and How to Attract
SNAKES					
W. Yellow-bellied Racer *Coluber constrictor mormon* (Blue List)	Fraser River Basin, Cariboo Basin	Uncommon		Found in a variety of warm, open habitats.	Eats insects, frogs, snakes, and small mammals
Rubber Boa *Charina bottae* (Blue List)	Fraser River Basin, Cariboo Basin	Uncommon	Grasslands Rocky slopes	Coarse woody debris Rock piles (cover)	Found in hot, dry habitats; basks on rocks; burrows in sandy, well-drained soils; may be seen on roads at night; eats mice and voles
TURTLES					
Painted Turtle *Chrysemys picta* (Blue List)	Cariboo Basin	Common	Wetlands		Uses ponds and lakes with muddy bottoms and abundant vegetation lays eggs in sandy, well-drained soils adjacent to ponds; basks on rocks and logs in, or at edge of, ponds; eats algae, snails, insects, and small fish

Table 5: Birds

Birds, with their bright colours, songs and daytime habits, are one of the most rewarding groups of wildlife to attract to your home. Read the **Naturescape** Provincial Guide for good information on how to attract birds; here are some quick hints on creating a Central Interior backyard to attract birds:

Provide a source of water for drinking and bathing. Almost every species of bird near your home will use a small birdbath, which can be as simple as a large dish or old garbage can lid set in the ground.

Plant berry-producing shrubs and trees. Mountain ash, choke-cherry, saskatoon, and red-osier dogwood are good native species; one of the best non-native species is blue elderberry.

Plant nectar-producing flowers for hummingbirds. Honeysuckle and columbines are excellent choices.

Provide seeds for sparrows, finches, and other species. Small black sunflower seeds are perhaps the best all-round type, but millet and large striped sunflower seeds are also popular. Siskins prefer the small niger seeds.

Provide suet or a suet mix for woodpeckers, chickadees, nuthatches, jays, and several other species. Suet can be hung in cake form in an onion bag or wire frame, or pushed into holes drilled into a hanging log. If you have had problems with woodpeckers drilling on your house or outbuildings, hang suet feeders well away from your buildings.

Put up nest boxes for cavity-nesting species such as chickadees, nuthatches, swallows, and bluebirds. Larger boxes provide homes for small owls, kestrels, flickers, and several species of ducks. Barn Swallows, Say's Phoebes, and American Robins can use nest platforms placed under the eaves of houses or outbuildings. Large nest platforms built of wire mesh and sticks can attract larger owls or even Ospreys. If you have a large yard, brush piles or areas of thick shrubbery will provide roosting and escape cover.

If you are fortunate enough to have wetlands on your property, you may be able to attract a number of species by ensuring that those sites are not drained or subjected to pesticide or fertilizer runoff. Minimizing human disturbance, brush clearing, and cattle grazing around these sites will help maintain prime nesting and roosting habitat for many birds.

If you have pet cats, please keep them indoors if you can. If not, place low wire fences (sold in garden stores as edging) around cover sites cats could use before pouncing. Forcing the cat to go over the fence gives the birds just enough time to escape. Belling cats is often ineffective.

The following list of birds includes most of the species that can actively be encouraged to forage or nest around your home. Some species that require grasslands or wetlands on ranches or other large properties are also included, as is a short section on introduced species.

How to use this table:

The following list of birds includes most of the species that can actively be encouraged to forage or nest around your home. Some species that require grasslands or wetlands on ranches or other large properties are also included, as is a short section on introduced species.

Distribution:

lists the ecosections where the species is found; "All" signifies that the species is widely distributed in the Central Interior. Please refer to the ecosection map and table.

How to Attract:

General Habitat:

lists the general habitat types where the species is found. Wherever possible, these habitat types have been made consistent with those in the plant tables for ease of cross-referencing. Compare the type(s) of habitat on your property, or the types you wish to create, with those used by individual species to determine which birds you are most likely to attract.

Key Habitat Components:

are specific habitat features within the general habitat type that are important to the species' survival. These generally include features that provide suitable nesting or roosting sites. You will have a greater chance of attracting birds to your property, if you retain, or provide these types of features within the general habitat types.

Comments:

provide additional information on the species listed. Some words have been bold-faced to provide a quick reference for additional features (e.g., feeders, nest boxes) that you can add to your yard to attract certain species of birds.

Definitions:

Emergent vegetation refers to plants that are rooted in the bottom of ponds, lakes, or marshes, but whose stalks and flower heads grow up above the water surface. Examples of emergent plants include cattails, bulrushes, and some rushes and sedges.

Riparian habitat refers to the greenbelt of vegetation surrounding wetlands, rivers and streams.

Snags are standing dead trees.

Northern Flicker
T. Godin

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	Comments
Bitterns, Cranes, and Herons					
American Bittern *Botaurus lentiginosus* (Blue List)	All	Uncommon	Wetlands	Emergent vegetation Shallow, calm water (nesting)	Prefers cattail marshes; builds nests on water amongst emergent vegetation; forages along shoreline for insects, fish, amphibians, and voles; rarely seen, but its booming *pump-er-lunk* call resembling an old water pump is a characteristic sound of many wetlands
Sandhill Crane *Grus canadensis* (Blue List)	All	Common	Grasslands Wetlands		Nests mainly in sedge wetlands that are partially surrounded by coniferous forests; roosts in shallow wetlands during migration; forages in grasslands, agricultural fields, and wetlands for insects, amphibians, voles, and small birds; often heard calling high in the air or seen foraging in large flocks during migration
Great Blue Heron *Ardea herodias* (Blue List)	All	Uncommon	Rivers/streams Wetlands	Mature trees (nesting)	Nests in colonies in mature forests on the banks of slow-moving rivers or marshy lakes; forages in wetlands for fish, amphibians, and voles
Blackbirds, Meadowlarks, and Orioles					
Brewer's Blackbird *Euphagus cyanocephalus*	All	Common	Grasslands	Brush/shrubs Trees (nesting)	Nests near agricultural fields; nests on the ground, or amongst foliage or on branches of shrubs/ trees; often nests in small colonies; forages on the ground in open country for insects and seeds
Red-winged Blackbird *Agelaius phoeniceus*	All	Common	Wetlands	Emergent vegetation (nesting)	Attaches nests to tops of stems of emergent plants such as cattails; forages in wetlands and fields for insects and seeds; often comes to seed feeders, especially those offering sunflower seeds or cracked corn
Yellow-headed Blackbird *Xanthocephalus xanthocephalus*	All	Common	Wetlands	Emergent vegetation (nesting)	Attaches nests to tops of stems of emergent plants such as cattails; forages in wetlands and fields for insects and seeds
Brown-headed Cowbird *Molothrus ater*	All	Common	Forests - edges Grasslands		Does not build a nest, lays its eggs in the nest of other birds; nestlings are reared by the foster parents; often seen foraging on the ground around grazing livestock; eats insects and seeds; will come to seed feeders
Western Meadowlark *Sturnella neglecta*	Southern Central Interior	Common	Grasslands	Tall, dense grass (nesting)	Nests on ground, and weaves long grass into a canopy over the nest; uses shrubs and trees for singing posts; eats insects and seeds
Bullock's Oriole *Icterus bullockii*	Southern Central Interior	Common	Forests - edges Forests - open Riparian habitat		Nests and forages in deciduous woodlands and riparian habitats; builds sock-like nests that hang from tree branches
Chickadees , Creepers, and Nuthatches					
Black-capped Chickadee *Poecile atricapillus*	All	Common	Gardens Forests - open Riparian habitat	Deciduous trees, Snags, Tree cavities (nesting)	Excavates own cavities in soft or rotting wood, or uses woodpecker holes; also uses nest boxes; more common at lower elevations than Boreal or Mountain Chickadees; eats seeds and insects; common at seed feeders; prefers small black oil sunflower seeds to larger striped variety

