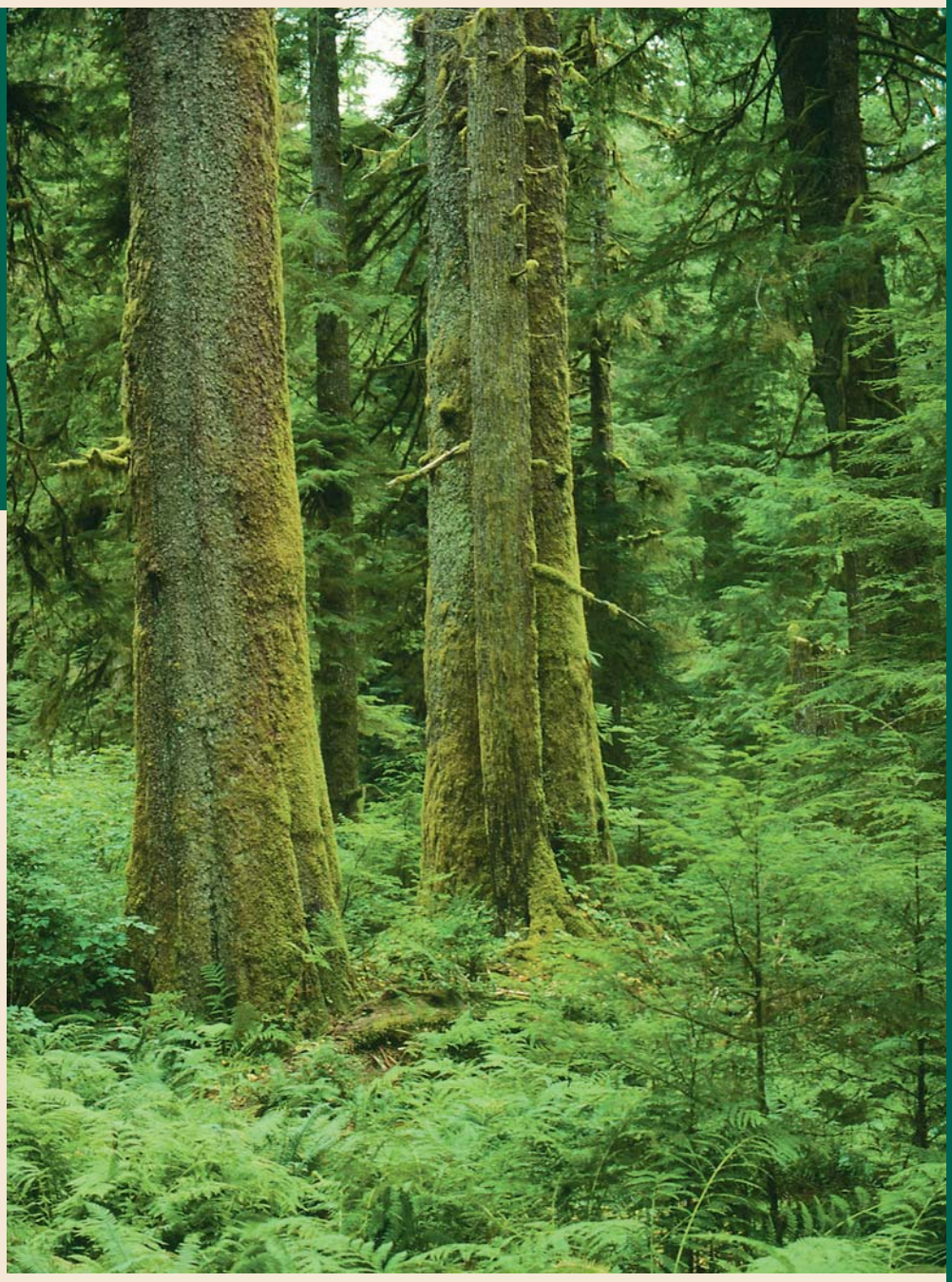
The Stewardship Series

NATURESCAPE
BRITISH COLUMBIA

Caring for Wildlife Habitat at Home



Native Plant and Animal Booklet, Georgia Basin

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Native Plant and Animal Booklet, Georgia Basin

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About Naturescape British Columbia

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Table of Contents

Introduction

Now that you have 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. 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 Georgia Basin. Let's 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 urbanization, beyond the neighbourhoods, shopping malls, office towers, industrial areas, and all that pavement. Let's concentrate instead on the original landscape — nature's landscape. At first, in the more natural parks and green spaces throughout south coastal British Columbia, you can see remnant patches of what was once there.

PHOTO: OTTO LANGER

Urban areas have natural and human-made elements

Now imagine those patches extending to cover a much broader expanse. What did the area look like, from Harrison Hot Springs and Chilliwack west to the coast, along the Sunshine Coast north of Powell River, throughout the Gulf Islands, and along the southeastern part of Vancouver Island from Kelsey Bay to Victoria and Sooke? Where were the forested areas, the open woodlands and grasslands, the wetlands, the bogs, and the many creeks and streams? What were the different species of wildlife found in these areas? How did they live in this natural world? What would have been there, where your house now sits, in terms of plants and animals?

Just as we put boundaries around neighbourhoods and communities and larger municipalities in our urban and rural world, so too the natural world can be divided into groupings at different scales. You can think of these divisions of the natural landscape as nature's neighbourhoods and communities and larger municipalities. In essence then, you have two addresses — one is your urban address, and the other is your location within the natural environment.

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

PHOTO: DFO FILES

We each have two addresses: one is urban; the other is the natural environment

Ecosystems and Ecosystem Diversity

Ecosystem Defined

An ecosystem is more a concept than something specific. The term can apply to any set of living organisms and non-living elements, which normally interconnect and interact with each other in both obvious and subtle ways.

You can think of an ecosystem as being any segment of the natural world that includes all the organisms and the environment within which they occur naturally. 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 help the plants to reproduce, by pollinating flowers, dispersing seeds, 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, is a very young science. To date, it has only begun to scratch the surface in recognizing, describing, and understanding all the processes that occur in all the different ecosystems. There is still much we don't know or fully understand.

Ecosystem boundaries can be applied at different spatial scales from the very small to much larger systems. As a result, you can define ecosystems within ecosystems. A decaying log in the forest, commonly called a nurse log, with its many plant and animal organisms, and associated non-living elements such as water, forms a relatively small ecosystem within a much larger forest ecosystem.

PHOTO: DFO FILES

A wetland is an example of an ecosystem

Just as within a neighbourhood each person has an address, so within an ecosystem each organism has an address or habitat. Ground nesting and foraging birds, such as Rufous-sided Towhees occur in different habitat from tree nesting and leaf and trunk foraging birds, such as Red-breasted Nuthatches. Not only do different animals have different habitats, they also engage in different activities in the system, such as their methods of foraging, what they eat, and how they reproduce. How long they usually live and what happens to them when they die are also important factors in understanding the system.

Each organism has its own special niche or role to play. Without a viable population of each organism, providing its particular role in the workings of the system, at all different scales, the functioning of that system is incomplete, imbalanced, and therefore, in danger of breaking down over time. That is why diversity is important.

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 climate and physiography or terrain. These natural elements affect the way organisms live. Ecosystems also vary with the passage of time and with the degree of disturbance during their continuing development.

Because British Columbia has a diverse climate, and considerable variation in terrain and elevation, and because various parts of the province are subject to

PHOTO: OTTO LANGER

Nature is an important component of human life in the Georgia Basin

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. For example, the structure, and the plant and animal species composition, of temperate rainforests, are a result of the changes in climate and disturbance and the elapsed time of their development. And major migration routes and corridors, such as along large river systems, like the Fraser River, coincide with areas of greater plant diversity.

different types and frequency of disturbance, it has an incredible diversity of ecosystems. This province is the most diverse in all of Canada.

Climate

In a broad sense, climate varies with latitude and altitude, but is also influenced by proximity to large bodies of water, and the physiography. In the northern interior of British Columbia, the winters are long, dry, and cold, and snow covers the ground for months. In the southern coastal area of the province, the winters are relatively short, wet, and mild, and most of the precipitation falls as rain.

The proximity of south coastal B.C. to the ocean contributes to the mildness of the area's climate. The affect of physiography on climate is distinct in this region as well. Winter temperatures in the mountains are colder and snow cover is common throughout the season. Closer to sea level, the winter temperatures are much milder and snow is minimal or absent in any given winter.

Physiography

The physiography of an area 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.

PHOTO: OTTO LANGER

Poorly planned urban development destroys linkages between people and their natural environment

Furthermore, the slope of the terrain will limit the kinds of plants that are able to grow there and the animals associated with them.

If you look at a mountain valley with its relatively flat valley bottom, you see a richness in vegetation and wildlife species. In comparison, the steep, rocky, upper slopes of the mountains on either side are sparsely vegetated and contain different and fewer animal species. This example shows the effect of physiography on diversity of ecosystems.

Time

Ecosystems exist at different stages in their development and therefore can exhibit different degrees of complexity. Some formed more recently such as, since the last period of glaciation. These systems are simpler and contain species that tend to be less settled and still highly mobile. Habitats may not be as well established or defined.

Those ecosystems that have had more time to develop are generally more complex and contain a higher number of relatively immobile species, which make use of microhabitats. The longer established systems have developed a greater number and more intricate web of processes and interrelationships.

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 a regional level.

From the time of a disturbance, ecological evolution of the system may be different. Generally, the more frequent the disturbance, the less likely the ecosystem will ever re-equilibrate to the degree of complexity it once exhibited. In your travels through the province, you have probably noticed narrow, gully-shaped slides on steep mountain slopes, which recur frequently and which prohibit the re-establishment and re-growth of the forest cover on either side of the slide area.

Some types of disturbance may be repetitive over time, but cause relatively local disturbance to a system. High winds occurring from time to time across forested tracts and mountain slopes, cause windthrow and create various-sized clearings in the forest, but they generally do not totally alter the forest. Other types of disturbance, even if they happen only once, may change forever the original ecosystem. An area of original wetland, filled in with boulders and other rock debris from a major landslide, is not likely to evolve once again into a wetland ecosystem.

Disturbances need not be natural. Urbanization is a human phenomenon that significantly alters the landscape to an unnatural character, with the concomitant loss of natural wildlife habitat and ecosystem diversity. Human settlement 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.

With urbanization has come further disturbance through the introduction of non-native plant species, such as purple loosestrife, and the introduction of non-native wildlife, such as European Starlings and House Sparrows. If introduced plant and

Naturescape Projects: *an integral part of the naturalization of urbanized areas*

The effects of urbanization in British Columbia are nowhere greater than in the south coastal region of the province. As urbanization spreads farther and farther, you, your neighbors, and others, value more and more, the remaining areas of community green space, undeveloped sites, and the municipal, regional, provincial, and federal parks and protected areas that remain.

Not only do these more natural areas provide aesthetics to the urban and rural landscape, but they also provide important functions as wildlife corridors, areas of greater biodiversity, and enhancers of the quality of air, water, and soil in the local environment. Urban ravines are one example of areas which, because of their topography, have been spared from development and may still contain a rich assortment of plants and animals.

These protected, more natural areas are patches of less disturbed, more nearly original wildlife habitat within a broader urban expanse. By creating wildlife habitat on your own property, you offer one integral link in the development of a patchwork quilt or network of habitat areas and wildlife corridors.

Far from being insignificant, your contribution to the creation and stewardship of wildlife habitat, collectively with the contribution of others, works to restore biodiversity in the urban setting. A more complete layering of vegetation throughout the urban landscape cleans the air, provides shade, and protects from the wind. Native vegetation provides habitat essential for wildlife and generally requires less water and care because it has evolved to tolerate local climate and soil conditions.

While the continued existence of urbanized areas precludes the complete restoration of original ecosystems, some of the richness can be brought back through naturescape projects — one yard at a time. Naturescape British Columbia offers individuals a way to become involved personally in the larger trend towards naturalization of urban and rural areas.

animal species are aggressive in establishing and sustaining themselves in their new surroundings, they threaten native or indigenous plants and animals, and further alter the functioning of the original ecosystem.

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 complexes.

One system used by the B.C. Ministry of Environment, Lands and Parks, research institutions, 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. Ecosystems present in any one area are the result of how that area gets its weather and how the weather interacts with the underlying shape of the land surface.

Ecoprovinces, ecoregions, and ecosections

British Columbia's ten ecoprovinces are divided into thirty terrestrial and marine ecoregions. And twenty of these are further divided into 87 local scale ecosections.

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 or oceanography, relief, and plate tectonics on a continental scale
- ecoregions occur within ecoprovinces, and cover areas with major physiographic and minor climatic or oceanographic variation on a regional scale
- ecosections occur within ecoregions, and define areas with minor physiographic and climatic or oceanographic variation on a local scale

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 Georgia Basin beyond your neighbourhood and municipality. In this case your address becomes one of the three ecoregions, or ultimately six ecosections, within the Georgia Depression Ecoprovince.

The Georgia Depression Ecoprovince (The Georgia Basin)

Location

The Georgia Depression Ecoprovince defines the area in and around the Strait of Georgia. It stretches west from Harrison Hot Springs and Chilliwack along the Fraser River Valley to Greater Vancouver. From there it extends northwest along the Sunshine Coast beyond Powell River and across the Strait of Georgia to the southeastern half of Vancouver Island from Kelsey Bay in the north to Port Alberni, Nanaimo, Duncan, Victoria, and Sooke in the south.

Geographically the Georgia Depression Ecoprovince is a large basin bounded on the east by the Southern Coast Ranges and on the west by the Vancouver Island Mountains. And since climatic processes and physiography occur irrespective of national borders, the Georgia Depression Ecoprovince actually extends south of

the Canada-U.S.A. border and forms part of a larger area contained within and surrounding the Georgia-Puget Basin south to Olympia, Washington. This is commonly referred to as the Georgia Basin. **For further information about the Province of British Columbia's Georgia Basin Initiative, please see page 59.**

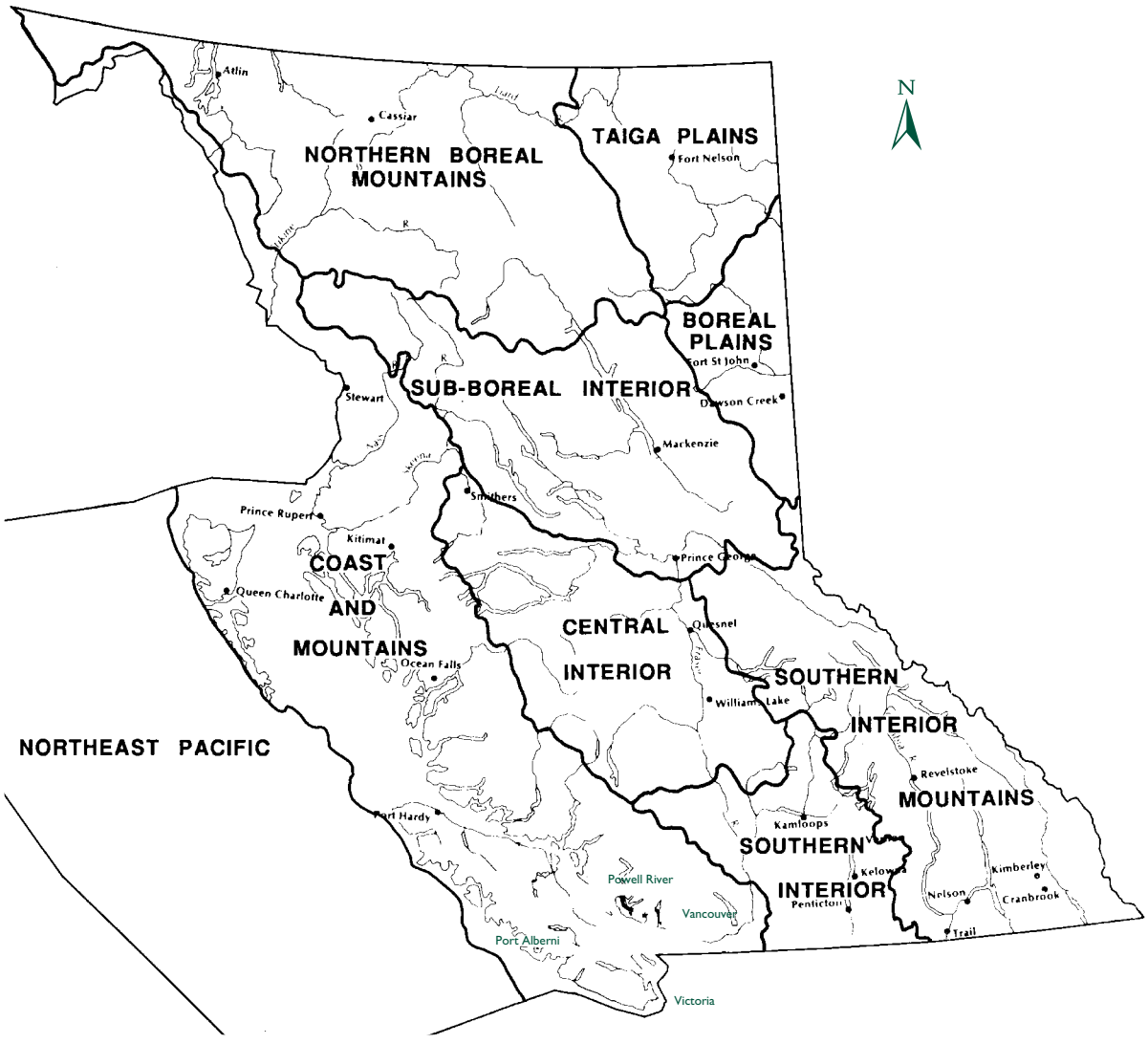
The Georgia Depression Ecoprovince is divided into three ecoregions, from east to west: Lower Mainland, Georgia-Puget Basin, and Eastern Vancouver Island. Each of these, in turn, contains two ecosections.