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	How to Attract: Comments
Boreal Chickadee *Poecile hudsonicus*	All	Uncommon	Forests	Snags (nesting)	Excavates own cavities; eats seeds and insects
Mountain Chickadee *Poecile gambeli*	All	Common	Forests Riparian habitat	Deciduous trees Snags Tree cavities (nesting)	Excavates own cavities in soft or rotting wood, or uses woodpecker holes; also uses nest boxes; eats seeds and insects; will use seed feeders; prefers small black oil sunflower seeds to larger striped variety
Brown Creeper *Certhia americana*	All	Uncommon	Forests	Coniferous trees Snags Tree cavities (nesting)	Nests primarily under loose tree bark; occasionally in tree cavities; will use special nest boxes that mimic loose bark slabs; often seen gleaning insects off tree trunks by moving in upward circles around the trunk; will also come to suet feeders
Red-breasted Nuthatch *Sitta canadensis*	All	Common	Forests	Deciduous trees Snags Tree cavities (nesting)	Excavates own cavities in soft or rotting wood, or uses woodpecker holes; also uses nest boxes, but not as often as chickadees; gleans insects off tree trunks by moving head-down along the trunk; will also come to seed feeders
Coots					
American Coot *Fulica americana*	All	Common	Wetlands	Emergent vegetation (nesting)	Builds floating nests or anchors nests to emergent vegetation. Eats aquatic plants and invertebrates
Ducks					
The 28 species of ducks that occur in the Central Interior can generally be attracted to properties that have healthy wetlands with abundant emergent/submergent vegetation, nearby trees with nesting cavities, and good vegetation cover in adjacent upland areas.					
Bufflehead *Bucephala albeola*	All	Common	Forests - open Wetlands	Tree cavities (nesting)	Nests in open woodlands surrounding wetlands; will use nest boxes; eats aquatic invertebrates
Wood Duck *Aix sponsa*	Southern Central Interior	Rare Wetlands	Forests Rivers/streams	Tree cavities (nesting)	Nests in deciduous woodlands near wetlands and slow moving rivers; will use nest boxes
Barrow's Goldeneye *Bucephala islandica*	All	Common	Forests Wetlands	Tree cavities (nesting)	Nests in woodlands surrounding wetlands; will use nest boxes; eats aquatic invertebrates
Common Goldeneye *Bucephala clangula*	All	Uncommon	Forests Rivers/streams Wetlands	Tree cavities (nesting)	Nests in woodlands surrounding wetlands; will use nest boxes; Eats aquatic invertebrates
Mallard *Anas platyrhynchos*	All	Common	Wetlands	Ponds > 10 metres in diameter surrounded by abundant vegetation (nesting)	Found in a variety of habitats from ponds and riparian woodlands to city parks and golf courses; nests usually built on the ground and well concealed by vegetation; occasionally nests are built amongst emergent vegetation; will use nest platforms
Common Merganser *Mergus merganser*	All	Common	Forests - edges Rivers/stream	Tree cavities (nesting)	Nests on ground or in tree cavities along forested shorelines; will use nest boxes; eats fish
Hooded Merganser *Lophodytes cucullatus*	All	Uncommon	Forests Rivers/streams Wetlands	Tree cavities (nesting)	Nests in woodlands surrounding wetlands; will use nest boxes; eats small fish and aquatic invertebrates

			How to Attract		
Name Common, Scientific	**Distribution**	**Abundance**	**General Habitat**	**Key Habitat Components**	**Comments**
FINCHES					
Red Crossbill *Loxia curvirostra*	All	Common	Forests	Coniferous trees (nesting)	Usually builds nest up high and well out on a tree branch; eats conifer seeds and insects; movements of flocks often dependent on abundance of cone crops; is attracted to bird baths and small ponds
White-winged Crossbill *Loxia leucoptera*	All	Common	Forests Forests - edges	Coniferous trees) (nesting	Nests are built on tree branches and are well-hidden by foliage; eats conifer seeds and insects; movements of flocks often dependent on abundance of cone crops; most common at higher elevations
Cassin's Finch *Carpodacus cassinii*	Southern Central Interior	Common	Forests - open	Coniferous trees (nesting)	Usually builds nest well out on a tree branch; eats seeds, insects, and berries; is attracted to seed feeders offering black oil sunflower seeds
House Finch *Carpodacus mexicanus*	Southern Central Interior	Common	Gardens	Brush/shrubs Trees (nesting)	Also uses nest boxes; eats seeds, insects, and fruits; is attracted to seed feeders offering black oil sunflower seeds
Evening Grosbeak *Coccothraustes vespertinus*	All	Common	Forests Gardens	Trees (nesting)	Nests are usually built high up in trees and are well concealed by foliage; forages on large seeds of trees such as maples; will come to seed feeders offering sunflower seeds; also eats insects
Pine Grosbeak *Pinicola enucleator*	All	Common	Forests - edges Forests - open	Coniferous trees (nesting)	Eats seeds and berries; attracted to berry-producing plants
Common Redpoll *Carduelis flammea*	All	Common	Forests - open Gardens Grasslands		Found throughout the area in winter; forages for small seeds of trees such as alder and birch; is attracted to seed feeders, especially those offering niger "thistle" seeds.
Pine Siskin *Carduelis pinus*	All	Common	Forests Gardens	Coniferous trees (nesting)	Nests are usually built on tree branches and are well concealed by foliage; forages for small seeds of trees such as alder and birch; common at seed feeders year-round, especially those offering niger "thistle" seeds or black oil sunflower seeds
FLYCATCHERS					
The 11 species of flycatchers that occur in the Central Interior are generally quite drab coloured and difficult to tell apart except for their calls. These birds are named for their characteristic way of catching flying insects. When foraging, flycatchers dart out from a perch at a top of a shrub or tree, snap up an insect out of the air, and dart back to their perch.					
Eastern Kingbird *Tyrannus tyrannus*	All	Common	Forests - edges Wetlands	Deciduous trees Shrubs (nesting)	Prefers sites with dead shrubs and trees at forest/wetland edge; also nests on utility poles and buildings; will use nest boxes; eats flying insects in summer, berries in late summer and fall
Say's Phoebe *Sayornis saya*	All	Uncommon	Forests - open Grasslands	Buildings, caves, cliffs, rock crevices soil banks,(nesting)	Also nests on nest platforms; will re-use nest sites for many years; eats insects
GEESE					
Canada Goose *Branta canadensis*	All	Common	Rivers/streams Wetlands		Nests in a variety of habitats close to permanent water; nests on ground, on muskrat and beaver lodges, in raptor nests, and on nest platforms; often forages in agricultural fields

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	How to Attract: Comments
GREBES					
Prime nesting habitat for grebes consists of wetlands with abundant emergent vegetation, healthy fish and other prey populations, and stable water levels. Breeding sites should also offer some protection from wind and wave action, and should be relatively free from human disturbances.					
Eared Grebe *Podiceps nigricollis*	All	Common	Wetlands	Calm water, Emergent vegetation (nesting)	Nests in colonies, usually on water bodies > 4 ha in size; nests amongst emergent/submergent vegetation; eats aquatic insects and fish
Horned Grebe *Podiceps auritus*	All	Common	Wetlands	Calm water, Emergent vegetation (nesting)	Builds nests on water and usually attaches them to stems of emergent vegetation; will use nest platforms; eats aquatic insects and fish
Pied-billed Grebe *Podilymbus podiceps*	All	Common	Wetlands	Calm water, Emergent vegetation (nesting)	Builds nests on water and usually attaches them to stems of emergent vegetation; eats aquatic insects and fish
Red-necked Grebe *Podiceps grisegena*	All	Common	Wetlands	Calm water, Emergent vegetation (nesting)	Builds nests on water and usually attaches them to stems of emergent vegetation; also builds nests in open water over submerged aquatic plants; eats aquatic insects and fish
Western Grebe *Aechmophorus occidentalis* (Red List)	All	Uncommon	Wetlands	Calm water, Emergent vegetation (nesting)	Found on large lakes and backwaters of rivers; only one breeding colony has been found in the region, but it has not been used for many years; apparently highly susceptible to human disturbances around its breeding colonies
HUMMINGBIRDS					
Calliope Hummingbird *Stellula calliope*	All	Common	Forests - edges Forests - open Gardens	Nectar-producing plants (feeding)	Nests in shrubs and trees; attracted to gardens by nectar plants and hummingbird feeders; also eats insects and is attracted to sap at sapsucker wells
Rufous Hummingbird *Selasphorus rufus*	All	Common	Forests - edges Forests - open Gardens	Nectar-producing plants (feeding)	Nests in shrubs and trees; attracted to gardens by nectar plants and hummingbird feeders; also eats insects and is attracted to sap at sapsucker wells
JAYS AND MAGPIES					
Jays are easily attracted to suet feeders and to platform feeders offering sunflower seeds or peanuts. To prevent these birds from rapidly cleaning out a feeding station, wrap chicken wire mesh around the feeder. This will prevent access to jays, but will still allow smaller birds to feed at the station.					
Gray Jay *Perisoreus canadensis*	All	Common	Forests	Coniferous trees (nesting)	Nests mainly in coniferous trees on the forest edge; frequents sites where human food is discarded; will use seed and suet feeders
Steller's Jay *Cyanocitta stelleri*	All	Common	Forests	Coniferous trees (nesting)	Found in coniferous and mixed forests, usually at lower elevations than the Gray Jay; common at seed and suet feeders

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	How to Attract: Comments
Black-billed Magpie *Pica pica*	All	Common	Forests - open Grasslands Riparian habitat	Brush/shrubs Coniferous trees Deciduous trees (nesting)	Usually found at lower elevations; builds nests amongst dense growth of twig and branches, usually near the tops of shrubs and trees; forages in open country for insects and carrion
Kingfishers					
Belted Kingfisher *Ceryle alcyon*	All	Common Wetlands	Rivers/streams	Soil banks (nesting) Shrubs/Trees/Snags (roosting)	Excavates its own burrows in sand or clay banks near water; catches small fish by diving from the air or from elevated perches near water
Larks					
Horned Lark *Eremophila alpestris*	All	Common	Grasslands Tundra	Short, patchy vegetation cover (nesting)	Nests on ground, usually beside a clump of grass; uses bare soil/dirt roads for roosting and dust bathing; uses rocks for perching and for singing posts; eats insects
Loons					
Common Loon *Gavia immer*	All	Common	Wetlands	Fish-bearing lakes (feeding) Emergent vegetation (nesting)	also nests on shore, on logs, or on muskrat pushups; will use the same lakes for many years, even though other suitable lakes may be present
Nighthawks					
Common Nighthawk *Chordeiles minor*	All	Common	Forests - open	Short, patchy vegetation cover (nesting)	Nests on ground, often on gravel, bare soils, or forest litter; its loud, nasal *peernt* call is commonly heard during the summer as it forages in the air for flying insects; also makes a loud, deep *voo-oom* sound as it dives towards the ground during its dramatic courtship displays
Ospreys, Eagles, Hawks, and Falcons					
These species may be attracted to larger properties by retaining snags and large trees, and by providing suitable habitat for prey species.					
Bald Eagle *Haliaeetus leucocephalus*	All	Common	Forests Rivers/streams Wetlands	Mature trees, Snags (nesting)	Needs large trees or snags to support its large stick nests; eats fish and medium-sized mammals
Red-tailed Hawk *Buteo jamaicensis*	All	Common	Forests - edges Forests - open Grasslands	Mature trees (nesting)	Nests in large coniferous or deciduous trees; eats small and medium-sized mammals, and birds
American Kestrel *Falco sparverius*	All	Common	Forests - open Grasslands Rivers/streams Wetlands	Tree cavities (nesting)	Will use nest boxes (7 cm hole); forages in opencountry for insects and small mammals
Osprey *Pandion haliaetus*	All	Common	Forests Rivers/streams Wetlands	Snags (nesting)	Will use nest platforms specifically designed for Ospreys; eats fish
Owls					
Most owls do not build their own nests, so retention of snags and large trees, or provision of nest boxes or platforms in appropriate habitats may encourage owls to nest on larger properties.					
Flammulated Owl *Otus flammeolus* (Blue List)	Southern Central Interior	Uncommon	Forests - open Grasslands	Snags Tree cavities (nesting)	Nests in mature, open forests near the crest of steep hillsides with open grasslands below; will use nest boxes (7 cm hole); eats mainly moths and other insects