CLIMATE

The climate of the Georgia Depression Ecoprovince is modified by the Pacific Ocean and Strait of Georgia, and is characterized by mild, wet winters and warm, sunny summers. Compared to exposed areas along the Pacific coast, the Georgia Depression enjoys clearer and drier conditions. The greatest annual amounts of sunshine in the province occur in the southernmost parts of this ecoprovince.

VEGETATION

Much of the vegetative cover at low to medium elevations in the Georgia Depression consists of coastal western hemlock forests, which contain mostly



The 10 ecoprovinces of British Columbia

western hemlock, Douglas-fir, western redcedar, grand fir, bigleaf maple, black cottonwood, red alder, Sitka spruce, and shore (lodgepole) pine.

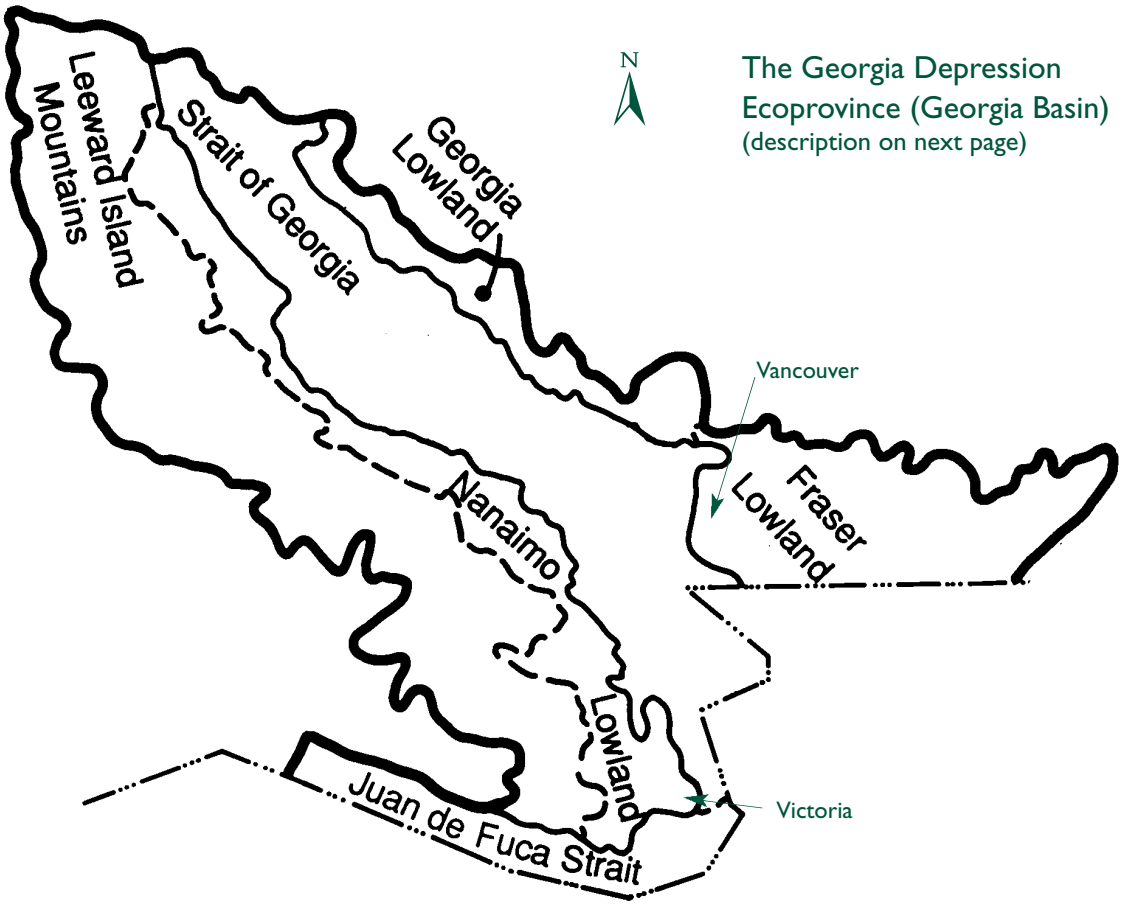
Grasses and shrubs of wetlands, bogs, and marshes, including freshwater tidal marshes, are prevalent in the Fraser River delta. Patchy grasslands and open coniferous and deciduous forests are also found in areas of the estuary.

A limited, drier, rain shadow area occurs below elevations of 150 m within the Nanaimo Lowland Ecosection, the Gulf Islands, and a narrow strip of mainland in the Georgia Lowland Ecosection. It is characterized by small pockets of grassland, warm, rocky, south-facing slopes, and woodlands consisting of arbutus, Garry oak, and Douglas-fir. This coastal Douglas-fir zone is unique to British Columbia, has a high diversity of plant species, and is the only occurrence of both Garry oak and arbutus in Canada.

Forests of mountain hemlock, amabilis fir, and yellow-cedar occur at higher elevations of the Leeward Island Mountains Ecosection.

Wildlife

The relatively mild climate and significant extent of wetlands along the Fraser River delta contribute to the fact that the Georgia Depression Ecoprovince



The Georgia Depression Ecoprovince is divided into three ecoregions, each of which is divided into two ecosections. It is roughly equivalent to the Canadian portion of the Georgia Basin.

supports the highest diversity of birds in all of British Columbia. The Fraser Lowland is a critical stopover for migratory song birds, and a stopover and wintering area for migratory shorebirds, waterfowl, and birds of prey or raptors. Over one and a half million birds use the delta each year.

The Fraser River delta supports the largest wintering population of birds of prey or raptors in Canada. The bays, estuaries, and surge narrows along the coastal areas of the Georgia Basin provide further habitat for wintering waterbirds and shorebirds. Three species of passerines or perching birds — the Bushtit, Hutton's Vireo, and the endangered Purple Martin — breed in British Columbia only in the Georgia Depression Ecoprovince. And the only resident populations of Barn Owls and Anna's Hummingbirds in the province occur here.

Some of the reptiles found within this ecoprovince are the Northern Alligator Lizard and three different species of garter snakes. A number of amphibians are found in the area, including the Rough-skinned Newt, Pacific Giant Salamander, Clouded Salamander, and Red-legged Frog.

The Georgia Depression Ecoprovince contains a broad range of terrestrial and marine mammals. A variety of shrews, bats, and voles occur throughout the area. Mink, River Otters, and Raccoons are found along shorelines, river banks and

THE GEORGIA DEPRESSION ECOPROVINCE (THE GEORGIA BASIN)

Lower Mainland Ecoregion:

Generally an area of reduced rainfall, although precipitation increases towards the Coast Ranges. The rain shadow is most pronounced on the Fraser River lowlands and delta areas.

Fraser Lowland Ecosection (Vancouver to Chilliwack):

The area containing the Fraser River delta, estuary, lowlands, and associated uplands

Georgia Lowland Ecosection (Sunshine Coast):

The areas of relatively low relief, consisting of patchy rocky outcrop joined by deposits of glacial gravel and debris, at the base of the mainland Coast Ranges

Georgia-Puget Basin Ecoregion:

This semi-enclosed estuarine basin includes several straits, troughs, and clusters of islands and extends from Johnstone Strait in the north along the Strait of Georgia and south across the Canada-U.S.A. border.

Strait of Georgia Ecosection (Gulf Islands):

A broad, shallow marine basin that separates southern Vancouver Island from the mainland and contains a number of small islands, which have mild and very dry climates

Juan de Fuca Strait Ecosection:

A deep trough, marine area with strong estuary-like outflow currents, which forms a major conduit for water exchange between the Georgia-Puget Basin and the Pacific Ocean

Eastern Vancouver Island Ecoregion:

This is an area of reduced rainfall leeward of the Vancouver Island Ranges.

Nanaimo Lowland Ecosection (Campbell River to Victoria):

A coastal plain with mild climate and low snow depths, situated on the southeastern margin of Vancouver Island

Leeward Island Mountains Ecosection (Kelsey Bay to Port Alberni to Sooke):

The mountainous area stretching from the crest of the Vancouver Island Ranges to the Nanaimo Lowlands

estuaries, and near lakes. Larger mammals, such as Black-tailed Deer and Coyotes are common in the lowland areas. Cougars and Black Bears are found in more mountainous and generally more remote parts of the ecoprovince.

Urbanization in the Georgia Depression Ecoprovince

One of the main threats to the health of ecosystems within the Georgia Depression is the continued expansion of urbanization and accompanying industrial development onto more and more of the land base. The two largest urbanized areas are the Lower Mainland and Greater Victoria.

Within the Lower Mainland, the Fraser River estuary represents an important stopover point along the Pacific Flyway for migratory birds. Parts of this estuary, some of the north shore lands of the Greater Vancouver Water District, and scattered forests, ravines, wetlands, bogs, and parts of river valleys form the main portion of remaining natural ecosystems in the Lower Mainland. In contrast, the most disturbed sites within the Lower Mainland are commercial and industrial developments, and high density urban sites, which are expanding year to year.

Parts of Greater Victoria coincide with a threatened ecosystem known as Garry oak woodland or savanna. This ecosystem consists of a unique combination of trees with Garry oak and arbutus growing along with Douglas-fir. Many wildflowers also occur in this natural community. Much of the remaining native vegetation within the Capital Regional District is contained in the regional parks and around the edges of the urbanized sections.

With major stopover and wintering grounds for birds and large urban areas, the Georgia Depression Ecoprovince is obviously a popular place for both wildlife and people. Urbanization is one factor that threatens the sustainability of the immense biodiversity of this ecoprovince.

Counterbalancing that threat will be a matter of our developing a deeper understanding of the ecoprovince's wildlife and their needs. Further, it will be a matter of our providing those needs — food, water, and shelter — in the form of natural habitat in sufficient areas to supply the survival facilities for viable populations. It is a matter of sharing and co-existing in our mutual home or ecosystem.

Putting It All Together In Your Yard

You now have a general understanding of ecosystems and how they change. You have a broad visual picture of the Georgia Depression Ecoprovince and have perused the lists of native plants and animals to be found there. You have determined the location of your home within an ecosection of the Georgia Depression. And you have spent some time visiting and taking a closer look at more natural, undisturbed areas nearby.

The type of wildlife habitat that will work in your outdoor space depends on a combination of factors, including size and shape of your property, exposure to sun and other elements, soil conditions and topography, and specific location within the Georgia Depression Ecoprovince. Everyone's outdoor space is different.

The size and shape of outdoor space you have available may limit the extent of the wildlife habitat that can reasonably be developed. Those with lower storey 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 attractive to birds. If your

patio area is in considerable shade and the ground retains moisture, you may be able to create a small ecosystem, such as a nurse log, with all its many microhabitats. If your patio area is large enough, perhaps a small wildflower meadow or section of forest edge could be created.

Small yards have potential for some larger trees and more extensive forest edge or forest clearing habitat. Perhaps a pond for amphibians is a consideration. There may be room for small brushpiles, rockpiles, and a flower garden for hummingbirds and butterflies. Larger properties may allow for the retention or enhancement of existing woodland, stream, or natural pond habitats or the creation of large open meadows with shrubbery on the drier parts and small areas of wetland in the lower and wetter parts of the property. The size of yards and acreage may also allow for the retention of dead trees and stumps, which provide abundant habitat for many wildlife species.

If the shape of your outdoor space is such that the wildlife habitat can be kept separate and undisturbed from human activities, you may have better luck offering natural or supplementary nesting sites for wildlife.

The amount of shade or sunlight your outdoor space receives is another factor to consider in determining the type of habitat that you can create. If you have a small townhouse yard that is shaded by adjacent buildings, you may want to consider a shady forest floor habitat, filled with shade-tolerant shrubs and ferns. If your property has full exposure to south- or west-facing sunlight, you may want to emphasize sun-loving perennials and some of the flowering and fruit-bearing shrubs.

If you want to attract birds to nest boxes and your property is fully exposed to the elements, you will need to consider planting shrubs and trees to provide some protection before you could expect the nest boxes to be used.

Soil conditions can be modified to some extent, but you will want to take the basic condition of your soil into account when selecting plants for your wildlife habitat. The needle fall in mixed and coniferous forests makes the soil acidic. It makes sense in this example to choose plants that thrive in such soil conditions.

Soil conditions and topography also have an effect on drainage conditions on your property. A well-drained soil would not be amenable to plants such as skunk cabbage and Labrador tea that need constantly wet ground to thrive.

The specific location of your home within the Georgia Depression Ecoprovince will have considerable bearing on what plants can be successfully grown and what animals can be expected in your wildlife habitat. Here is where time spent observing natural areas beyond your property will help most. By noting the types of habitat found in more natural parks and green belts you will have a better idea of what habitat will work in your yard.

If you can hear the frogs singing in a natural area not far from your home, then you may have good success attracting various types of amphibians to a natural or artificial pond in your yard. If you live near a natural forested area containing deciduous and coniferous trees, various berry-producing shrubs, and a number of different ferns, then you may want to consider creating a similar forest edge habitat in your yard. In that way, your wildlife habitat essentially forms an extension of the natural habitat nearby.

If you live within the area containing the unique coastal Douglas-fir and Garry oak savanna, you may want to consider creating that habitat in your yard. Again, take a close look at how the various grasses, flowers, shrubs, and trees are arranged in more natural areas and then use that as a guide for your own wildlife habitat plans.

If you have a large property situated on an estuary you may have the physical elements and room to allow for the creation of a small marsh or other wetland habitat. A close exploration and examination of natural wetland habitats would help you design your project.

It is important to keep in mind that the more you look at natural habitats, the more you will begin to see and understand. The process of creating wildlife habitat is not a one time project. It becomes a continuous exchange between your efforts and the responses of the plants and wildlife. Your awareness and understanding of what will work in your outdoor space will grow with time and experience, as will your ability to enhance your habitat garden and make it even more attractive to wildlife.

As you focus more and more on the world of nature, you will continually fine-tune your expertise. Some things may not work at first, but don't get discouraged. Try to determine reasons why the project isn't succeeding. The solution may be as simple as a slightly different placement of a nest box to attract interest from the birds, or a different ratio of evergreen to deciduous trees and shrubs in your forest edge habitat to attract the wildlife. Always go back to the natural areas nearest your property to look for answers. Be patient and enjoy the adventure.

In Summary...

When you look beyond your yard, your focus becomes the broader natural environment within the Georgia Basin. You have a choice of different scales for this new perspective: you might concentrate on the ecosection, ecoregion, or ecoprovince. Whichever scale you choose, you acquire a vision of being part of a larger whole.

Your address is no longer just your home and street number, and municipality — your urban habitat — but also your address within an area of the Georgia Depression Ecoprovince. Anything that happens in any other neighbourhood or municipality that affects the healthy functioning of your ecosystem is as much a concern to you as what happens in your own neighbourhood or municipality.

Little patches of relatively undisturbed ecosystems within an urban expanse are likely not sustainable over the long term, unless wildlife corridors, other natural areas, and larger patches of natural wildlife habitat can be restored, enhanced, maintained, and protected over the years.

By caring for wildlife habitat at home, you begin the process of creating a patchwork quilt of natural habitat throughout the urban and rural landscape. Rather than a few scattered patches of green parkland in a gray urban expanse, the vision becomes patches of gray urbanization in a sea of green. Take pride. You are a pioneer in the naturalization of our urbanized areas and a steward for your home ecosystem — a guardian for the rich biodiversity of the Georgia Basin.

Summary Plant and Animal Tables, Georgia Basin
(Georgia Depression Ecoprovince and Its Ecoregions)

Table 1: Native Plants

Although the following list of native plants within different parts of the Georgia Depression Ecoprovince is extensive, it is by no means all inclusive.

Key to Table 1:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Availability for wildlife habitat gardens:

** Generally available at garden centres

* Occasionally available, or offered commercially on a limited basis; some research may be required

Plants that are not starred are either very difficult or impossible to find commercially. Native plants should never be taken from a park or from the wild. Cuttings should not be taken from parks. It does not make sense to disturb one natural area just to create a natural area somewhere else. Furthermore, the success rate for nursery-raised native plants is much higher than for plants taken from the wild. If it is a plant you are sincerely interested in trying to grow in your yard, consider collecting some of its seeds and growing it from seed.