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	How to Attract: Comments
Great Gray Owl *Strix nebulosa*	All	Uncommon	Forests	Mature trees (nesting)	Nests in forests and woodlands often near water; nests in abandoned hawk nests or witches brooms; will use nest platforms; eats small and medium-sized mammals
Great Horned Owl *Bubo virginianus*	All	Common	Forests	Snags Tree cavities(nesting)	Also nests in abandoned crow or hawk nests; will use nest platforms; eats small and medium-sized mammals, and birds
Long-eared Owl *Asio otus*	All	Uncommon	Forests - open		Nests primarily in deciduous woodlands; uses abandoned hawk, crow, or magpie nests; forages in grasslands, meadows, and open forests for voles and other small mammals, and birds
Northern Saw-whet Owl *Aegolius acadicus*	All	Common	Forests	Tree cavities (nesting)	Will use nest boxes (7 cm hole); eats insects and small mammals
Short-eared Owl *Asio flammeus* (Blue List)	All	Uncommon	Grasslands Meadows		Nests and forages in open country; often nests in shrubby grassy fields with grass height 25-90 cm; eats mainly small mammals
Shorebirds					
Long-billed Curlew *Numenius americanus* (Blue List)	Southern Central Interior	Common	Grasslands	Short, patchy vegetation cover (nesting)	Nests on the ground in expansive, open grasslands on level terrain; forages in grasslands and irrigated agricultural fields for earthworms and insects
Killdeer *Charadrius vociferus*	All	Common	Grasslands Rivers/streams	Short, patchy vegetation cover (nesting) Wetlands	Nest sites may or may not be near water; nests on ground often in areas with bare soil or gravelly substrates; forages for insects in grasslands, agricultural fields, and wetlands
Spotted Sandpiper *Actitis macularia*	All	Common	Rivers/streams Wetlands	Patchy vegetation cover (nesting)	Nests on the ground in open areas on the edge of water bodies; nests usually partially concealed by overhanging vegetation; forages along shorelines for insects
Common Snipe *Gallinago gallinago*	All	Common	Meadows Wetlands		Nests on the ground, often in hollows well concealed by vegetation; eats insects, mollusks, earthworms, amphibians, and grass seeds
Shrikes					
Northern Shrike *Lanius excubitor*	All	Uncommon	Grasslands Riparian habitat		Often perches on tops of trees or snags; forages in open country for voles, small birds, and insects; sometimes impales prey on barbed wire or thorny bushes; absent from the region during summer
Sparrows and Juncos					
Many species of sparrows are attracted to backyard seed feeders, especially if millet is offered. Most sparrows are ground feeders, and so, are commonly found cleaning up seeds that have been scattered below feeders.					
Dark-eyed Junco *Junco hyemalis*	All	Common	Forests - edges Forests - open Gardens		Nests on or near ground usually under overhanging vegetation; eats seeds and insects; in winter, commonly forages under seed feeders for spilled millet and other seeds

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	Comments
Chipping Sparrow *Spizella passerina*	All	Common	Forests - edges Forests - open	Brush/shrubs Trees (nesting)	Builds nests amongst foliage, or on a fork in a branch; forages on the ground for seeds and insects.
Savannah Sparrow *Passerculus sandwichensis*	All	Common	Grasslands Meadows	Tall, dense grass (nesting) Wetlands	Nests on ground, usually under some overhanging vegetation; uses shrubs, trees, and fences for singing posts; eats insects and seeds
Song Sparrow *Melospiza melodia*	All	Common	Forests -edges Riparian habitat		Nests on ground, usually under overhanging vegetation, or in shrubs or trees; eats insects, seeds, and berries; sometimes forages under seed feeders
Vesper Sparrow *Pooecetes gramineus*	All	Common	Forests - open Grasslands		Nests on ground, usually beside a grass clump; uses shrubs, trees, and fences for singing posts; eats insects, and seeds
Swallows					
Ice-free ponds and lakes with abundant insect life are important spring foraging sites for swallows. In summer, swallows forage primarily in open country, grasslands, agricultural fields, and wetlands.					
Bank Swallow *Riparia riparia*	All	Common		Cliffs Soil banks (nesting)	Excavates its own burrows in cliffs and in cutbanks along streams, roads, and gravel pits; nests in colonies; forages over fields, meadows, and cliffs for insects
Barn Swallow *Hirundo rustica*	All	Common	Gardens Grasslands Wetlands	Buildings (nesting)	Builds bowl-shaped mud nests under eaves of buildings; sometimes nests in small colonies; will use nest platforms placed under the eaves of buildings; eats insects
Cliff Swallow *Petrochelidon pyrrhonota*	All	Common		Buildings Cliffs (nesting)	Builds ovoid mud nests often under the eaves of buildings; often forms large colonies; forages in nearby open habitats for insects
Northern Rough-winged Swallow *Stelgidopteryx serripennis*	All	Common		Cliffs Soil banks (nesting)	Nests in burrows created by other birds; small colonies can be found in cliffs and in cutbanks along streams, roads, and gravel pits; forages over fields, meadows, and cliffs for insects
Tree Swallow *Tachycineta bicolor*	All	Common	Grasslands Riparian habitat	Tree cavities (nesting)	Readily uses nest boxes, especially those designed for Mountain Bluebirds; also nests in post, poles, and buildings; eats insects
Violet-green Swallow *Tachycineta thalassina*	All	Common	Gardens Meadows Riparian habitat	Buildings Cliffs Tree cavities (nesting)	Breeds most commonly around human-associated habitats; will use nest boxes; eats insects
Tanagers					
Western Tanager *Piranga ludoviciana*	All	Common	Forests Gardens	Coniferous trees (nesting)	Usually builds nests well out on a tree branch; eats insects and berries; is often attracted to berry-producing plants
Terns					
Black Tern *Chlidonias niger*	All	Common (but in localized areas)	Wetlands	Shallow, calm water Emergent vegetation (nesting)	Nests in colonies; nests are anchored to emergent vegetation or are built on floating water logs or debris, or on lodges; eats insects, and small mollusks

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	How to Attract: Comments
THRUSHES					
Mountain Bluebird *Sialia currucoides*	All	Common	Forests - open Grasslands Meadows	Tree cavities (nesting)	Commonly uses nest boxes; eats insects
American Robin *Turdus migratorius*	All	Common	Forests - edges Forests - open Gardens	Brush/shrubs Buildings Trees (nesting)	Also nests on nest platforms placed under building eaves; eats insects and earthworms in spring and summer; also eats fruit and berries in fall; is attracted to a variety of berry-producing plants
Townsend's Solitaire *Myadestes townsendi*	All	Common	Forests - open	Soil banks (nesting)	Nests in crevices in soil banks, often along roadways; nest sites are usually under overhanging roots or vegetation; eats seeds, insects, and rosehips; is also attracted to berry-producing plants such as juniper, snowberry, mountain ash, and cotoneaster
Swainson's Thrush *Catharus ustulatus*	All	Common	Forests Riparian habitat	Dense brush/shrubs Snags (nesting)	Also nests in trees; eats insects and berries; is attracted to berry-producing plants
Varied Thrush *Ixoreus naevius*	All	Uncommon	Forests	Brush/shrubs, Trees (nesting)	Nests most often in coniferous trees; feeds on ground, sometimes on the "fall-out" from seed and suet feeders; also eats insects, seeds, and berries; is attracted to berry-producing plants
Veery *Catharus fuscescens*	Southern Interior Central	Common	Riparian habitat	Dense brush/shrubs Tree stumps (nesting)	Nests on or near the ground in dense shrubbery; also nests in trees and stumps; eats insects and berries
VIREOS					
Three species of vireos occur in the Central Interior: the Solitary Vireo, Warbling Vireo, and Red-eyed Vireo. These are small, drab birds that are more commonly heard than seen. Their songs are loud and persistent. Vireos are uncommon to fairly common residents of mixed forests and riparian woodlands. They nest in trees by building cup-shaped nests and suspending them between twigs. Vireos feed primarily on insects, but will eat berries in late summer.					
WARBLERS					
Warblers are small, active, accomplished spring songsters. Many are boldly patterned in black and white, while others are brightly coloured yellow and are often referred to as wild canaries. Warblers are found in a variety of habitats including woodlands and riparian thickets. They forage for insects from near ground level to treetops, and nest in trees or dense shrubbery. Some of the most common species in the Central Interior - the Yellow-rumped Warbler, the Yellow Warbler, the Orange-crowned Warbler, the Wilson's Warbler, and the Common Yellowthroat are listed below.					
Orange-crowned Warbler *Vermivora celata*	All	Common	Forests	Brush/shrubs (nesting)	Nests on, or near the ground, often in dense willow thickets; eats insects
Wilson's Warbler *Wilsonia pusilla*	All	Common	Forests Riparian habitat	Brush/shrubs (nesting)	Nests on, or near the ground at the base of a shrub or tree, or in a grassy tussock; eats insects
Yellow Warbler *Dendroica petechia*	All	Common	Gardens Riparian habitat	Brush/shrubs (nesting)	Builds nest amongst the branches of shrubs or trees, often in a twig fork; eats insects
Yellow-rumped Warbler *Dendroica coronata*	All	Common	Forests - edges Forests - open	Coniferous trees (nesting)	Nests amongst tree branches, usually in coniferous trees; eats insects
Common Yellowthroat *Geothlypis trichas*	All	Common	Riparian habitat	Brush/shrubs (nesting)	Nests on, or near the ground amongst cattails, rushes, or shrubby vegetation; flits about wren-like while gleaning insects off vegetation; its *witchity-witchity-witchity* song resembles a small sewing machine.

Name Common, Scientific	Distribution	Abundance	How to Attract: General Habitat	How to Attract: Key Habitat Components	Comments
WAXWINGS					
Bohemian Waxwing *Bombycilla garrulus*	All	Common	Forests - open Gardens Riparian habitat	Coniferous trees (nesting)	Nests mainly on forest edge; commonly seen foraging in large flocks amongst berry-producing plants such as mountain ash, juniper, and kinnikinnick; also eats insects, buds of trembling aspen trees, and rosehips
Cedar Waxwing *Bombycilla cedrorum*	All	Common	Forests - edges Gardens Riparian habitat	Brush/shrubs Deciduous trees (nesting)	Generally breeds at lower elevations than the Bohemian Waxwing; forages in flocks amongst berry-producing plants such as elderberry, hawthorn, mountain ash, soopolallie, and saskatoon; also eats insects and berries
WOODPECKERS					
Woodpeckers excavate holes in trees to capture wood-boring insects, and thus, are important control agents for many forest insect pests. Woodpecker populations have been monitored in forest stands as a means of tracking potential outbreaks of forest insect pests. Woodpeckers also excavate nesting and roosting cavities, which are used later by a variety of other birds and mammals. These birds are attracted to suet feeders, especially if the suet is placed in holes in hanging logs.					
Northern Flicker *Colaptes auratus*	All	Common	Forests Grasslands	Coniferous trees Deciduous trees (nesting) Snags	Found in variety of habitats including mixed and riparian woodlands, grasslands with aspen groves or isolated large trees, and gardens; will use nest boxes; eats insects, berries and fruit; will come to seed and suet feeders
Red-breasted Sapsucker *Sphyrapicus ruber*	All	Uncommon	Forests Forests - edges Snags	Deciduous trees (feeding, nesting) (nesting)	Excavates cavities most often in dead deciduous trees; often nests near edge of coniferous or deciduous forests
Red-naped Sapsucker *Sphyrapicus nuchalis*	Southern Central Interior	Common	Forests - edges Forests - open	Deciduous trees (feeding, nesting)	Commonly found in deciduous or mixed woodlands associated with open forests and grasslands; usually excavates cavities in living trees at the forest edge; drills rows of small holes in deciduous trees - feeds on sap and insects attrached to the sap wells
Downy Woodpecker *Picoides pubescens*	All	Common	Forests Forests - edges	Deciduous trees Snags (nesting)	Found in deciduous and mixed woodlands, and edges of coniferous forests; excavates nest cavities most often in dead deciduous trees; eats insects, berries, seeds, and sap from sapsucker wells; is attracted to suet feeders
Hairy Woodpecker *Picoides villosus*	All	Common	Forests Forests - edges	Coniferous trees Deciduous trees Snags (nesting)	Found in deciduous and mixed woodlands, and edges of coniferous forests; excavates nest cavities most often in deciduous trees; eats insects, berries, seeds, and sap from sapsucker wells; is attracted to suet feeders
Lewis's Woodpecker *Melanerpes lewis* (Blue List)	Southern Central Interior	Uncommon	Forests - open Grasslands	Mature trees Snags, Tree cavities (nesting)	Excavates cavities or uses existing tree cavities for nesting; commonly forages in the air for flying insects
Pileated Woodpecker *Dryocopus pileatus*	All	Uncommon	Forests	Coniferous trees Deciduous trees (nesting) Snags (feeding, nesting)	Excavates nest cavities most often in large, living, deciduous trees; also excavates large holes while foraging for carpenter ants and other wood-boring insects in dead and down trees; will also eat berries in summer and fall; is attracted to suet feeders
Three-toed Woodpecker *Picoides tridactylus*	All	Uncommon	Forests	Coniferous trees Deciduous trees Snags (nesting)	Occupies high elevation coniferous forests near openings around wetlands or burned sites; excavates cavities most often in living and dead coniferous trees; eats insects