When buying native plants from commercial sources, it is important to inquire about nursery sources of the plants, to ensure that they are nursery propagated from seeds or cuttings, and not collected from the wild.

As local growing conditions do vary considerably throughout the varied elevations in an area the size of the Georgia Depression Ecoprovince, it is a good idea to check your proposed list of native plants for the habitat garden you are planning with personnel at your local garden centre or retail nursery.

Sun exposure

S	Full sun
P	Partial sun; partial shade
SH	Shade
SSH	Sun or partial shade

Moisture preference

D	Dry
M	Moist
W	Wet

Foliage Type

D	Deciduous
E	Evergreen

Plants designated with this icon have been deemed acceptable for use on School Grounds

How Scientists Categorize Threatened and Endangered Species

Red List
Includes any indigenous species or subspecies (taxa) considered to be Extirpated, Endangered, or Threatened in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Threatened taxa are likely to become endangered if limiting factors are not reversed. Red-listed taxa include those that have been, or are being, evaluated for these designations.

Blue List
Includes any indigenous species or subspecies (taxa) considered to be Vulnerable in British Columbia. Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed species are at risk, but are not Endangered or Threatened.

Yellow List
The purpose of the Yellow List, beyond listing which species or subspecies are not currently at risk, is to give wildlife managers and others an indication of how the species not at risk should be managed. All these species are managed as a component of the habitat and therefore, for many of them, population levels do not have to be monitored. However, many species on the Yellow List are being monitored because of harvesting or because it is considered useful to track them so that they and their associated species do not become "at risk."

Name – Scientific	Name – Common	Ecosection	Availability	Height (m)	Sun Exposure	Moisture Preference	Foliage Type	Examples of some wildlife habitat values and other notes of interest
TREES								
Abies amabilis	Amabilis fir	G, L	*	55	SH	M	E	Occurs in moist coniferous forests at middle to higher elevations; provides food in form of large, deep purple seed cones
Abies grandis	Grand Fir	All	*	80	SH	D, M	E	Occurs in dry to moist coniferous forests, from low to middle elevations; forests containing grand fir provide habitat for bears, cougars, owls, woodpeckers, toads, frogs, and salamanders
Acer circinatum	Vine maple	F, G	**	20	SH	M	D	Occurs at low to middle elevations; white flowers in clusters appear in May after the leaves; winged fruits provide source of seeds
Acer glabrum var. *douglasi*	Douglas maple	All	*	1-7	SH	M, W	D	Occurs at low to middle elevations; small, greenish-yellow flowers; provides source of food in form of wing-shaped seeds
Acer macrophyllum	Bigleaf maple	All	*	35	SSH	D, M	D	Found at low to middle elevations; small greenish-yellow flowers in hanging clusters appear in April before the leaves; squirrels, grosbeaks, and mice eat the seeds; deer and elk eat the twigs
Alnus rubra	Red alder	All	*	25	S, P	M	D	Occurs at low elevations; elongate male and female catkins appear before the leaves; seed cones remain on over the winter; popular nesting tree for Great Blue Heron; attracts chickadees and Bushtit; deer browse on alder in fall
Arbutus menziesii	Arbutus	All exc. L	*	30	S	D	E	Found at low to middle elevations; white flowers in drooping clusters appear in April and May; bees are attracted to the flowers; Cedar Waxwing, thrushes, and American Robin eat the orange-red berries available from July though October
Betula papyrifera	Paper birch	F, G	**	30	S, P	M	D	Generally occurs at low elevations; important winter source of food for deer, snowshoe hare, porcupine, and beaver; Pine Siskin and American Goldfinch eat the seeds; woodpeckers, sapsuckers, and vireos nest in this tree
Chamaecyparis nootkatensis	Yellow-cedar	G, L	**	30	SH	M, W	E	Occurs at middle to high elevations; provides food in form of small, brownish seed cones
Cornus nuttallii	Pacific dogwood	All	*	15	P, SH	M	D	Found at low elevations; flowers in spring; flowers occur in clusters, surrounded by 4 to 6 white to pinkish bracts; grosbeaks, Hermit Thrush, and waxwings eat the bright red berries, which occur in clusters; bears and beaver eat the fruit and foliage; deer eat the twigs
Crataegus douglasii	Black hawthorn	All	*	10	S	M	D	Occurs at low to middle elevations; small white flowers in clusters in May; apple-like fruit forms in summer and provides food for birds through the winter; hawthorn thickets are good nesting and denning sites for small birds and mammals
Fraxinus latifolia (Red List)	Oregon ash	N	*	25	SH	M, W	D	Found at low elevations; seeds occur before the leaves, have one paddle-shaped wing, and occur in clusters on female trees; provides source of seeds

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Juniperus scopulorum	Rocky Mountain juniper	N	*	13	S	D	E	Occurs at low to middle elevations; small, fleshy, greyish-blue seed cones, resembling berries, are eaten by birds and other animals; dissolution of the fleshy covering in the digestive tract allows the seeds to germinate
Malus fusca	Pacific crab apple	All	*	2-12	S	M, W	D	Found at low to middle elevations; fragrant pinkish-white blossoms appear in April and May; clusters of small, yellow to red apples are a food source for birds, such as Purple Finch, from July through October
Picea sitchensis	Sitka spruce	All exc. S	*	70	S, P	M, W	E	Occurs at low to middle elevations; prefers moist, but well-drained sites; provides food in form of large, brown seed cones
Pinus contorta var. *contorta*	Shore pine	All	*	20-30	S	D, M, W	E	Found at low to middle elevations; highly adaptable; tolerates low nutrient conditions; small mammals, such as voles and squirrels, feed on the inner bark
Pinus monticola	Western white pine	All	*	40	S	D, M	E	Occurs from near sea level to subalpine; provides food in form of seed cones for animals, such as Red and Douglas' Squirrels
Populus balsamifera spp. *trichocarpa*	Black cottonwood	All	*	50	S, P	M, W	D	Grows at low to middle elevations; male and female catkins on separate trees appear before the leaves in April; sticky gum on spring buds has strong balsam-like fragrance; bees collect sticky resin on buds for their hives and seal intruders in the resin to prevent decay and protect the hive
Populus tremuloides	Trembling aspen	F, N	*	25	S, P	M, W	D	Found at low elevations; hairy catkins produced in March and April with male and female flowers on separate trees; fruits are tufted seeds; trunks of aspen are relatively short-lived; rotten stems provide habitat for cavity-nesting birds; elk and deer browse on young aspen suckers; twigs, leaves, catkins, and bark are important food sources for several animals, including birds, throughout the year
Prunus emarginata	Bitter cherry	All	*	2-15	S, P	M	D	Found at low to middle elevations; small white or pinkish flowers in loose clusters occurring in April through May; seeds contained in the bright red cherries eagerly harvested by Evening Grosbeaks in early autumn
Pseudotsuga menziesii, spp. *menziesii*	Douglas-fir	All	**	80	S	D, M	E	Occurrence varies from dry, low elevation to moist, mountainous sites; squirrels, chipmunks, mice, shrews, Winter Wren, and crossbills eat the seeds; bears scrape off bark and eat the sap layer beneath; deer browse on young trees
Quercus garryana	Garry oak	S, N	*	25	S	D	D	Occurs at low elevations; tiny flowers consisting of male catkins and small female clusters; produces acorns, 2 to 3 cm long; Garry oak meadow is habitat to many species of birds, mammals, insects, and reptiles
Rhamnus purshiana	Cascara	All	*	10	SH	D, M, W	D	Found at low to middle elevations; small greenish-yellow flowers in clusters; provides dark bluish-black berries; birds, such as American Robin and Band-tailed Pigeon, eat berries

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Taxus brevifolia	Western yew	All	*	5-15	SH	D, M	E	Occurs at low to middle elevations; male and female cones on separate trees; blackbirds, waxwings, nuthatches and other birds and small rodents eat the fruit; fruit is considered toxic to humans
Thuja plicata	Western red cedar	All	**	60	P, SH	M, W	E	Occurs at low to middle elevations; provides food in form of seed cones; seeds eaten by Pine Siskin, American Goldfinch, and Common Redpoll; deer browse on cedar in winter
Tsuga heterophylla	Western hemlock	All	*	60	SH	M, W	E	Grows well on humus and decaying wood; occurs at low to middle elevations; deer and elk browse on young hemlock shoots; also provides seed cones; seeds eaten by Pine Siskin, American Goldfinch, and Common Redpoll
Tsuga mertensiana	Mountain hemlock	L	*	40	S, P	W	E	Occurs up to timberline and in subalpine areas; provides food in form of large, purplish-brown seed cones; squirrels cache the seed cones
SHRUBS AND BUSHES								
Alnus crispa spp. *sinuata*	Sitka alder	G, L	*	1-5	S, P	M	D	Occurs at middle to subalpine elevations; catkins open same time as flowers; seeds in winged capsules are eaten by Pine Siskin and Common Redpoll
Amelanchier alnifolia	Saskatoon	All	*	1-5	S	D, M	D	Found at low to middle elevations; has showy large white flowers from April through May; provides winter browse for deer and elk; many bird species forage on purple-black berries that are present August to September
Arctostaphylos columbiana	Hairy manzanita	All	**	3	S	D	E	Occurs at low elevations; white to pinkish, urn-shaped flowers; blackish-red berries eaten by Band-tailed Pigeon
Cornus stolonifera	Red osier dogwood	All	**	1-6	S	M, W	D	Found at low to middle elevations; small white to greenish flowers in clusters appear in June; late summer fruits are white and berry-like; deer browse on dogwood year-round
Corylus cornuta var. *californica*	Beaked hazelnut	F, N	*	1-4	S, P	M	D	Occurs at low to middle elevations; male catkins flower before leaves appear; female catkins are tiny; squirrels and Steller's Jay eat the spherical nuts, which ripen by autumn
Gaultheria shallon	Salal	All	*	5	SSH	D, M, W	E	Generally at low to middle elevations; small white to pinkish flowers on stalks during May and June; reddish-blue to dark purple berry-like fruit appears in August; deer browse on new leaves and berries; used as winter browse by deer as well
Holodiscus discolor	Oceanspray	All	*	4	S	D, M	D	Mostly found at low to middle elevations; white to cream flowers in lilac-like clusters appear in June and early July; very small, hairy seed pods
Juniperus communis	Common juniper	All	*	1	S	D	E	Occurs at low to subalpine and even alpine elevations; male and female cones on separate plants; pale green, ripening to bluish-black, berry-like fruit, sometimes eaten by Rufous-sided Towhee

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Ledum groenlandicum	Labrador tea	All	*	0.5-1.5	S	W	E	Found in wet, acid, organic soils at low to middle elevations; small white flowers in clusters appear in June; seed capsules in drooping clusters
Lonicera ciliosa	Western trumpet honeysuckle	F, N	*	6	P, SH	M	D	Occurs at low to middle elevations in woods and thickets; fruits are orange-red, seed-filled berries; trumpet-shaped, orange-yellow flowers of this widely branching vine provide source of nectar for hummingbirds
Lonicera involucrata	Black twinberry	All	*	0.5-3	SH	M, W	D	Ranges from low to subalpine elevations; yellow, tubular flowers are a source of nectar for hummingbirds in late April through May; shiny black berries occur in pairs in July and August
Menziesia ferruginea	False azalea	All	*	3	SSH	M	D	Found at sea level to subalpine elevations; pinkish to salmon flowers in drooping terminal clusters
Myrica gale	Sweet gale	All	*	1.5	S	W	D	Aromatic wetland shrub; generally occurs at low elevations; male and female catkin, waxy, appear on separate plants before the leaves; winged fruit occurs in cone-like structures
Oemleria cerasiformis	Indian plum	N, F	*	1.5-5	S, P	D, M	D	Found at low elevations; greenish-white fragrant flowers in drooping clusters appear in March; bluish-black fruit, like tiny plums, are eaten by birds
Oplopanax horridus	Devil's club	All, exc. S	*	1-3	S, P	M, W	D	Found in moist woods and along streams at low to middle elevations; tiny white flowers in clusters appear in June; bright red, flattened, shiny berries in August and September are a favourite of bears
Philadelphus lewisii var. *gordonianus*	Mock orange	F, N	*	3	S	D, M	D	Occurs at low to middle elevations; white fragrant flowers in clusters appear in June; produces woody seed capsules
Physocarpus capitatus	Pacific ninebark	All	*	4	S	M	D	Found in moist, partly open areas at low to middle elevations; small white flowers in rounded clusters bloom in June; year-round, but preferred winter, browse for elk
Rhododendron albiflorum	White-flowered rhododendron	L	*	2.5	S, P	D, M, W	D	Occurs at subalpine elevations; white to creamy, large flowers in clusters
Rhododendron macrophyllum	Pacific rhododendron	F, N	*	2-8	SH	D, M	E	Found at low to middle elevations in coniferous and mixed forests; spectacular pink to rose-purple, bell-shaped flowers; blooms in late spring
Ribes bracteosum	Stink currant	All	*	3	P, SH	M, W	D	Occurs at low to subalpine elevations; long clusters of white to greenish-white flowers; blue-black berries occur in long clusters
Ribes divaricatum	Wild gooseberry	N	*	0.5-2	S, P	S, P	D	Occurs at low elevations; green or purple flowers and smooth dark purple berries
Ribes lacustre	Black gooseberry	All	*	0.5-2	S, P	D, M	D	Found in moist forests and along streams to drier forested slopes; reddish to maroon flowers in drooping clusters; dark purple berries
Ribes laxiflorum	Trailing black currant	All		1	S, P	M	D	Occurs at low to middle elevations; greenish-white to reddish-purple flowers; purplish-black berries

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Ribes lobii	Gummy gooseberry	All	*	0.5-2	S, P	D, M	D	Occurs at low to middle elevations; produces sticky, hairy berries; hummingbirds are attracted to its reddish, fuchsia-like flowers
Ribes sanguineum	Red-flowering currant	All	*	1-3	S, P	D	D	Found in open, rocky, or disturbed sites at low to middle elevations; produces bluish-black round berries; reddish-pink flower clusters in April and May are a source of nectar for hummingbirds
Rosa gymnocarpa	Baldhip rose	All	*	1.5	S, P	D, M	D	Found at low to middle elevations in a variety of habitats; pale pink to rose flowers that attract bees; orange to scarlet pear-shaped rosehips
Rosa nutkana	Nootka rose	All	*	3	S	D, M	D	Occurs at low to middle elevations; large pink flowers from May through June attract bees; purplish-red, round rosehips last through the winter
Rubus leucodermis	Black raspberry	All		2	S	D	D	Occurs at low to middle elevations; small white to pink flowers in clusters; purple to black berries; deer browse on black raspberry in winter
Rubus parviflorus	Thimbleberry	All	*	0.5-3	S	D, M	D	Ranges from low to subalpine elevations; large white flowers, in clusters, appear in May and June; followed by production of red raspberry-like fruit in July and August
Rubus spectabilis	Salmonberry	All	*	4	S, P	M, W	D	Occurs at low to subalpine elevations; flowers are pink to reddish, large, and appear from April through May; early ripening of yellowish to reddish berries in May through June associated with song of Swainson's Thrush; berries persist through August; American Robins eat berries; bears also eat berries
Salix hookeriana	Hooker's willow	All	*	6	S, P	W	D	Found at low elevations; provides seed capsules; pollen is important food source to many insects, especially moths
Salix lucida ssp. *lasiandra*	Pacific willow	All	*	12	S, P	W	D	Occurs at low to middle elevations; provides seed capsules; pollen is important food source to many insects, especially moths
Salix scouleriana	Scouler's willow	All	*	2-12	S, P	M, W	D	Occurs at low to middle elevations; provides seed capsules; pollen important food source to many insects, especially moths
Salix sitchensis	Sitka willow	All	*	1-8	S, P	M, W	D	Occurs at low to middle elevations; provides seed capsules; pollen important food source to many insects, especially moths
Sambucus caerulea	Blue elderberry	All	*	6	S, P	D, M	D	Found in dry to moist, fairly open areas at low elevations; flowers appear in early July and August; blue berry-like fruits with a whitish bloom are produced in August and September
Sambucus racemosa ssp. *pubens* var. *arborescens*	Red elderberry	All	*	6	S, P	M, D	D	Occurs at low to middle elevations; white to creamy flowers in clusters appear in April through May and are a source of nectar for hummingbirds; clusters of red berries ripen in mid-June through July and attract Band-tailed Pigeons and other birds