			How to Attract		
Name Common, Scientific	**Distribution**	**Abundance**	**General Habitat**	**Key Habitat Components**	**Comments**
Wrens					
There are 4 species of wrens in the Central Interior, but only the Marsh Wren is common. House Wrens (rare) and Winter Wrens (uncommon) will occasionally use nest boxes, but neither species visit feeders very often.					
Marsh Wren *Cistothorus palustris*	Southern Central Interior	Common	Wetlands	Emergent vegetation (nesting)	Found primarily in cattail, bulrush, or sedge wetlands; weaves globular nests and attaches them near the tops of emergent plants; builds several dummy nests, but uses only one; eats insects
Introduced Species					
Starlings and House Sparrows were introduced from Eurasia. They have become most common around urban centres, but can also be found in agricultural areas. Starlings also frequent grassland habitats. Both are considered pest species by most bird watchers and wildlife specialists. Starlings and House Sparrows are aggressive bullies around backyard feeders and nest boxes. Both species nest in cavities and often drive native cavity-nesters away, or evict them from their nest sites. Declines in populations of some species of native cavity-nesting birds have been attributed to this kind of competition with Starlings and House Sparrows. Both of these species can be discouraged from using backyard nest boxes by using appropriate entrance hole shapes and sizes (see Provincial Guide).					

TABLE 6: MAMMALS

Many mammals lead secretive or mainly nocturnal lives, and so are often not encountered. The more well known mammals are those that are large, such as bears, deer, and moose, or are diurnal such as chipmunks and squirrels. Some species are unwelcome around homes and gardens. (See the section "When you don't want to share your living space with wildlife" under " Putting it all together in Your Yard" for suggestions on how to live in harmony with these species.) Similarly, Nagorsen and Brigham, 1995. (See the references in the Resource Booklet) provide tips on how to discourage bats from roosting in occupied buildings.

How to use this table:

Only the most well known or most common mammal species in the Central Interior are listed.

Distribution:

lists the ecosections where the species is found, "All" signifies that the species is widely distributed in the Central Interior. Please refer to the Ecosection map and table.

How to attract:

General Habitat:

lists the general habitat types where the species is found. Wherever possible, these habitat types have been made consistent with those in the plant tables for ease of cross-referencing. Compare the type(s) of habitat on your property, or the types you wish to create, with those used by individual species to determine what types of mammals you may expect to attract to your property.

Key Habitat Components:

are specific habitat features within the general habitat types that are important to the species' survival. These can include features such as coarse woody debris or tree cavities that provide protective cover from predators or from the elements. You will have a greater chance of attracting certain mammals to your property if you retain or provide these types of features within the general habitat types. For example, you may have the appropriate forest habitat for fishers or marten, but without snags or coarse woody debris for den sites, these species are unlikely to be present.

Comments:

provide additional information on the species listed. Some words have been bold-faced to provide a quick reference for additional features (e.g. nest boxes) that you can add to your yard to attract certain mammals.

Definitions:

Coarse woody debris is a term given to fallen trees, rotting logs, and broken tree branches and twigs that are lying on the ground.

Riparian habitat refers to the greenbelt of vegetation surrounding wetlands, rivers, and streams.

Snags are standing dead trees.