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Shepherdia canadensis	Soapberry	N	*	1-2	S	D, M	D	Found in open forests at low to middle elevations; tiny yellowish flowers in clusters in May and June; bright red, juicy, bitter berries form in early summer
Sorbus sitchensis	Sitka mountain ash	G, L	*	4	S, P	M	D	Generally at middle to alpine elevations; small white flowers in terminal clusters in early spring; red berries, which persist into winter, attract grosbeaks, waxwings, and American Robin
Spiraea douglasii ssp. *douglasii*	Hardhack	All	*	2	S	M, W	D	Occurs at low to middle elevations; pink to deep rose flowers in long, narrow clusters appear in June and July; attracts bees
Symphoricarpos albus	Common snowberry	All	*	0.5-2	S, P	D, M	D	Found at low to middle elevations; pink to white bell-shaped flowers occur in May and June; bees feed on nectar; clusters of white berries persist through the winter; American Robin may eat berries in winter
Vaccinium alaskaense	Alaskan blueberry	All	*	2	S	M	D	Occurs at low to subalpine elevations; flowers are pinkish-green, appearing with or after the leaves; bluish-purple berries provide source of food for birds and bears
Vaccinium membranacem	Black huckleberry	G, L	*	1.5	S, P	D, M	D	Occurs at middle to high elevation; yellowish-pink flowers; purplish to reddish-black berries, eaten by birds and bears
Vaccinium ovalifolium	Oval-leaved blueberry	G, L		2	S	M, W	D	Occurs at middle to subalpine elevations; pinkish flowers generally appear before the leaves; blue-black berries are a food source for birds and bears
Vaccinium ovatum	Evergreen huckleberry	All	*	4	S, P	D, M	E	Found along edges of coniferous forests at low elevations; deep pink flowers; shiny, purplish-black berries provide source of food for birds and bears
Vaccinium parvifolium	Red huckleberry	All	*	4	S, P	D, M	D	Occurs at low to middle elevations; flowers are pinkish and appear in May; bright red berries ripen in July and persist through the rest of the summer; important source of food for deer; berries eaten by birds
Viburnum edule	Highbush cranberry	All	*	0.5-3.5	S, P	M	D	Occurs at low to middle elevations; white flowers occur in small clusters in June; red to orange fruit ripens in summer and remains through the winter, providing a food source for over-wintering birds
GROUND COVER								
Arctostaphylos uva-ursi	Kinnikinnick	All	**	0.2	S	D	E	Occurs at low to alpine elevations; pinkish-white flowers in small clusters; bright red berries are eaten by grouse and other birds, and are a favorite of bears
Cornus canadensis	Bunchberry	All	*	0.2	SH	M, W	E	Found at low to subalpine elevations; small greenish-white to yellowish-purple flowers surrounded by four large white bracts bloom in May through June; bright red, fleshy berries; year-round browse for deer

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Empetrum nigrum	Crowberry	All	*	0.2	S	D, M, W	E	Occurs in coastal heathlands and bogs at low elevations, on mountain slopes, and in alpine areas; produces black berry-like fruits, a favourite food of bears; crows also eat the berries
Fragaria chiloensis	Coastal strawberry	All exc. L	*	0.2	S	D	D	Occurs at low elevations in sandy, rocky areas near the sea; large white flowers; small hairy strawberries
Fragaria vesca	Woodland strawberry	All, exc. L	**	0.2	P, SH	M, W	D	Occurs at low to subalpine elevations; large white flowers; produces small hairy strawberries
Fragaria virginiana	Wild strawberry	All, exc. L	*	0.2	P, SH	D	D	Occurs at low to subalpine elevations; large white flowers; small hairy strawberries; leaves often bluish-green on top
Gaultheria ovatifolia	Western tea-berry	G, L	*	.05	SH	M, W	E	Found at middle to subalpine elevations; flowers are pinkish-white; produces bright red berries
Kalmia microphylla ssp. *occidentalis*	Western bog-laurel	G, L	*	0.5	S	W	E	Generally in bogs and wet mountain meadows; rose-pink, saucer-shaped flowers
Linnaea borealis	Twinflower	All	**	0.1	SSH	M, W	E	Occurs at low to subalpine elevations; dry nutlets with sticky hairs that catch on fur of mammals and feathers of birds; pink, trumpet-like flowers in pairs appear in June and July; source of nectar for hummingbirds
Mahonia aquifolium	Tall Oregon grape	All	**	0.6	S, P	D	E	Occurs in low to middle elevations; bright yellow flowers in large clusters appear in late spring; clusters of blue berries ripen during summer
Mahonia nervosa	Dull Oregon grape	All	*	0.6	P, SH	D, M	E	Found at low to middle elevations; large clusters of bright yellow flowers occur in May and June; blue berries in clusters; year-round, but preferred winter, browse for elk
Oxycoccos oxycoccos	Bog cranberry	All		0.1-0.4	S	W	E	Occurs at low to middle elevations and in wet sub-alpine areas; flowers are deep pink; pale pink to dark red, juicy berries
Pachistima myrsinites	Falsebox	All	*	0.2-0.8	P, SH	D	E	Occurs at low to middle elevations; small, fragrant, maroon flowers in clusters; provides winter browse for deer
Rubus ursinus	Trailing blackberry	All		0.5	S	D	D	Occurs at low to middle elevations; large, pink to white flowers seen in April and May; black berries ripen in July and August; plant provides an important fall and winter source of food for deer
Tellima grandiflora	Fringecup	All	*	0.4-0.8	S, P	M	D	Common at low to middle elevations; fragrant greenish-white to reddish flowers loosely clustered on flower stems from mid-April through May
PERENNIALS								
Achlys triphylla	Vanilla-leaf	All, exc.G	*	0.1-0.3	SH	M	D	Occurs in forests and along forest edges at low to middle elevations; white flowers in spike
Achillea millefolium	Yarrow	All	**	0.5-1	S, P	D	D	Occurs at low to high elevations; white to pinkish or reddish flowers bloom in June through July; aromatic herb; thrives on poor sandy or gravelly soils

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Anaphalis margaritacea	Pearly everlasting	All	*	0.3-1	S, P	D	D	Widespread from low to subalpine elevations; heads of small yellowish disk flowers; dry, pearly white bracts; mid-summer (July and August) blooms last well into fall; tolerant to unfavourable conditions; preferred summer browse for deer
Angelica genuflexa	Kneeling angelica	All	*	1	P, SH	M, W	D	Sporadic at low to middle elevations; small white to pinkish flowers arranged in compact heads that form umbrella shapes; attracts butterflies
Aquilegia formosa	Red columbine	All	*	1	S, P	M	D	Common from low elevation to timberline in a variety of habitats; yellow to red flowers, appearing in May through June, attract hummingbirds and butterflies
Aruncus sylvester	Goat's beard	All	*	1-2	SH	M	D	Occurs at low to middle elevations in various types of edge habitat; tiny white flowers on branching, elongate clusters bloom in late May and June
Asarum caudatum	Wild ginger	All	*	.05-0.2	SH	M	E	Common at low to middle elevations; purplish-brown to greenish-yellow flowers; deliciously scented
Camassia leichtlinii (Yellow List)	Great camas	S, N, L	*	0.7	S	M	D	Occurs at low to middle elevations; pale to deep blue flowers in terminal spikes; never more than one to three fully open flowers at a time
Camassia quamash (Yellow List)	Common camas	S, N, L	*	0.7	S	M	D	Found at low to middle elevations; pale to deep blue flowers in terminal spikes bloom from April through June
Claytonia sibirica *(Montia sibirica)*	Siberian miner's lettuce	All	*	0.1-0.4	SH	M	D	Occurs at low to middle elevations; tiny white to pink flowers in clusters appear from April through May
Clintonia uniflora	Queen's cup	All	*	0.2	P, SH	M	D	Occurs in moist forest and forest openings at low to subalpine elevations; large white flowers, each on a long stalk, occur through May and June; dark blue berries follow the flowers
Dicentra formosa	Pacific bleeding heart	All	*	0.5	SH	M	D	Common at low to middle elevations; pinkish-purple, heart-shaped flowers in May and early June attract hummingbirds; produces pod-like seed capsules; seeds are spread by ants
Disporum hookeri	Hooker's fairybell	All	*	1	SH	M	D	In moist coniferous and mixed forests at low elevations; creamy-white, bell-shaped flowers; orange-red berries with seeds
Dodecatheon pulchellum	Few-flowered shootingstar	All	*	0.1-0.5	S, P	M, W	D	Occurrence varies from low to alpine elevations; magenta to lavender flowers, with petals swept back, that bloom March through May; pollen can be dislodged by sound waves set up by buzzing of bumblebees
Epilobium angustifolium	Fireweed	All		0.8-3	S	D, M	D	Occurs in disturbed areas, such as clearings, roadsides, and recent burn sites; rose to purple flowers on a long cluster that bloom through June and July; bees are attracted to the flowers, which produce ample nectar; spring source of food for deer

Name – Scientific	Name – Common	Ecosection	Availability	Height (m)	Sun Exposure	Moisture Preference	Foliage Type	Examples of some wildlife habitat values and other notes of interest
Erythronium oregonum (Yellow List)	White fawn lily	All, exc. L	*	0.3	SSH	M	D	Found at low elevations in open grassy areas and woodlands; white flowers
Fritillaria camschatcensis	Northern rice root	All	*	0.6	S, P	M, W	D	Occurs at low to subalpine elevations; bell-shaped, bronze to purple-brown flowers; pollinated by flies attracted to the flowers by their color and smell of rotting meat
Fritillaria lanceolata	Chocolate lily	All	*	0.8	S, P	M	D	Found from sea level to nearly subalpine; bell-shaped dark purple flowers with greenish-yellow mottling appear April through May
Goodyera oblongifolia	Rattlesnake plantain	All	*	0.4	SH	D, M	E	Occurs at low to middle elevations; dull white to greenish flowers, clustered in a long spike, bloom during the summer
Heracleum lanatum	Cow-parsnip	All	*	1	S, P	D	D	Occurs at low to subalpine elevations; small white flowers in umbrella-like clusters appear in May through June; attracts butterflies
Heuchera micrantha	Small flower alumroot	All	*	0.2-0.6	S	M	D	Common from low to subalpine elevations; small white flowers in open clusters appear in May and June
Lysichiton americanum	Skunk cabbage	All	*	0.3-1.5	SSH	W	D	Found in swamps and wet forest areas at low to middle elevations; greenish-yellow flowers on a spike hooded by bright yellow bract; blooms in March through April; skunky odor when flowering
Maianthemum dilatatum	False lily-of-the-valley	All	*	0.1-0.4	SH	M, W	D	Occurs at low to middle elevations; small white flowers in cylindrical clusters bloom from May to June; fruits are small red berries
Mitella breweri	Brewer's mitrewort	L	*	0.2-0.4	SH	M	D	Occurs from middle to subalpine elevations; small greenish-yellow flowers in long narrow clusters
Mitella caulescens	Leafy mitrewort	All	*	0.2-0.4	SH	M	D	Occurs in wet open areas and shaded forests from low to middle elevations; flowers are greenish-yellow in elongate clusters
Petasites palmatus	Palmate coltsfoot	All	*	0.1-0.5	P, SH	M, W	D	Occurs at low to middle elevations in forests, thickets, swamps, and clearings; creamy-white to pinkish flowers appear in late spring through early summer
Pyrola secunda	One-sided wintergreen	All		.05-.20	SH	D, M	E	From low to subalpine elevations; pale-green to white, bell-shaped flowers
Ranunculus uncinatus	Small-flowered buttercup	All		0.2-0.9	SH	M	D	Common at low to middle elevations in shady thickets, open forest, and meadows; tiny yellow flowers at ends of stalks bloom in late spring to early summer
Sedum spathulifolium	Broad-leaved stonecrop	S, N	*	0.2	S	D	D	Occurs at low to middle elevations in coarse soils and rocky areas; bright yellow flowers appear in May through June
Smilacina racemosa	False Solomon's-seal	All	*	0.3-1	P, SH	M	D	Occurs at low to subalpine elevations; small, creamy-white flowers in clusters in May and early June; loose clusters of red berries appear after the flowers

Name – Scientific	Name – Common	Ecosection	Availability	Height (m)	Sun Exposure	Moisture Preference	Foliage Type	Examples of some wildlife habitat values and other notes of interest
Smilacina stellata	Star-flowered false Solomon's-seal	All	*	0.2-0.6	P, SH	M	D	Found in moist deciduous forests and in clearings, from low elevation to near treeline; creamy-white star-shaped flowers in clusters bloom in late April through May; ripened berries are dark blue to reddish-black
Stachys cooleyae	Cooley's hedge-nettle	All		0.7-1.5	S, P	M	D	Common at low elevations along forest edges and in clearings; deep red-purple flowers in terminal clusters; the deep-throated flowers are attractive to hummingbirds
Tolmeia menziesii	Piggyback plant	All	*	0.4-0.8	P, SH	M	D	Occurs at low to middle elevations; brownish-purple flowers in long clusters; produces elongate seed capsules
Streptopus amplexifolius	Clasping twistedstalk	All		0.4-1	P, SH	M	D	Widespread from low to subalpine elevations; bell-shaped, greenish-white flowers appear in May and early June; produces reddish to dark purple berries after the flowers
Streptopus roseus	Rosy twistedstalk	All		0.2-0.3	P, SH	M	D	Occurs in forests, clearings, and along streambanks from low to subalpine elevations; bell-shaped, rose flowers with white tips appear in May and early June; produces red berries
Trillium ovatum	Western trillium	All	*	0.4	P, SH	M, W	D	Occurs at low elevations; white three-petaled flowers that bloom from April through May; each seed has tiny, oil-rich appendage attractive to ants, which haul them back to their nests, eat the appendage or feed it to their larvae, and then discard the seed, thereby contributing to seed dispersal
Viola glabella	Stream violet	All	*	0.5	P, SH	M, W	D	Found at all elevations in moist forests, clearings, and along streams; yellow flowers with purple lines
Viola langsdorfii	Alaska violet	All		0.2	S, P	M, W	D	Common in low elevation coastal boggy areas; bluish-violet flowers with dark pencilled lower petals; pencilling serves as honey guide to lure bumblebees or butterflies
Viola sempervirens	Trailing yellow violet	All	*	.08	SH	M	E	Occurs at low to middle elevations; pale yellow flowers; some violet seeds have outgrowths called oil-bodies; ants carry away the seeds to eat the oil-bodies, thus dispersing the seeds
FERNS								
Adiantum pedatum	Maidenhair fern	All	*	0.3-0.5	SH	M	D	Generally found at low to middle elevations in moist, shady, humus-rich areas; black-stemmed; delicate; palmately branched
Athyrium felix-femina	Lady fern	All	*	2	P, SH	M, W	D	Occurs at various elevations in forests, thickets, swamps, and clearings; spreading, erect fronds
Blechnum spicant	Deer fern	All	*	0.2-0.8	P, SH	M, W	E	Found in lowlands and at middle to subalpine elevations; important source of winter food for deer and elk; deer rub their antler stubs on the leaves after their antlers fall off

Name – Scientific	Name – Common	Ecosection	Availability	Height (m)	Sun Exposure	Moisture Preference	Foliage Type	Examples of some wildlife habitat values and other notes of interest
Cryptogramma crispa	Parsley fern	All	*	0.2-0.3	S, P	D	E	Occurs at low to high elevations in relatively dry, open, rocky or talused areas; appears densely clustered
Cystopteris fragilis	Fragile fern	All	*	0.3	S, P	D, M	D	Found in rocky forests, slopes, and clearings at various elevations
Dryopteris expansa	Spiny wood fern	All	*	1	P, SH	M	D	Occurs at low to subalpine elevations; broadly triangular fronds are clustered and erect to spreading
Dryopteris arguta (Blue List)	Coastal wood fern	All exc. L	*	1	S, P	M	E	Found at low elevations; broad, erect to spreading fronds; similar to spiny wood fern
Gymnocarpium dryopteris	Oak fern	All	*	0.4	P, SH	M	D	Occurs at low to subalpine elevations; usually in moist forests and clearings, but also found on rocky slopes; does not grow on or near oaks
Polypodium glycyrrhiza	Licorice fern	All	*	0.7	SH	W	E	Occurs on mossy logs and wet ground at low elevations; also epiphytic on bigleaf maples, where it dies back during summer months
Polystichum munitum	Sword fern	All	*	1.5	P, SH	M	E	Generally found in moist forests at low to middle elevations; becomes quite large with erect to spreading fronds
Pteridium aquilinum	Bracken fern	All	*	3	P, SH	D, M, W	D	Occurs at low to subalpine elevations; large, solitary, erect fronds; young fiddleheads eaten by deer; due to health implications, humans should not eat these ferns
Thelypteris phegopteris	Narrow beech fern	All	*	0.4	P, SH	M, W	D	Found at low to subalpine elevations; prefers moist forests, stream edges, and boggy areas

Bunchberry

TABLE 2: NON-NATIVE PLANTS

The following is a list of non-native plants that benefit wildlife in the Georgia Depression Ecoprovince.

Key to Table 2:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Sun exposure

S	Full sun
P	Partial sun; partial shade
SH	Shade
SSH	Sun or partial shade

Moisture preference

D	Dry
M	Moist
W	Wet
DT	Drought Tolerant

Foliage Type

D	Deciduous
E	Evergreen

Name – Scientific	Name – Common	Height (m)	Sun Exposure	Moisture Preference	Foliage Type	Wildlife values
TREES						
Acer ginnala	Amur Maple	5	S, P	D, M	D	Provides good shelter
Elaegnus angustifolia	Russian Olive	6	S, P	D, DT	D	Fruit ripens in summer and persists into winter
Ilex aquilfolium	English Holly	3-10	S, P	M	E	Need male and female plants to produce berries
Juniperus spp.	Juniper	1-3	S, P	D, M, DT	E	Provides shelter and produces berries in late summer
Malus spp.	Crabapple	4-10	S, P	D, M	D	Birds prefer small fruits that can be readily plucked and swallowed
Picea spp.	Spruce	12-20	S, P	D, M	E	Provides winter shelter and seeds
Pinus spp.	Pine	5-20	SSH	D, M, DT	E	Provides winter shelter and seeds
Prunus spp.	Cherry trees	4-6	S, P	D, M	D	Fruit in summer and fall attracts a wide variety of birds
Thuja occidentalis	Cedar	10-15	S, P	M	E	Provides winter shelter and seeds
SHRUBS AND BUSHES						
Buddleia davidii	Butterfly Bush	2	S	D, M	D	Attracts butterflies, moths, and hummingbirds
Chaenomeles spp.	Flowering Quince	1	S, P	D, M	D	Red flowers attract hummingbirds
Cornus alba	Tatarian Dogwood	2	SHH	D, M	D	Fruit ripens summer to fall; insects enhance the allure
Corylus cornuta	Hazelnut	3	S	D, M	D	Nuts produced in late summer, eaten by grouse, jays and squirrels
Cotoneaster spp.	Cotoneaster	1-3	S, P	M, D	D/E	Fruit attracts birds
Ligustrum amurense	Amur Privet	3	S, P	D, M, DT	D	Good hedge that provides shelter when not sheared; produces berry-like drupes in fall
Lonicera tatarica	Honeysuckle	3	SSH	D, M	D	Cultivars with red flowers attact hummingbirds; also has abundant red fruit

Name – Scientific	Name – Common	Height (m)	Sun Exposure	Moisrure Preference	Foliage Type	Wildlife values
Photinia serrulata	Photinia	4	S, P	D, M	E	White flowers followed by small red berries
Pyracantha coccinea	Firethorn	2	S, P	D, M	E	Profuse berries persist into winter
Rosa multiflo r a	M u l t i f l o a Rose	2	S	D, DT	D	Shrub rose makes a good hedge that provides shelter and small red fruit
Rubus discolor	Himalayan Blackberry	2	S, P	D, M	E	Not recommended for planting as this species is extremely invasive. Consider retaining a portion if it is already established on the property. Blackberry thickets provide excellent shelter and edible fruit.
Shepherdia argentea	Silver Buffalo Berry	5	SSH	D, M	D	Needs male and female flowers to produce red-orange berries in summer; good hedge plant
Viburnum lentago	Nannyberry	4	SSH	D, M	D	Blue-black drupes persistent into winter
Viburnum opulus	European Highbush Cranberry	3	S, P	D, M	D	Red drupes persistent into winter
Viburnum trilobum	Highbush Cranberry	3	S, P	D, M	D	Similar to *V. opulus*, but has edible fruit
Weigela fbrida	Weigela	2	S, P	D, M	D	Flowers attract bees and hummingbirds
VINES						
Celastrusscandens	American Bittersweet	6	S	D,M	D	Need male and female plants to obtain orange-red berries
Lonicera brownii 'Dropmore Scarlet"	Honeysuckle	3	S, P	D, M	D	Attracts bees and hummingbirds
Parthenocissus quinquefolia	Virginia Creeper or Boston Ivy	10	SSH	D, M	D	Provides cover and small dark fruit in winter
Vitis spp.	Grape	10	S, P	M	D	Provides fruit and good nesting sites for some birds

Table 3: Butterflies and Moths

Although the following list of butterflies and moths is extensive, it covers those most likely to be seen in the Georgia Depression Ecoprovince, and therefore, is by no means all inclusive.

Key to Table 3:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Abundance

C	Common
U	Uncommon

Type of Occurrence

G	Found generally
L	Found in specific locations

Adult butterflies feed on the flower nectar of many plants, including cotoneaster, buddleia, dandelion, thistles, lobelia, cow parsnip, daisies, asters, pearly everlasting, yarrow, goldenrod, mock orange, clover, Labrador tea, bog laurel, stonecrop, dame's rocket, and lilac.

Western Tiger Swallowtail

Hawk Moth

Name – Scientific	Name – Common	Ecosections	Abundance and Type of Occurrence	Larval Food Plants	Habitat and Natural History
LEPIDOPTERA	**BUTTERFLIES AND MOTHS**				
Ochlodes sylvanoides	Western skipper	All	C, G	Grasses	Frequents open areas in summer
Pyrgus ruralis	Two-banded checkered skipper	All	C, G	Grasses	Frequents open areas in summer
Papilio zelicaon	Anise swallowtail	All	C, L	Leaves of cow parsnip, seaside angelica, water parsley, fennel, and lomatium	Frequents open meadows and gardens in May and June, plus July to September in some areas
Papilio rutulus	Western tiger swallowtail	All	C, G	Leaves of poplar, willow, birch, and bitter cherry	Frequents mixed and deciduous forests and open areas in May to July
Pterourus eurymedon	Pale swallowtail	All	U, G	Leaves of alder	Flight during May and June
Neophasia menapia	Pine white	All	C, L	Needles of Douglas-fir and pine	Flight during end of July and beginning of August
Anthocharis sara	Orange tip	All	C, L	Leaves of rock cress	Frequents meadows and edges of woods from early April to early May
Pieris rapae	Cabbage butterfly	All	C, G	Plants of cabbage family, mustard family, and saskatoon bush	Flight from end of March through October; our commonest butterfly; introduced from Europe
Pieris napi	Veined white	F, N	C, L	Plants of mustard family and winter cress, dame's rocket, and dollar plant	Flight from April through July, and again in September in some areas
Incisalia augustinus	Brown elfin	All	C, L	Flowers, buds and seeds of salal, arbutus, bog laurel, and Labrador tea	Flight during April and May along forest edges and in clearings; generally flies close to the soil
Incisalia eryphon	Pine elfin	All	C, L	Buds and seeds of pine and fir	Flight during April and May
Strymon melinus	Grey hairstreak	All	U, G	Possibly sweet clover and clover	Flight from May to August
Mitoura rosneri	Rosner's hairstreak	All	C, L	Western redcedar and hemlock	Flight from April to June
Mitoura johnsoni	Johnson's hairstreak	F	U, L	Dwarf mistletoe, which is a parasite on hemlock	Flight during May and June; nationally endangered
Epidemia helloides	Purplish copper	All	C, L	Leaves of dock, sorrel, and bistort	Flight from May to July
Epidemia mariposa	Reakirt's copper	F, N, L	C, L	Leaves of bog cranberry and arctic bilberry	Flight from June to beginning of August
Celastrina argiolis	Spring azure	All	C, G	Leaves of spirea, oceanspray, and hawthorn	Frequents rich, moist woods from April to July; caterpillars exude a honeydew that attracts ants
Limenitis lorquini	Lorquin's admiral	All	C, G	Leaves of spirea, willow, poplar, birch, bitter cherry, apple, cotoneaster, and Saskatoon bush	Flight during June and July, and sometimes August and September
Vanessa atalanta	Red admiral	All	C, U to G	Leaves of stinging nettles	Flight from April to October; frequents deciduous forest edges and adjacent meadows; common some years, rarely seen in others; possibly migratory

Name – Scientific	Name – Common	Ecosections	Abundance and Type of Occurrence	Larval Food Plants	Habitat and Natural History
Vanessa cardui	Painted lady	All	C, U to G	Leaves of thistle, mallow, pearly everlasting, and heliotrope	Flight from April to October; frequents meadows and gardens; common some years, rarely seen in others; migratory
Vanessa annabella	West coast lady	All	C, U to G	Leaves of stinging nettle and mallow	Flight from April to October; generally seen less often than painted lady; migratory
Nymphalis antiopa	Mourning cloak	All	U, G	Leaves of willow	Flight from July to October and March to May; overwinters as a butterfly, frequents deciduous and mixed woods, meadows, and parks
Aglais milberti	Milbert's tortoiseshell	All	C, G	Leaves of stinging nettle	Flight from April to October; frequents wet meadows and swampy edges of deciduous forest; possibly migratory
Polygonia satyrus	Satyr anglewing	All	C, G	Leaves of stinging nettle	Flight from April to October
Phyciodes mylitta	Mylitta crescent	N, S	C, L	Leaves of thistles	Flight from May to July
Coenonympha tullia	Plain ringlet	N	C, L	Various species of grasses	Flight from April to July; the local subspecies is vulnerable
Cercyonis pegala	Common wood nymph	G, N	C, L	Various species of grasses	Flight from June to August; frequents deciduous and mixed woodlands and adjacent meadows; flies erratically, often alighting on tree trunks
Acronicta dactylina	Alder dagger moth	All	C, G	Alder	Flight in June and July
Agrotis ipsilon	Black cutworm	All	C, G	Herbaceous plants	Flight in July and August
Alypia langtoni	Fireweed caterpillar	All	C, G	Fireweed	Flight in June and July
Anagrapha falcifer	Celery looper	All	C, G	Herbaceous plants	Flight from June to August
Anthraea polyphemus	Polyphemus moth	All	C, G	Deciduous trees and shrubs	Flight in May; adults don't feed
Apamea amputatrix	Yellowheaded cutworm	All	C, G	Roots of grasses	Flight during the summer months
Apamea devastator	Glassy cutworm	All	C, G	Roots of grasses	Flight during the summer months
Archips rosana	European leafroller	All	C, G	Low shurbs	Flight in June and July
Arctia caja	Great tiger moth	All	C, G	Herbaceous plants	Flight in June and July
Autographa californica	Alfalfa looper	All	C, G	Deciduous shrubs and low plants	Flight from May to August
Catocala relicta	White underwing	All	C, G	Birch	Flight during August
Chrysoteuchia topiaria	Cranberry girdler	All	C, G	Cranberry grasses and young conifers	Flight during July
Cydia pomonella	Codling moth	All	C, G	Apple and hawthorn	Flight from June to August
Estigmene acrea	Saltmarsh caterpillar	All	C, G	Low plants and shrubs	Flight during June and July
Feltia jaculifera	Dingy cutworm	All	C, G	Low herbaceous plants	Flight in July and August
Hemaris diffinis	Snowberry clearwing	All	C, G	Snowberry	Flight during May and June
Hyalophora euryalis	Ceanothus moth	All	C, G	Douglas-fir and ceanothus	Flight during May
Hyles lineata	White-lined sphinx	All	C, G	Fireweed	Flight from May to August

Name – Scientific	Name – Common	Ecosections	Abundance and Type of Occurrence	Larval Food Plants	Habitat and Natural History
Lothocampa argentata	Silver spotted tiger moth	All	C, G	Hemlock and other conifers	Flight in June and July
Malacasoma disstria	Forest tent caterpillar	All	C, G	Deciduous shrubs and trees	Flight during July
Mamestra configurata	Bertha armyworm	All	C, G	Low herbaceous plants	Flight in July and August
Melanchra picta	Zebra caterpillar	All	C, G	Low herbaceous plants	Flight from June to September
Operophtera bruceata	Bruce spanworm	All	C, G	Deciduous trees and shrubs	Flight during November and December
Operophtera brumata	Winter moth	All	C, G	Deciduous trees and shrubs	Flight in November and December
Orgyia pseudotsugata	Douglas-fir tussock moth	All	C, G	Douglas-fir	Flight during the summer months
Orthosia hibisci	Speckled green fruitworm	All	C, G	Deciduous trees and shrubs	Flight from February to April
Paonias exaecatus	Blind eyed sphinx	All	C, G	Deciduous trees	Flight during June and July

Uncommon Butterflies, Georgia Basin

Parnassius clodius, Clodius parnassian

Pontia occidentalis, Western white

Colias philodice, Clouded sulphur

Colias eurytheme, Alfalfa butterfly

Vanessa virginiensis, American painted lady

Nymphalis vau-album, Compton's tortoiseshell

Nymphalis californica, California tortoiseshell

Polygonia zephyrus, Zephyr anglewing

Speyeria hydaspe, Hydaspe fritillary

Clossiana epithore, Western meadow fritillary

Phyciodes pratensis, Field crescent

Danaus plexippus, Monarch

Glaucopsyche lygdamus, Silvery blue

Everes comyntas, Western tailed blue

Satyrium acadicum, Acadian hairstreak

Erynnis icelus, Dreamy dusky wing

Carterocephalus palaemon, Arctic skipper

Thymelicus lineola, European skipperling

Butterflies of conservation concern in British Columbia are generally seen in a very few locations and include Johnson's hairstreak (see table) and subspecies of Plain ringlet (see table) and Propertius dusty wing (*Erynnis propertius*).

In the Georgia Depression Ecoprovince, the following butterflies occur only on Vancouver Island, and are represented by subspecies unique to that area. All are of conservation concern. They include:

Mitoura barryi, Barry's hairstreak

Incisalia mossii, Moss's elfin

Plebejus saepolius, Greenish blue

Icaricia icarioides, Icarioides blue

Speyeria zerene, Zerene fritillary

Euphydryas editha, Edith's checkerspot

Euphyes vestris, Dun skipper

The Vancouver Island subspecies of Large marble (*Euchloe ausonides*) is extinct, and the Chalcedon checkerspot's (*Euphydryas phaeton*) Vancouver Island subspecies is extirpated.

TABLE 4: AMPHIBIANS AND REPTILES

Key to Table 4:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Occurrence beyond natural wild areas, if habitat provided:

Occasional	u	urban areas
	r	rural areas
Common	U	Urban areas
	R	Rural areas

Occurrence will vary with relative location in the Georgia Depression Ecoprovince and with local proximity to areas of existing amphibian and reptile habitats.

Reminder: It is in the interest of both you and amphibians that you avoid handling them. They may have toxic skin secretions that are transferred to your hands. In turn, they may absorb, through their permeable skin, chemicals on your hands that are harmful to them, such as suntan oil or bug repellent. Furthermore, amphibians are often in danger of desiccation and handling them increases this risk.

Clouded Salamander

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
CAUDATA	**SALAMANDERS**				
Taricha granulosa	Rough-skinned Newt	All	u, r	Males and larvae prey on aquatic stages of insects and on crustaceans, worms, and tadpoles; females prey on spiders and centipedes	Males live in lakes, ponds, marshes, or slow-moving streams; females forage on shaded forest floor and migrate to water to breed and deposit eggs on aquatic plants in the water
Ambystoma macrodactylum	Long-toed Salamander	All	u, r	Preys on terrestrial invertebrates; larvae prey on aquatic invertebrates	Forages noctumally in damp areas; spends daylight hours under leaf litter, decaying logs, rocks, or underground; eggs attached to aquatic vegetation in temporal and permanent pools
Ambystoma gracile	Northwestern Salamander	All		Preys on worms, insects, and small terrestrial invertebrates, such as slugs; larvae prey on aquatic invertebrates	Forages in moist forests and grasslands; forages under leaf litter and other plant debris along stream banks; spends much of its time underground in burrows; requires permanent or semi-permanent ponds near forests for breeding
Dicamptodon ensatus (Red List)	Pacific Giant Salamander	F		Preys on slugs, insects, frogs, other salamanders; occasionally small mammals and garter snakes	Forages in Douglas-fir and bigleaf maple forests on slopes of hills and mountains; forages near creeks; hides under logs or rocks at stream edges; eggs laid on underside of rocks in creek
Plethodon vehiculum	Western Red-backed Salamander	F, N, L	u, r	Preys on terrestrial invertebrates	Forages in damp areas in forest leaf litter; retreats under decaying logs; eggs are laid on the sides or roof of moist hollows or crevices
Ensatina eschscholtzi	Ensatina (Oregon salamander)	All	u, r	Preys on terrestrial invertebrates	Forages in damp areas in forest leaf litter; retreats under rocks and decaying logs; eggs are laid in clusters under logs or bark
Aneides ferreus	Clouded Salamander	N & L		Preys on ants, mites, beetles, spiders, centipedes, and termites	Forages in damp, mossy Douglas-fir forests; generally forages at night in rotting logs and underneath bark and moss on dead stumps and trees; eggs are laid in rotting Douglas-fir logs
ANURA	**FROGS & TOADS**				
Ascaphus truei (Blue List)	Tailed Frog	F, G, L		Tadpoles feed on alga in water; adults feed on aquatic and terrestrial insects	Forages in mountain streams; eggs laid in clumps on underside of rocks in stream
Bufo boreas	Western Toad	All	u, r	Tadpoles feed on algae in water; adults feed on variety of terrestrial invertebrates	Forages primarily at night in damp, subterranean retreats beneath rocks, surface vegetation, and decaying logs; stays close to sources of water; eggs laid in long strings commonly entwined in submerged vegetation