Yellow-Pine Chipmunk
T. Godin

			How to Attract		
Name **Common, Scientific**	**Distribution**	**Abundance**	**General Habitat**	**Key Habitat Components**	**Comments**
SHREWS					
Common Shrew *Sorex cinereus* Dusky Shrew *Sorex monticolus* Pygmy Shrew *Sorex hoyi* Vagrant Shrew *Sorex vagrans* Water Shrew *Sorex palustris*	All (except *S.vagrans*- only found in the Southern Central Interior)	Common	Forests Grasslands Meadows Riparian habitats	Coarse woody debris Leaf piles Rock piles	Small mouse-like mammals with pointed snouts and soft, velvety fur; often difficult to find because they are small and largely nocturnal; eats insects, earthworms, water salamanders, and small mice; in some areas, are known to be an important control agent for forest insect pests
BATS					
Big Brown Bat *Eptesicus fuscus*	Southern Central Interior	Common	Forests Grasslands	Buildings Rock crevices Trees (roosting)	Often roosts in large colonies; forages over water, forests, along roads, and under street lamps; eats insects - beetles form a large part of diet
Hoary Bat *Lasiurus cinereus*	Fraser River Basin, Cariboo Basin	Rare	Forests Grasslands	Trees (roosting)	Roosts alone in tree cavities or amongst tree branches; hunts over fields and at tree height in forest clearings; often feed under outdoor lights; eats mainly large insects - large moths, beetles, dragonflies
Silver-haired Bat *Lasionycteris noctivagans*	All	Uncommon	Forests Grasslands	Trees (roosting)	Roosts alone or in small numbers under bark and in crevices and cavities of trees; eats mainly small insects
Spotted Bat *Euderma maculatum* (Blue list)	Fraser River Basin, Cariboo Basin	Rare	Cliffs Forests - open Grasslands	Rock crevices (roosting)	Usually roosts alone in crevices in steep cliffs and hoodoos; echolocation clicks (*"tck, tck, tick…"*) are audible to the human ear; feed mainly on medium sized moths
Townsend's Big-eared Bat *Corynorhinus townsendii* (Blue list)	Fraser River Basin, Cariboo Basin	Rare	Cliffs Forests - open Grasslands	Buildings Caves Rock crevices Trees (roosting)	Usually forages alone; roosts alone or in small groups
Fringed Myotis *Myotis thysanodes* (Blue list)	Fraser River Basin, Cariboo Basin	Rare	Forests - open Grasslands Rivers/streams	Buildings Caves Rock crevices (roosting)	Forages in bushy riparian areas; catches insects in the air or gleans them off vegetation
Little Brown Myotis *Myotis lucifugus*	All	Common	Forests Grasslands	Buildings Caves Rock crevices Trees (roosting)	Occupies a wide range of habitat from arid grasslands to montane forests; hunts over open areas, forests, rock bluffs, and water; captures most insects in the air and eats them while flying
Long-legged Myotis *Myotis volans*	All	Common	Cliffs Forests Grasslands	Buildings Rock crevices Trees (roosting)	Occupies a wide range of habitat from arid grasslands to montane forests; often forms large roosting colonies; may forage in large numbers; hunts over water, in open areas, in forests, above forest canopy, and along cliff faces
Western Small-footed Myotis *Myotis ciliolabrum* (Blue list)	Fraser River Basin, Cariboo Basin	Rare	Cliffs Grasslands	Buildings Rock crevices (roosting)	Hibernates alone; hunts over rocky bluffs and sagebrush sites for small insects (caddisflies, mayflies and midges) that emerge form the water
Western Long-eared Myotis *Myotis evotis*	All	Common Rivers/streams	Forests - open Grasslands Rock crevices Trees (roosting)	Buildings Caves	Also inhabits high mountain forests; forages in riparian areas; catches insects in the air or gleans them off vegetation or off the ground
Yuma Myotis *Myotis yumanensis*	Fraser River Basin, Cariboo Basin	Common	Forests - open Grasslands Rivers/streams	Buildings Caves Rock crevices Trees (roosting)	Is the most common bat to hunt over water; maternal colonies may include hundreds of individuals

Name Common, Scientific	Distribution	Abundance	How to Attract General Habitat	Key Habitat Components	Comments
Hares and Pikas					
Snowshoe Hare *Lepus americanus*	All	Common	Forests	Brush/shrubs Coarse woody debris Tree stumps (cover)	In summer, eats grasses, forbs, and new leaves of shrubs and tree saplings; in winter, eats buds, bark, twigs, and evergreen leaves of shrubs and tree saplings
Common Pika *Ochotona princeps*	Southern Central Interior	Uncommon	Cliffs Rocky slopes	Rock piles (cover)	Uses prominent rocks as lookout posts; eats grasses, forbs, and new shoots of shrubs; stores haystacks of clipped vegetation among rocks
Rodents **Mice and Voles**					
Deer Mouse *Peromyscus maniculatus*	All	Common		Coarse woody debris Rock piles Tree cavities/stumps (cover)	Occupies almost every dry-land habitat; eats seeds, shrub and tree buds, fungi, and insects; caches food under rocks and exposed tree roots, and in tree cavities; may carry hantavirus, therefore caution should be taken in cleaning up droppings in buildings occupied by Deer Mice
Long-tailed Vole *Microtus longicaudus* Meadow Vole *Microtus pennsylvanicus* Montane Vole *Microtus montanus*	All (except *M. montanus* - only found in the Southern Central Interior)	Common	Forests - edges Forests - open Grasslands Meadows	Coarse woody debris Underground burrows (cover).	Often mistaken for mice, but have shorter tails and small ears almost concealed by long fur; groups of ground holes connected by narrow trails through the grass and clipped vegetation and small piles of rice-sized pellets deposited on pathways indicate vole activity; primarily vegetarian, and will strip bark off shrubs and tree saplings; wrapping lower parts of plants with hardware cloth or metal flashing can help prevent vole damage; an important food source for many raptors and carnivorous mammals
Chipmunks and Squirrels					
Yellow-pine Chipmunk *Tamias amoenus*	All	Common	Forests - open	Coarse woody debris Tree cavities/stumps Underground burrows (cover)	Creates own underground burrows; eats fungi, berries, insects, and seeds of grasses, sedges and trees
Northern Flying Squirrel *Glaucomys sabrinus*	All	Common	Forests	Tree cavities (cover)	Also builds large twig and bark nests on tree branches; will use large nest boxes; eats seeds, lichens, berries, shrub and tree foliage, insects, bird eggs and nestlings; will use bird feeders at night
Red Squirrel *Tamiasciurus hudsonicus*	All	Common	Forests	Tree cavities Rock piles Underground burrows (cover)	Also uses large nest boxes or builds large leafy nests on tree branches; preferred food is conifer seeds; frequently uses bird feeders
Other Rodents					
Columbian Ground Squirrel ("Gopher") *Spermophilus columbianus*	Fraser River Basin, Cariboo Basin	Common	Grasslands	Underground burrows (denning)	Excavates large colonies of underground burrows in sites with loose soils; eats grasses, sedges, forbs, insects, mice and voles; an important prey species for many raptors and carnivorous mammals
Bushy-tailed Woodrat ("Packrat") *Neotoma cinerea*	All	Common	Cliffs Forests Rocky slopes	Buildings Caves Rock Crevices Tree Cavities (cover)	Builds bulky nests of sticks, foliage, and human artifacts; eats seeds, forbs, berries, fungi and insects