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Hyla regilla	Pacific Treefrog	All	u, F	Tadpoles feed on algae in water; adults prey on flying insects and terrestrial invertebrates	Forages in low vegetation, damp subterranean retreats, and within stumps or decaying logs; migrates to source of shallow water for breeding and egg deposition
Rana aurora	Red-legged Frog	F, G, N, L		Tadpoles feed on algae; adults prey on insects and terrestrial invertebrates	Forages in forested areas along stream banks and around ponds
Rana pretiosa	Spotted Frog	F		Tadpoles feed on algae and leafy aquatic plants; adults prey on insects and secondarily on crayfish, sowbugs, millipedes, spiders, and slugs	Forages at edges of shallow, standing water of lakes, ponds, marshes, and streams; deposits eggs in shallows at water's edge
TESTUDINIDAE	**FRESH-WATER TURTLES**				
Chrysemys picta	Painted Turtle	All	u, r	Feeds in fresh water on algae, moss, snails, mussels, dragonflies, caterpillars, flies, beetles, wasps, and ants	Forages on the bottom of lakes and ponds in water depths of less than 3 m; basks in sun on offshore emergent boulders and fallen logs; nests in beaches and banks adjacent to water
SQUAMATA	**LIZARDS**				
Elgaria coerulea	Northern Alligator Lizard	F, N, L	u, r	Preys on beetles, aphids, grasshoppers, and spiders	Forages on ground in well-drained, sunny forest clearings and on talus slopes; retreats into rock fissures or beneath surface debris
SERPENTES	**SNAKES**				
Charina bottae (Blue List)	Rubber Boa	F		Preys on mice, voles, young squirrels, fish, lizards, and garter snakes	Forages in areas of active rodent burrows, often in vicinity of streams; retreats to rock fissures, burrows, stumps, decaying logs, under bark, and beneath rocks
Contia tenuis (Red List)	Sharp-tailed Snake	S & N		Preys mostly on slugs	Forages in moist woodlands and forests near streams; lays eggs; little known of natural history
Thamnophis sirtalis	Common Garter Snake	All	u, r	Preys on leeches, earthworms, slugs, fish, amphibians, fledgling birds, and small mammals	Forages in sunny areas adjacent to lakes, ponds, swamps, marshes, streams, and beaches; retreats to shallow subterranean cavities
Thamnophis ordinoides	Northwestern Garter Snake	All	u, r	Preys heavily on slugs and earthworms	Forages in thick grasses and undergrowth along sunny forest edges
Thamnophis elegans vagrans	Western Garter Snake	All	u, r	Preys on fresh water and marine invertebrates and fish, slugs, small rodents, snails, tadpoles, worms, salamanders, frogs, and toads	Forages in estuaries and in open areas immediately adjacent to beaches, lake shores, river banks, and edges of ponds and marshes; retreats under logs and other debris and into shallow subterranean cavities

Table 5: Birds

Although the following list of native bird species found in the Georgia Depression Ecoprovince is extensive, it is by no means all inclusive.

Key to Table 5:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Abundance

C	Common
U	Uncommon

Seasonal Occurrence

R	Resident year-round
M	Migratory

How to Attract (food, water, and shelter, if known)

B	Shrubs with red berries in fall
SE	Seeds in elevated feeder
SG	Seeds on ground
S	Suet or a suet/seed/peanut mix (bird pudding)
P	Peanuts
WS	Water-sugar mix
W	Water in bird bath
RW	Running Water
N	Nest box or platform

Great Blue Heron

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
CICONIIFORMES	**HERONS AND ALLIES**					
Ardea herodias	Great Blue Heron	All	C, R		Feeds primarily on fish; also eats aquatic invertebrates and small terrestrial vertebrates	Forages in and near marshes, swamps, lakes, and rivers, and along marine beaches; generally nests in deciduous trees, such as red alder, but will occasionally nest in coniferous trees; builds large stick nests
ANSERIFORMES	**SWANS, GEESE, & DUCKS**					
Aix sponsa	Wood Duck	All	U, M	N	Feeds primarily on aquatic invertebrates; also eats seeds, berries, grain, and terrestrial invertebrates	Forages in and around wooded swamps, sloughs, ponds, and marshes; nests in natural cavities in trees, including abandoned Pileated Woodpecker nesting holes
Anas platyrhynchos	Mallard	All	C, R		Feeds on water weeds and other vegetation, seeds, grain, aquatic invertebrates, small insects, and snails	Forages in and near shallow ponds, lakes, and marshes; nests on the ground amongst reeds, cattails, and grasses, and generally near water; occasionally nests in hollow logs
Lophodytes cucullatus	Hooded Merganser	All	U, R	N	Feeds mostly on fish, but also aquatic invertebrates, and insects	Forages near lakes, swamps, marshes, and estuaries; nests near water in tree cavities; will use nest boxes used by Wood Ducks
Mergus merganser	Common Merganser	All	C, R		Primarily feeds on fish; also eats aquatic invertebrates	Forages in lakes and river channels; nests near lakes and streams in mountainous and forested areas; nest site is usually a natural cavity in deciduous tree, but may also nest in a stream bank, rock crevice, or under shrubs
FALCONIFORMES	**VULTURES, HAWKS, & FALCONS**					
Cathartes aura	Turkey Vulture	All, esp. S & N	U, M		Feeds primarily on carrion; eats some refuse	Forages in open habitats at various elevations; nests on cliffs and in hollows in snags
Pandion haliaetus	Osprey	All	U, M	N	Feeds on a variety of fish and less commonly on crustaceans, amphibians, birds, and rodents	Forages over open water; nests adjacent to water in tall mature trees, either living or dead, coniferous or deciduous; will also nest on human-made structures
Haliaeetus leucocephalus (Blue List)	Bald Eagle	All	C, R		Preys largely on fish, but also feeds on birds, mammals, and, carrion	Forages over water near mature coniferous and mixed forest which offers snags and other high perches; nests are huge stick affairs high in coniferous trees; often reuses same nest year to year; also nests on rocky cliffs along or near shorelines

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Circus cyaneus	Northern Harrier	All, esp. F & N	U, R		Preys on small mammals, birds, amphibians, and snakes	Forages in open marshes, grasslands, and beaches; prefers to nest on slightly elevated ground in thick vegetation, such as cattails, tall grasses, and low shrubs
Accipiter striatus	Sharp-shinned Hawk	All	U, M		Preys primarily on small birds by chasing them through forested areas; occasionally feeds on small mammals, frogs, lizards, and insects	Forages in coniferous and mixed forests; prefers to nest in coniferous trees, but will also nest in deciduous trees; does not nest in this ecoprovince; often hunts at bird feeders and throughout residential neighbourhoods
Accipiter cooperii	Cooper's Hawk	All, esp. F & N	C, R		Preys on birds and small mammals; less commonly, feeds on reptiles and amphibians	Forages in deciduous forest and forest edges close to streams; nests in deciduous, sometimes coniferous, trees; often in or near residential areas
Accipiter gentilis	Northern Goshawk	All	U, M		Preys on birds and occasionally small mammals	Forages in mature coniferous and mixed forests; nests in limb joins and on limbs of live mature tree, either deciduous or coniferous; does not nest in this ecoprovince
Buteo jamaicensis	Red-tailed Hawk	All	U, R		Preys primarily on small mammals and birds and occasionally on reptiles, amphibians, and insects	Forages over open or semi-open forests and wetlands; nests in large mature trees, either coniferous or deciduous, near open areas
Buteo lagopus	Rough-legged Hawk	F, N	U, M		Preys on small mammals, insects, and occasionally birds	Forages in open grasslands and fields; nests in coniferous trees, rocky cliffs, and rarely on the ground; winter visitor; does not nest in this ecoprovince
Aquila chrysaetos	Golden Eagle	F, G, N, L	U, M		Preys on small mammals such as rodents and the young of larger mammals, and on birds, reptiles, and insects	Forages in open areas, especially in hills and mountains; nests on rocky cliffs and in deciduous or coniferous trees; mostly a winter visitor; rare nester in this ecoprovince
Falco sparverius	American Kestrel	All	U, M	N	Preys on small mammals, such as voles, mice, chipmunks, and squirrels; also eats insects, birds, and occasionally reptiles	Forages over open areas and along forest edges; nests in natural cavities or abandoned cavity nests in living deciduous or coniferous trees; hunts by hovering above the ground, or using perches from which to hunt and locate prey; rare nester in this ecoprovince
Falco columbarius	Merlin	All	U, M		Preys mostly on birds, but also feeds on insects, small amphibians, and small mammals	Forages in open or partly open areas with scattered deciduous trees; nests in stick nests, often abandoned crow nests, and less frequently in natural cavities and abandoned woodpecker holes in trees; rare nester in this ecoprovince
Falco peregrinus	Peregrine Falcon	All	U, M		Preys predominantly on birds, but will also feed on small mammals	Forages in open forest and grassland areas, along rivers, on islands, and from sea cliffs; nests in hollows on inaccessible cliff ledges and rarely in abandoned tree nests or cavity nests; rare nester in this ecoprovince

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
GALLIFORMES	**GALLINACEOUS BIRDS**					
Dendragapus obscurus	Blue Grouse	All	C, R		Feeds on seeds, berries and other fruit, insects, and green vegetation	Forages in open coniferous and mixed forests, shrubby lowlands, and mountain slopes; nests on the ground under branches of fallen trees, beside logs, or under shrubs
Bonasa umbellus	Ruffed Grouse	All	U, R		Feeds mostly on seeds, buds, leaves, flowers, and fruit; also eats insects, spiders, snails, and small vertebrates	Forages in deciduous and mixed forests with dense understory; nests on the ground near base of tree, under branches of fallen trees, and against logs
GRUIFORMES	**CRANES, RAILS, & ALLIES**					
Rallus limicola	Virginia Rail	F, N	U, R		Feeds on insects, aquatic invertebrates, snails, earthworms, and seeds	Forages in grassy marshes and wetlands; nests in reeds, cattails, and grasses, generally on land, but occasionally over water
Porzana carolina	Sora	F, N	U, R		Feeds on seeds, insects, snails and other aquatic invertebrates	Forages in grassy marshes and wet fields; generally builds floating nests; occasionally nests on ground in meadows
Fulica americana	American Coot	F, N	U, R		Feeds on water weeds, small shellfish, and shrimp, insects, and snails	Forages in grassy marshes, sloughs, ponds, and lakes; builds floating nest of reeds and rushes amongst vegetation at water's edge
CHARADRII-FORMES	**SHOREBIRDS, GULLS, & ALLIES**					
Charadrius vociferus	Killdeer	All	C, R		Feeds largely on insects; also eats a variety of invertebrates, and seeds of weed plants	Forages in grassy meadows, mud flats, fields, and along freshwater margins and the coast; nests on the ground in open, gravelly areas offering an extended view; nests may or may not be close to water
Haematopus bachmani	Black Oystercatcher	All	C, R		Feeds mainly on marine invertebrates; eats some fish	Forages along marine shorelines; nests on the ground along rocky or gravelly coastline and on offshore islets
Actitis macularia	Spotted Sandpiper	All	C, M		Feeds on insects, aquatic invertebrates, worms, and fish	Forages along the edges of ponds, lakes, and rivers at various elevations, and along grassy beaches; nests on the ground among rocks or vegetation
Gallinago gallinago	Common Snipe	All	C, R		Feeds on insects, earthworms, and aquatic invertebrates	Forages in the mud in damp, marshy areas, bogs, and along river banks; nests on the ground in grassy clumps under vegetative cover
Larus glaucescens	Glaucous-winged Gull	All	C, R		Feeds on aquatic invertebrates, fish, offal, and refuse	Forages along coastal beaches and at canneries, and fishing docks; nests on rock cliffs, offshore islets and breakwaters, as well as on human-made structures
Cepphus columba	Pigeon Guillemot	All	C, R		Feeds on fish and marine iinvertebrates	Forages by diving in shallow inshore waters nests in crevices in rock cliffs or in burrows under loose rocks and boulders

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Brachyramphus marmoratus	Marbled Murrelet	All	C, R		Feeds on fish and aquatic invertebrates, especially crustaceans	Forages along the coast near coniferous forests; nests on the ground on islands or well inland, in rock crevices, and high in trees
COLUMBI-FORMES	**PIGEONS & DOVES**					
Columba fasciata	Band-tailed Pigeon	All	C, R		Feeds on nuts, especially acorns; also eats grain and other seeds; in winter eats berries remaining on trees and shrubs	Forages in foliage and on the ground in mixed woodlands and at low elevations of mountain slopes near coniferous forests; nests in coniferous trees, less commonly in deciduous trees
STRINGIFORMES	**OWLS**					
Tyto alba (Blue List)	Barn Owl	F, N	U, R	N (retain old barns)	Preys on rodents, especially voles and shrews, and on birds; rarely feeds on amphibians, reptiles, and insects	Forages in open grasslands and partly open areas with scattered trees; nests in snags and crevices in cliffs; also nests in old barns and other buildings
Otus kennicottii	Western Screech Owl	All	U, R	N	Preys on rodents and other small mammals; also eats insects, amphibians, fish, and birds	Forages in clearings in mixed forests and along stream courses; nests in abandoned woodpecker holes or natural cavities in snags
Bubo virginianus	Great Horned Owl	All	U, R		Preys on rabbits, rodents, birds, the young of larger mammals and occasionally the larger mammals themselves	Forages in open coniferous, mixed, and deciduous forests; prefers dense conifers for nesting and shelter; nests in abandoned hawk, crow, or eagle nests or in tops of broken snags and trees
Glaucidium gnoma	Northern Pygmy Owl	F, G, N, L	U, R		Preys on small mammals, mostly rodents, as well as birds, insects, and amphibians	Forages in mixed deciduous/coniferous forests; nests in abandoned woodpecker holes and in natural cavities in snags
Strix occidentalis (Red List)	Spotted Owl	F, G	U, R		Preys on rodents, birds, reptiles, and insects	Forages in mature coniferous forests and densely wooded canyons; nests in natural cavities in trees and canyon walls; also makes use of abandoned stick nests
Strix varia	Barred Owl	All	U, R	N	Preys on squirrels, mice, voles, and birds	Forages in forests, open forests, aquatic habitats, and residential areas; nests in natural cavities in snags or in abandoned nest holes in trees in dense forest near water
Asio otus	Long-eared Owl	F	U, R		Preys mostly on small mammals, such as rodents, and less commonly on birds; rarely feeds on amphibians, reptiles, fish, and insects	Forages in coniferous and mixed forests, especially near water; nests in abandoned nests in deciduous trees and rarely on the ground; rare nester in this ecoprovince
Asio flammeus (Blue List)	Short-eared Owl	F, N	U, R		Preys almost entirely on field mice; also eats other small rodents	Forages over open grasslands, marshes, and forest clearings; nests on the ground in grass-lined depressions with good shrub cover

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Aegolius acadicus	Northern Saw-whet Owl	All	U, R	N	Preys on voles, mice, shrews, thrushes, juncos, sparrows, and finches; occasionally feeds on amphibians and insects	Forages within open forests and along forest edges; nests in natural and animal-made cavities in snags and living coniferous and deciduous trees
CAPRIMULGIDAE	**NIGHTJARS**					
Chordeiles minor	Common Nighthawk	All	U, M		Feeds mostly on insects	Forages in open woodlands, fields, and grasslands; generally nests on the ground, but may nest on stumps and flat gravel roofs
APODIFORMES	**SWIFTS & HUMMINGBIRDS**					
Cypseloides niger	Black Swift	All	U, M		Feeds largely on flies and swarms of other tiny flying insects	Forages over wide areas in the mountains and coastal cliffs; nests on ledges or in rock crevices, often near or behind a waterfall; nests in colonies
Chaetura vauxi	Vaux's Swift	All	U, M		Feeds on flying insects	Forages over forests which contain snags and over water away from the trees; nests in hollows in snag trees
Calypte anna	Anna's Hummingbird	All	U, M (some R)	WS	Feeds on nectar, insects, spiders, and tree sap	Forages in open forests and beyond forest edges; prefers to nest in deciduous trees, but also uses shrubs in residential areas
Selasphorus rufus	Rufous Hummingbird	All	C, M	WS	Feeds on nectar, spiders, and tree sap	Forages in coniferous forests, thickets and brushy slopes, and in adjacent meadows; nests in coniferous trees, deciduous trees, and in vine tangles
CORACIIFORMES	**KINGFISHERS**					
Ceryle alcyon	Belted Kingfisher	All	C, R		Preys mostly on fish, occasionally on aquatic invertebrates, amphibians, reptiles, insects, young birds, mice; rarely eats berries	Forages along open watercourses, both freshwater and marine; nests in burrows in vertical banks near water and less commonly in tree cavities; no nesting material is used, but by the time the eggs hatch a pile of fish bones has accumulated under the clutch
PICIFORMES	**WOODPECKERS**					
Sphyrapicus ruber	Red-breasted Sapsucker	All	U, R		Feeds on insects, especially ants, tree sap, and fruit	Forages in mixed deciduous and coniferous forests; nests in living deciduous trees, such as alder, cottonwood, and aspen; deciduous snags also used for nesting; winter visitor to residential areas and city parks
Picoides pubescens	Downy Woodpecker	All	C, R	S N SE	Feeds mainly on insects and some fruits and seeds; forages for insects on the surface and subsurface of trees	Forages in mixed and deciduous forests with sparse to moderate canopy closure, usually near water; nests in excavated cavities in living and dead deciduous trees near forest edges; prefers trembling aspen, red alder, and black cottonwood as nest trees, but will also use arbutus, Douglas-fir, and bigleaf maple

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Picoides villosus	Hairy Woodpecker	All	C, R	S N SE	Feeds mainly on insects and small quantities of vegetation; forages for insects on surface and subsurface of trees	Forages in dense, mature deciduous and mixed forests with open edges; nests in excavated cavities in living and dead deciduous and coniferous trees; prefers trembling aspen, red alder, and birch as nest trees, but will also use arbutus, Douglas-fir, and bigleaf maple
Picoides tridactylus	Three-toed Woodpecker	F	U, R		Feeds on wood-boring insects, such as wood-boring beetle larvae, caterpillars, and small amounts of fruit and soft tree bark; attracted to bark-beetle and spruce borer infestations	Forages in coniferous and mixed forests; nests in excavated cavities in dead and living coniferous or deciduous trees; prefers spruce, lodgepole pine, and trembling aspen as nest trees, but will also use arbutus, Douglas-fir, and bigleaf maple
Colaptes auratus	Northern Flicker	All	C, R	P N SE	Feeds on insects, especially ants, and limited amounts of nuts and small fruits; catches insects from a perch, forages for them on the ground, and probes for insects on tree surfaces	Forages in open forests of mixed coniferous and deciduous trees and at forest edges; nests in cavities in living trees or snags, deciduous or coniferous; nest cavities are often used again in successive years
Dryocopus pileatus	Pileated Woodpecker	All	U, R	N	Feeds mostly on insects, some fruit, acorns, nuts, and sap; feeds on dogwood berries in August	Forages in mixed deciduous/coniferous forests, open forests, and forest edges; nests in holes excavated in large snags

Pileated Woodpecker

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
PASSERIFORMES	**PERCHING BIRDS**					
Tyrannidae	Flycatchers					
Contopus borealis	Olive-sided Flycatcher	L, N	C, M		Feeds exclusively on insects that can be captured in air	Forages in open coniferous and mixed forests with abundant dead trees; nests high in coniferous trees and less commonly deciduous trees
Contopus sordidulus	Western Wood-Pewee	All	U, M		Feeds almost entirely on insects, supplemented by a few berries	Forages in coniferous and mixed forests, forest edges, and along streams; nests in coniferous trees on horizontal limbs far from trunks
Empidonax traillii	Willow Flycatcher	All	C, M		Feeds on insects, berries, and occasionally seeds	Forages in open areas, such as streams, meadows, and swamps, with willow or alder thickets; nests in low deciduous bushes
Empidonax hammondii	Hammond's Flycatcher	All	C, M		Feeds exclusively on insects	Forages in dense coniferous and mixed forests; nests on horizontal limbs of tall coniferous trees and occasionally deciduous trees
Empidonax difficilis	Pacific-slope Flycatcher	All	C, M		Feeds mostly on insects, but also some berries and seeds	Forages in deciduous and coniferous forests, especially near water; nests in deciduous trees, roots of upturned trees, in stream banks, rock cliffs, and on the ground
Hirundinidae	Swallows					
Progne subis (Red List)	Purple Martin	N	U, M	N	Feeds almost entirely on insects; occasionally forages on ground for ants	Forages in open and rural areas, especially near water; nests in cavities and old woodpecker holes in dead trees, in cliff crevices, and also in bird houses
Tachycineta bicolor	Tree Swallow	All	C, M	N	Feeds largely on insects, such as flying insects, ants, beetles, dragonflies, and on spiders; occasionally eats berries	Forages in open areas, such as wet mountain meadows, marshlands, pond and lake margins, and along forest edges, generally near water; nests in natural cavities, woodpecker holes in snags, and in nest boxes
Tachycineta thalassina	Violet-green Swallow	All	C, M	N	Feeds exclusively on insects; rarely forages for them on the ground	Forages in open coniferous and mixed forests; nests in abandoned woodpecker holes or natural cavities in snags and under the eaves of buildings
Stelgidopteryx serripennis	Northern Rough-winged Swallow	All	C, M		Feeds entirely on insects; will occasionally forage for insects on the ground	Forages in open areas, such as grasslands, close to running water; nests in abandoned burrows in river banks, crevices in cliffs, and in culverts
Hirundo pyrrhonota	Cliff Swallow	All	C, M		Feeds primarily on insects; occasionally eats large quantities of berries	Forages in open grasslands near running water; nests on undersides of bridges, on rocky cliff faces, and walls under eaves; nests in colonies

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Hirundo rustica	Barn Swallow	All	C, M	N	Feeds mostly on insects, some berries, and seeds	Forages in open grasslands and rural areas, generally near marshes; prefers open nests of mud and grass attached to upper parts of walls or other vertical structures of buildings; may nest in colonies
Corvidae	**Jays, Magpies, & Crows**					
Perisoreus canadensis	Gray Jay	L	U, R	P	Feeds on insects, fruit, and small vertebrates	Forages in coniferous and mixed forests, open forests, and bogs; nests on horizontal branches of coniferous trees and occasionally in deciduous trees
Cyanocitta stelleri	Steller's Jay	All	C, R	SE, P	Feeds on acorns, pine seeds, insects, other small invertebrates and vertebrates, fruits, bird eggs, and nestlings	Forages in coniferous and mixed forests; often congregates in trees when feeding; nests on horizontal branches of coniferous trees; may use deciduous trees and tall shrubs
Corvus caurinus	Northwestern Crow	All, exc. L	C, R	P	Feeds on marine invertebrates, insects, bird eggs and nestlings, fruits, and some seeds	Forages in coastal tidelands and forest edges near coniferous forests; nests in coniferous trees and to lesser extent in deciduous trees and tall shrubs, often in cities
Corvus corax	Common Raven	All	C, R	P	Feeds on small vertebrates, bird eggs and nestlings, insects and other invertebrates, seeds, fruits, and carrion	Forages in a variety of habitats, often forested and mountainous or hilly, and along coastal areas; nests on rocky cliffs and in coniferous trees; occasionally nests in deciduous trees
Paridae	**Chickadees &Titmice**					
Parus atricapillus	Black-capped Chickadee	F, G	C, R	SE, S, P, N W	Feeds on insects, spiders and their eggs, coniferous seeds, and berries	Forages in deciduous and mixed forests, at the edges of coniferous forests, and along stream thickets; nests in natural cavities in deciduous trees and in holes excavated in soft rotting wood of snags and in nest boxes
Parus gambeli	Mountain Chickadee	F, G	U, R	N SE S, W	Feeds primarily on insects, especially caterpillars, moths, beetles, and spiders; also eats seeds, nuts, and berries	Forages in coniferous and mixed forests with sparse to moderate canopy closure; nests in tree cavities, which they often excavate in soft decaying wood; prefers deciduous trees for nesting; will also nest in bird houses
Parus rufescens	Chestnut-backed Chickadee	All	C, R	SE, S, P, N W	Feeds on insects, spiders and their eggs, coniferous seed, and fruits	Forages in moist coniferous and mixed forests; generally forages in upper half of conifers; nests in woodpecker holes or excavates own cavities in snags; also nests in nest boxes
Aegithalidae	**Bushtits**					
Psaltriparus minimus	Bushtit	All, exc. L	C, R	S	Feeds on insects, spiders, seeds, and berries	Forages in deciduous forests with second growth alder and near streams and at the edges of mixed forests; highly gregarious in its foraging activities; nests in gourd-shaped hanging pouches in deciduous trees and shrubs; flocks to suet feeders in residential gardens

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Sittidae	**Nuthatches**					
Sitta canadensis	Red-breasted Nuthatch	All	C, R	SE, S W	Feeds on insects, insect eggs, and larvae, spiders, and seeds	Forages in open mature coniferous and mixed forests; forages by gleaning insects from the bark and branches of trees; nests in tree cavities in living deciduous trees or in snags
Certhiidae	**Creepers**					
Certhia americana	Brown Creeper	All	C, R		Feeds on insects, such as weevils, leaf beetles, and moths, caterpillars, and eggs and larvae of many insects	Forages in mature coniferous, mixed, and deciduous forests; forages by gleaning insects from bark surfaces and probing crevices; nests in gaps between bark and trunk of trees and in existing natural cavities
Troglodytidae	**Wrens**					
Thryomanes bewickii	Bewick's Wren	All, exc. L	C, R	N, W	Feeds on insects and spiders	Forages in brush-covered, partly open areas and at the edges of mixed forests; seeks food on the ground and in crevices in bark and in hollow trunks of trees; nests in natural cavities in deciduous trees, in brushpiles, and amid roots of windthrown trees
Troglodytes aedon	House Wren	All, exc. L	U, M	N, W	Feeds on insects, millipedes, spiders, and snails	Forages in open deciduous and mixed forests and shrublands; nests in natural cavities in deciduous trees and in woodpecker holes in snags
Troglodytes troglodytes	Winter Wren	All	C, R		Feeds predominantly on insects and spiders, supplemented with a few seeds and berries	Forages in shady, secluded underbrush of dense, coniferous forests near streams; nests in dense brush on or near the ground, under stumps, and amid roots of windthrown trees
Cistothorus palustris	Marsh Wren	All, exc. L	C, R		Feeds on terrestrial and aquatic insects, snails, and occasionally the contents of bird eggs	Forages in fresh and brackish water marshes with abundant reeds; nests in low, dense vegetation in the marsh; nests are attached to reeds
Muscicapidae	**Kinglets, Thrushes, & Bluebirds**					
Regulus satrapa	Golden-crowned Kinglet	All	C, R		Feeds on insects, spiders, some fruits, seeds, and tree sap	Forages in open, mature coniferous forests; gleans some insects from bark of trees; nests in hanging pouches in coniferous trees
Regulus calendula	Ruby-crowned Kinglet	All	C, M		Feeds on insects, spiders, tree sap, berries, and some seeds	Forages in mixed coniferous and deciduous thickets and forests; nests in hanging pouches in coniferous trees; prefers spruce for nesting; does not nest in this ecoprovince
Sialia mexicana (Extremely rare)	Western Bluebird	N	U, M	N	Feeds on insects, earthworms, snails and other invertebrates, and berries	Forages in open forests and open areas with scattered trees along stream courses; nests in woodpecker holes in snags; also nests in bird houses

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Myadestes townsendii	Townsend's Solitaire	F, G, L	U, M		Feeds on insects, spiders, and fruits	Forages in deciduous and mixed forests, especially near water; nests in deciduous and coniferous trees in moist areas of forests; rare nester in this ecoprovince
Catharus ustulatus	Swainson's Thrush	All	C, M		Feeds on insects, spiders, and fruits and berries	Forages in open forests, along damp coniferous forest edges, and in stream thickets; nests in shrubs or low in coniferous trees
Catharus guttatus	Hermit Thrush	All	C, M		Feeds mostly on insects, such as ants, termites, beetles, weevils, moths, and flies; also eats caterpillars, sowbugs, spiders, tiny amphibians, snails, seeds, fruits, and berries	Forages in coniferous and mixed forests with open canopies or at the margins of dense forests; forages primarily on the ground; nests in coniferous or deciduous trees and occasionally on the ground and in cut banks in dense cover
Turdus migratorius	American Robin	All	C, M	N, W B	Feeds on earthworms, snails, insects, and fruits; searches for worms by sight, not by sound	Uses broad range of foraging habitats from open areas, such as beaches to mixed forests; nests in coniferous trees, in shrubs, and occasionally on the ground; will use nesting platform
Ixoreus naevius	Varied Thrush	All	C, R	SG, P W, B	Feeds on small wild fruits and seeds from plants such as blackberries, mountain ash, honeysuckle, juniper, and arbutus, and nuts, insects, spiders, snails, and other invertebrates	Forages in moist, dense, mature coniferous forests with well established tree regeneration and low light levels; also forages in mixed forests near streams; nests in coniferous and deciduous trees and shrubs and occasionally in snags
Bombycillidae	**Waxwings**					
Bombycilla cedrorum	Cedar Waxwing	All	C, R	B	Feeds on berries, flowers, tree sap, other fruits, and insects	Forages in open shrublands and forests, and along forest edges; nests in deciduous and coniferous trees; occasionally nests in small colonies
Vireonidae	**Vireos**					
Vireo solitarius	Solitary Vireo	All, exc. L	C, M		Feeds almost entirely on insects, with some fleshy fruits	Forages in deciduous and mixed, semi-open forests near streams; usually nests in coniferous trees, but also uses deciduous trees and shrubs
Vireo huttoni (Blue List)	Hutton's Vireo	F, G, N	U, R		Feeds on insects, spiders, and berries	Forages in deciduous and mixed forests; nests in deciduous trees and to lesser extent in coniferous trees
Vireo gilvus	Warbling Vireo	All, exc. L	C, M		Feeds mostly on insects, some spiders, and supplemented with a few berries	Forages in open deciduous and mixed forests, near streamside thickets; nests in deciduous trees and tall shrubs
Vireo olivaceus	Red-eyed Vireo	All, exc. L	U, M		Feeds largely on insects and fruits; also eats snails and spiders	Forages in deciduous and occasionally coniferous forests; nests in shrubbery and deciduous trees

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Emberizidae	**Wood Warblers, Tanagers, Sparrows, Buntings, Meadowlarks, Blackbirds, & Orioles**					
Vermivora celata	Orange-crowned Warbler	All	C, M	RW	Feeds on insects, fruits, berries, nectar, and tree sap	Forages in semi-open mixed forests, along forest edges, and in stream thickets; nests on the ground or, less commonly, in low shrubs; nests are hidden in dense vegetative cover
Dendroica petechia	Yellow Warbler	F, N	C, M	RW	Feeds on insects and a few berries	Forages in moist second growth forests and stream thickets; nests in shrubs and deciduous trees
Dendroica coronata	Yellow-rumped Warbler	All	C, M		Feeds primarily on insects, which it gleans from the foliage, supplemented by some fleshy fruits, and seeds	Forages in lower to middle canopy of open coniferous and mixed forests, forest edges, and deciduous thickets; nests in coniferous and deciduous trees and shrubs
Dendroica nigrescens	Black-throated Gray Warbler	All	U, M		Feeds almost entirely on insects	Forages in open, dry coniferous and mixed forests and mountain woodlands; nests in coniferous trees and to lesser extent in deciduous trees
Dendroica townsendi	Townsend's Warbler	All	C, M		Feeds mostly on insects and some fleshy fruits	Forages in coniferous forests with open to dense canopy closure, along forest edges, and in shrubby thickets; nests in deciduous and coniferous trees from near ground to upper parts of canopy
Oporonis tolmiei	MacGillivray's Warbler	All	C, M		Feeds predominantly on insects	Forages in dense stream thickets and at the edges of coniferous and mixed forests; nests in shrubs and on the ground in thick cover
Geothlypis trichas	Common Yellowthroat	All	C, M	RW	Feeds on insects and spiders; occasionally gleans insects from the ground	Forages in shrubby in open areas and along forest edges, near freshwater and saltwater marshes; nests in shrubs
Wilsonia pusilla	Wilson's Warbler	All	C, M		Feeds on insects and occasionally on berries	Forages in thickets and brush in boggy areas of woodlands; nests on the ground or above ground in vine tangles
Piranga ludoviciana	Western Tanager	All	U, M		Feeds on insects, buds, and berries, and small fruits	Forages in open coniferous and mixed forests; nests in coniferous and occasionally in deciduous trees
Pheucticus melanocephalus	Black-headed Grosbeak	All	U, M	SE	Feeds on insects, spiders, seeds, and fruits; occasionally eats buds	Forages in stream thickets, along the edges of ponds, and in open forests; nests in deciduous trees and tall shrubs
Pipilo erythrophthalmus	Rufous-sided Towhee	All	C, R	SG, P W	Feeds on insects, small invertebrates, seeds, nuts, and berries	Forages along mixed forest edges, stream thickets, and forest clearings; forages by scratching on the ground; nests close to ground in dense brush and on the ground in excavated depressions