Name Common, Scientific	Distribution	Abundance	How to Attract General Habitat	Key Habitat Components	Comments
Yellow-bellied Marmot *Marmota flaviventris*	Fraser River Basin, Cariboo Basin	Common	Grasslands Rocky slopes	Rock piles Underground burrows (denning)	Found in rocky habitat associated with open grasslands; excavates underground burrows in loose soil beneath rock piles.; uses large rocks as sentinel posts; eats grasses sedges and forbs
Beaver *Castor canadensis*	All	Common	Rivers/stream Wetlands	Shrubs Trees (cover, food)	Builds dams and lodges from shrubs and trees growing near water bodies; beaver ponds are also important sites for water storage and soil erosion control; also create valuable wetland and wildlife habitats
Muskrat *Ondatra zibethicus*	All	Common	Rivers/streams Wetlands	Emergent vegetation (cover, food)	Builds houses in shallow water or in cattail bulrush stands, or burrows into banks along the shoreline; also builds tunnels and feeding platforms amongst cattails; eats emergent vegetation, amphibians and fish
Porcupine *Erethizon dorsatum*	All	Uncommon	Forests	Coarse woody debris Tree cavities Tree stumps (denning)	Summer diet consists of leaves of forbs, shrubs and trees; winter diet consists of tree bark, buds and twigs
Carnivores **Weasel-like Carnivores**					
Fisher *Martes pennanti* (Blue list)	All	Uncommon	Forests - edges Rivers/streams	Coarse woody debris Wildlife trees (denning)	Prime habitat is forest/meadow edges or forest riparian edges; also dens in holes in the ground or under the snow, in squirrel and raptor nests; feed mainly on snowshoe hares, squirrels, voles, and porcupines
Marten *Martes americana*	All	Uncommon	Forests	Coarse woody debris Rock piles Wildlife trees (denning)	Prefers mature coniferous or mixed forests; also dens in squirrel nests; feeds primarily on voles and mice, but also takes squirrels, hares, birds, plant matter, insects and carrion
Mink *Mustela vison*	All	Uncommon	Forests - edges Rivers/streams Wetlands	Tree stumps Underground burrows (denning)	Dens in riparian areas; occasionally digs its own burrow, but usually usurps bank burrows of muskrats or beavers; eats small to medium-sized mammals, fish and amphibians
River Otter *Lontra canadensis*	All	Uncommon	Rivers/streams Wetlands	Coarse woody debris Tree stumps (denning)	Also uses bank burrows of muskrats and beavers for denning; captures most food under water; eats mainly fish, insects, and amphibians; often makes "toboggan runs" down grassy, muddy, or snow-covered slopes
Least Weasel *Mustela nivalis* Long-tailed Weasel *Mustela frenata* Ermine *Mustela erminea*	All	Common	Forests Forests - edges Meadows Riparian habitats	Coarse woody debris Rock piles Tree stumps Underground burrows (denning)	Often usurps burrows of other mammals; feeds primarily on small mammals but also eats birds, insects, plant matter and amphibians
Large Carnivores					
Black Bear *Ursus americanus*	All	Common	Forests Grasslands Rivers/streams Wetlands	Caves Coarse woody debris Tree stumps (denning)	Eats plant matter (fruit, berries, roots, grasses, and sedges) insects, carrion, and mammals; can become habituated to feeding at garbage dumps or areas where garbage is improperly disposed; keep food wastes secured or indoors if possible; clean up windfalls from fruit orchards

			How to Attract		
Name Common, Scientific	**Distribution**	**Abundance**	**General Habitat**	**Key Habitat Components**	**Comments**
Bobcat *Lynx rufus*	All	Uncommon	Forests - open Rocky slopes Wetlands	Brush/shrubs Coarse woody debris Rock crevices Rock piles (denning)	Eats mainly hares and other rodents, but also takes birds, fish and insects
Cougar *Puma concolor*	All	Uncommon	Cliffs Forests Rocky slopes	Brush/shrubs Coarse woody debris Rock crevices Rock piles (denning)	Occupies canyons, coniferous forests, and mountain terrain; feeds mainly on large ungulates such as deer and bighorn sheep, but also eats other large mammals, porcupines, beavers, hares, mice, and birds; will also take household pets
Coyote *Canis latrans*	All	Common	Forests Grasslands	Brush/shrubs Coarse woody debris Rock piles (denning)	Found in a variety of habitats, but is most common in open grasslands and forests; feeds mainly on small mammals, but also eats birds, insects, carrion, vegetation and large mammals; will also take household pets
Red Fox *Vulpes vulpes*	All	Common	Forests - edges Forests - open Grasslands Wetlands	Gravelly or sandy soils (denning)	Prefers semi-open country; avoids dense forests; digs dens along, lakeshores or stream banks, in grasslands or along forest edges; may use abandoned dens of other mammals; eats small mammals birds, insects, and vegetation
Gray Wolf *Canis lupus*	All	Common	Forests	Caves Coarse woody debris Rock piles Tree stumps (denning)	Found in a variety of habitats, but is most common in wilderness forests and tundra habitats; feeds primarily on large ungulates such as deer, moose, and caribou, but also eats small mammals, birds, fish, and insects
Other Carnivores					
Badger *Taxidea taxus* (Blue List)	Fraser River Basin, Cariboo Basin	Rare	Forests - open Grasslands	Underground burrows (denning)	Found in semi-arid habitats; excavates underground burrows in loose soil; feed primarily on small-medium sized burrowing mammals such as ground squirrels, but also eats reptiles, insects, and birds and their eggs
Striped Skunk *Mephitis mephitis*	All	Uncommon	Forests - edges Forests - open	Coarse woody debris Rock piles Underground burrows (denning)	Prefers semi-open country such as agricultural lands, open forest edges, and brushy areas; generally avoids dense forests and wetlands; will nest under buildings; eats mainly insects, small mammals and plant matter
Ungulates					
Mule Deer *Odocoileus hemionus*	All	Common	Forests Grasslands	Multi-layered, uneven-aged coniferous forests with some trees >100 years old (winter range).	Spring/summer range habitats consist of grasslands and open forests; spring and summer foods are mainly grasses and forbs; winter diet consists of lichens, shrubs, and tree branches and twigs; often feed in agricultural fields
California Bighorn Sheep *Ovis canadensis californiana* (Blue List)	Fraser River Basin, Cariboo Basin	Uncommon	Cliffs Forests - open Grasslands Rocky slopes		Low elevation, wind-swept grasslands are used as winter and spring ranges; high-elevation, wind-swept ridges are also used as winter ranges; escape terrain includes talus slopes, steep rock bluffs and patches of forest; diet consists of grasses, forbs, shrubs, and trees; will feed in agricultural fields
Moose *Alces alces*	All	Common	Forest Meadows Wetlands		Eats aquatic vegetation and browses on shrubs and trees

WILDLIFE OBSERVATIONS

Date	Species	Observation

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