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Spizella passerina	Chipping Sparrow	All	U, M		Feeds on insects, spiders, and seeds of grasses	Forages in open coniferous forests, along forest edges, and in thickets; nests mostly in coniferous trees; will also nest in deciduous trees and vine and brush tangles
Passerculus and grass seeds	Savannah Sparrow	All	C, M		Feeds on insects, spiders, snails, and grass seeds	Forages in grasslands, meadows, marshes, and bogs; nests on ground in natural or excavated depression well hidden by dense grasses and brush
Passerella iliaca	Fox Sparrow	All	C, M	SG	Feeds on insects, spiders, millipedes, buds, seeds and berries	Forages in mixed forest undergrowth, along coniferous and deciduous forest edges, and along stream thickets; nests on the ground and low in shrubs; does not nest in this ecoprovince
Melospiza melodia	Song Sparrow	All	C, R	W	Feeds on grass and weed seeds, blackberries, saskatoon berries, oceanspray flowers, insects and their larvae	Forages predominantly on the ground near and under shrubs and thickets at the edges of mixed forests and ponds and streams; nests directly on the ground in dense cover or low in shrubs, and in upturned tree roots
Melospiza lincolnii	Lincoln's Sparrow	All	U, M		Feeds on insects, insect larvae, spiders, grass and weed seeds	Forages in wetlands, such as open meadows, bogs, and marshes with low clumps of brush and stream-side thickets; nests in low shrubs and in grassy openings amid the shrubs
Zonotrichia atricapilla	Golden-crowned Sparrow	All	C, M	SG	Feeds on insects, seeds, buds, flowers, and fresh seedlings	Forages in thickets and shrubs and in coniferous forest clearings; nests in depressions on the ground at the base of small trees or in the lowest branches; does not nest in this ecoprovince
Zonotrichia leucophyrs	White-crowned Sparrow	All	C, R	SG	Feeds on insects, spiders, seeds, fruits, berries, blossoms, and fresh leaves	Forages in coastal shrubbery, wet meadows, and thickets; nests in low shrubs and on the ground under cover; benefits from openings in the forest providing more habitat
Junco hyemalis	Dark-eyed Junco	All	C, R	SG W	Feeds on seeds, ants, weevils, beetles, flies, caterpillars, and insect larvae	Forages in loose flocks in clearings and along edges of mixed forests; mainly a ground forager; nests on or near the ground in shrubby areas with cover of vegetation, fallen logs, or rocks
Agelaius phoeniceus	Red-winged Blackbird	F, N	C, R	W	Feeds on terrestrial and aquatic insects	Forages in marshes and wet meadows along edges of cattails, tall weeds, and blackberry tangles; nests near water surface in emergent vegetation, in shrubs, and rarely in trees
Sturnella neglecta	Western Meadowlark	F, N	U, M		Feeds on caterpillars, wasps, ants, spiders, sowbugs, small snails, and weed seeds	Forages in open grasslands with scattered clusters of shrubs and in rural areas; uses taller shrubs and trees for songposts; nests on the ground amid thick growth of weeds and grasses; rarely nests in this ecoprovince

Name – Scientific	Name – Common	Ecosections	Abundance and Seasonal Occurrence	How to Attract	Food	Habitat and Natural History
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	F	U, M		Feeds on flies, beetles, weevils, ants, wasps, dragonflies, damselflies, caterpillars, grubs, weed seeds, and some fruits	Forages primarily on the ground in grasslands, along lake shores, and in rural areas; nests in sturdy, emergent vegetation, such as bulrushes and cattails, adjacent to marshy areas with deep water and extensive patches of open water
Euphagus cyanocephalus	Brewer's Blackbird	All	C, R		Feeds on insects, spiders, crustaceans, snails, grass seeds, and fruits	Forages in shrubby, brushy areas near water, in stream thickets, marshes, and open wet deciduous and mixed forests; nests in dry sites in coniferous and deciduous trees and in shrubs, and in emergent marsh vegetation
Molothrus ater	Brown-headed Cowbird	All	C, M	SE SG	Feeds on insects, spiders, a few snails, and grass seeds	Forages in open deciduous forests, along forest edges, and in grasslands; deposits its eggs in the nests of other birds, often in deciduous trees, but also in shrubs, and on the ground
Icterus galbula	Northern Oriole	F, N	U, M		Feeds on insects, spiders, snails, fruits, some buds, and nectar	Forages in open and riparian woodlands and along deciduous forest edges; nests in deciduous trees and rarely in coniferous trees
Fringillidae	**Finches**					
Pinicola enucleator	Pine Grosbeak	All	U, M		Feeds on seeds, fruits, berries, flies, beetles, and caterpillars	Forages in semi-open coniferous forests and lowland streams with deciduous tree cover; gleans food from trees, shrubs, and on the ground; nests in trees at forest edges and adjacent to meadows and clearings; does not nest in this ecoprovince
Carpodacus purpureus	Purple Finch	All	C, R	SE W	Feeds on seeds, tree buds and blossoms, insects, and fruits	Forages in open coniferous and mixed forests, along forest edges, and in open woodlands; nests are usually in coniferous trees, but will also nest in deciduous trees
Carpodacus mexicanus	House Finch	All	C, R	SE W	Feeds on seeds, fruits, buds, and tree sap	Forages in open woodlands with shrubs and scattered trees; nests in deciduous or evergreen trees and in tall shrubs
Loxia curvirostra	Red Crossbill	All	C, R	SG SE	Feeds on coniferous seeds, buds and seeds of birch, alder, willow, and maple; occasionally eats small fruits, dandelion seeds, aphids, and insect larvae	Forages primarily in coniferous and mixed forests; also frequents deciduous forests and stream thickets; does some foraging on the ground; nests in coniferous trees in open forest areas
Carduelis pinus	Pine Siskin	All	C, R	SE W	Feeds on seeds of coniferous and deciduous trees; floral buds and nectar of trees, tree sap, and insects	Forages in coniferous and mixed forests and open woodlands; nests in coniferous trees and less commonly in deciduous trees
Carduelis tristis	American Goldfinch	All	C, M	SE W	Feeds on seeds of deciduous trees and grasses, floral buds, insects, and berries	Forages in grasslands, open deciduous woodlands, and stream courses; nests in low shrubs and less commonly in deciduous trees, and usually close to water
Coccothraustes vespertinus	Evening Grosbeak	All	C, R	SE	Feeds on a wide variety of seeds, insects, berries, and spiders	Forages in coniferous and mixed forests; nests high in coniferous trees

Table 6: Native Terrestrial Mammals

Although the following list of terrestrial mammals found in the Georgia Depression Ecoprovince is extensive, it is by no means all inclusive.

Key to Table:

Ecoregions:

Lower Mainland	
Georgia-Puget Basin	
Eastern Vancouver Island	
All three ecoregions	

Ecosections:

F	Fraser Lowland
G	Georgia Lowland
S	Strait of Georgia
J	Juan de Fuca Strait
N	Nanaimo Lowlands
L	Leeward Island Mountains
All	

Occurrence beyond natural wild areas, if sufficient amount of habitat provided:

Occasional:

u urban areas

r rural areas

Common:

U Urban areas

R Rural areas

Occurrence will vary with relative location in the Georgia Depression Ecoprovince, and with local proximity to areas of existing terrestrial mammal habitat.

Little Brown Myotis

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
INSECTIVORA	**SHREWS & MOLES**				
Sorex cinereus	Common Shrew	F, G	u, R	Feeds on small invertebrates such as insects and their larvae, earthworms, woodlice, snails, millipedes, centipedes, and some seeds; may prey on eggs of small nesting birds and on small vertebrates such as salamanders	Forages in runways along the ground and in trees in wet to dry forested areas, along lake edges, in stable talus slopes, and in moist, grassy ditches; nests in grass under cover of a log or rock; retreats into dense herbaceous layer, decayed logs, and forest litter
Sorex vagrans	Vagrant Shrew	All	u, R	Feeds on invertebrates such as insects, spiders, and earthworms, and on small amphibians, carrion, and some seeds; may store food	Forages in thickets and along runways under logs, leaf litter, and fallen grass, usually close to water; prefers moist forests, riparian areas, wetlands, and open grassy areas; nests in dry grass within decayed log or stump or in a burrow in moist soils; retreats into dense herbaceous or shrub layer and forest litter
Sorex monticolus	Dusky Shrew	All	u, R	Feeds on invertebrates such as insects, spiders, snails, and worms	Forages along runways in leaf litter in forests, along edges of marshes or streams, and in grassy ditches; nests in grass in decaying logs, stumps, forest litter, and in subterranean holes
Sorex palustris	Water Shrew	All	r	Feeds on larvae, insects, tadpoles, small fish, and other small vertebrates	Forages near streams, lakes, ponds, and marshes; nests under cover of rocks, decaying logs, tree roots, and herbaceous layer near water; retreats into dense herbaceous layer, logs or rocks
Sorex bendiri (Red List)	Pacific Water Shrew	F	u, r	Feeds on small aquatic and terrestrial invertebrates	Forages in heavy, wet forest adjacent to swamps, bogs, streams, ponds, and beaches; retreats under decaying logs, into tall grass, and into muddy alder thickets
Sorex trowbridgii (Blue List)	Trowbridge's Shrew	F	u, r	Feeds on insects and other invertebrates, and seeds	Forages in dense areas of mature coniferous forests; nests in tiny burrows
Neurotrichus gibbsii	Shrew-Mole	F, G	u, r	Preys on earthworms, insects, grubs, and spiders	Forages in network of tunnels under decaying logs and leaf litter in moist soil in shady ravines and dense thickets; nests in decaying logs
Scapanus townsendii (Red List)	Townsend's Mole	F	R	Feeds on earthworms, snails, slugs, centipedes, insects, and vegetation	Forages in meadows, fields, and wet lowland areas near the coast; nests underground
Scapanus orarius	Coast Mole	F	U, R	Feeds on insects, grubs, and other small invertebrates; also forages on succulent roots and soft vegetation	Tunnels under deciduous forests and clearings; nests underground
CHIROPTERA	**BATS**				
Myotis californicus	California Myotis	All	u, r	Feeds on flies, moths, and beetles	Forages at night close to margins of streams and in openings in dense coniferous forests; roosts in rock crevices, hollows in trees, snags, under loose bark, and in attics

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Myotis evotis	Western Long-eared Myotis	All	u, r	Feeds on variety of flies, moths, beetles, and spiders; forages late in evening and during the night	Forages among trees and over water; roosts in rock crevices, attics, snags, and hollow trees; tends to concentrate near pools and forest streams
Myotis keenii (Red List)	Keen's Long-eared Myotis	All	u, r	Feeds on moths and other insects	Forages in coastal forests; observed foraging over hot spring pools and clearings above salal; roosts in tree cavities, rock crevices, and small caves
Myotis lucifugus	Little Brown Myotis	All	u, r	Feeds on aquatic insects, beetles, and ants; captures insects in its wings and mouth	Forages over still water, in urban and rural areas, and over forest edges; tends to concentrate near pools and streams; roosts in attics, tree cavities, snags, and under loose bark
Myotis volans	Long-legged Myotis	All	u, r	Feeds on small moths, beetles, and other soft-bodied insects	Forage over, under, and through coniferous forest canopy; roosts in rock crevices, under loose bark, and in attics
Myotis yumanensis	Yuma Myotis	All	u, R	Feeds on flies, termites, and moths; feeds early in evening	Forages over flowing water, along shorelines, and in meadows; roosts in attics, caves, rock crevices, tree cavities, and under loose bark
Lasiurus cinereus	Hoary Bat	All	u, r	Feeds mostly on moths, but also eats beetles, flies, termites, and dragonflies	Forages high above forest clearings, rural fields, rivers, and lakes; roosts in deciduous and coniferous trees
Lasionycteris noctivagans	Silver-haired Bat	All	u, r	Feeds on moths, flies, bees, ants, and beetles; active in early evening	Forages in coniferous or mixed forests adjacent to or over bodies of water; roosts under loose bark, in woodpecker holes, and old bird nests
Eptesicus fuscus	Big Brown Bat	All	U, R	Feeds mainly on beetles	Forages over forests, along forest edges, in clearings, and along streams; roosts in hollow trees and rock crevices close to water
Plecotus townsendii (Blue List)	Townsend's Big-eared Bat	All	u, r	Feeds on small moths and other insects; feeds after dark	Forages over coniferous forests and rural fields; roosts in rock crevices and caves, and in attics
LAGOMORPHA	**RABBITS, HARES, & PICAS**				
Lepus americanus	Snowshoe Hare	F, G	r	Feeds on ferns, new shoots of woody plants, conifer seedlings, twigs, bark, and evergreen leaves	Forages in semi-open forested areas near brush cover, such as riparian thickets and forest edges; nests in shallow ground depressions beneath logs or stump roots, or under dense shrub cover
RODENTIA	**SQUIRRELS, RATS, MICE, & ALLIES**				
Tamias amoenus	Yellow-pine Chipmunk	F, G	u, r	Feeds on insects, buds, and seeds	Forages in open coniferous forests and mountain meadows; nests in rock crevices surrounded by vegetation and in short burrows under tree roots or fallen logs

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Tamias townsendii	Townsend's Chipmunk	F, G, N	u, r	Feeds on seeds and flowers, as well as fruits, fungi, and insects	Forages on the ground and in trees in open forests and forest edges; nests in excavated underground burrows at base of stumps, beneath windfalls, and in rock crevices
Tamiasciurus hudsonicus	Red Squirrel	N, L	u, r	Feeds on conifer seeds, especially those of Douglas-fir; also eats fungi, berries, insects, and small vertebrates	Forages on ground and in trees of coniferous forests; nests in natural cavities in trees, twig, leaf and bark nests on branches, or in underground burrows
Tamiasciurus douglasii	Douglas' Squirrel	F, G	u, r	Feeds on new shoots of conifers, green vegetation, acorns, nuts, fungi, berries, and seed cones, especially those of Douglas-fir	Forages in the trees and on the ground in coniferous forests; nests in tree cavities or on branches with nests made of twigs, needles, bark mosses, and lichens; also uses abandoned bird nests
Glaucomys sabrinus	Northern Flying Squirrel	F, G	u, r	Omnivorous and feeds on lichens, fungi, buds, fruits, seeds, mosses, insects, nestling birds, and eggs	Forages at night in mature coniferous and mixed forests; nests in tree cavities in old trees and snags; female and young later move to larger outside nests of sticks, mosses, and lichens on tree branches; may be attracted to yards, near forested areas, that offer nest boxes
Castor canadensis	Beaver	All	r	Feeds on trembling aspens, willows, cottonwoods, poplars, and aquatic plant life, such as pond lilies, cattails, and sedges	Forages in deciduous or mixed forests close to bodies of water; nests in lodges or bank dens; flooding caused by dams increases populations of ducks, muskrat, and mink, and provides better range for browsing animals; beaver ponds contain more and a greater diversity of invertebrate species; fish are more plentiful and larger; water impoundment by beavers helps prevent flash floods and creates reservoirs in times of drought; abandoned beaver ponds become meadows favored by grazing animals
Peromyscus maniculatus	Deer Mouse	All	U, R	Omnivorous and feeds on insects, spiders, centipedes, crustaceans, berries, seeds, and fungi	Forages in broad range of habitats from dry forest floors to wet meadows, and shrub-dominant areas; nests in hollow logs, grass clumps, rocks, or shallow burrows; retreats into herbaceous layer, under forest litter, rocks, and decaying logs, or into trees, stumps and burrows
Neotoma cinerea	Bushy-tailed Wood-rat	F, G	r	Feeds on tree (willow and conifer) and shrub foliage, fungi, fruits, berries, seeds, and some insects	Forages in coniferous forests; nests in rock crevices, tree cavities, or on branches; retreats to rocky areas
Clethrionomys gapperi	Southern Red-backed Vole	G	R	Omnivorous and feeds on berries, new shoots, seeds, lichens, fungi, and insects	Forages in cool, moist coniferous, mixed, and deciduous forests with abundant forest litter, mossy rocks, decaying logs, and tree roots; nests under stumps, roots, decaying logs, tree cavities, and abandoned bird nests; retreats under fallen logs and brushpiles and into trees

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Microtus townsendii	Townsend's Vole	All exc.G	u, R	Feeds on grasses, sedges, horsetails, and buttercups	Forages in dense cover of moist grasslands and swamps of coastal lowlands; nests underground in hummocks linked to burrow system
Microtus longicaudis	Long-tailed Vole	F, G	u, r	Feeds on grasses, shrub leaves, and other green vegetation	Forages along stream edges or near ponds, swamps, and grassy openings in forests; nests underground, under logs, and sometimes in decaying logs; retreats into dense herbaceous layer
Microtus oregoni	Creeping Vole	F, G	u, r	Feeds on green vegetation, bulbs, stems, roots, blueberries and other berries, and fungi	Forages in brushy and grassy areas of coniferous and mixed forests; spends most of time in shallow burrows; nests in grass-lined burrows and hollow logs
Ondatra zibethicus	Muskrat	F, N, L	u, R	Feeds on aquatic plants, such as cattails and bulrushes	Forages in wetlands, ponds, marshes, lakes, and streams; nests in burrow system in stream bank; nests have underwater exit holes
Erethizon dorsatum	Porcupine	F, G	r	Feeds on roots, stem, leaves, berries, seeds, flowers, nuts, water plants, and grasses	Forages on ground and in shrubs and trees of forests; prefers dense cover; dens in caves, hollow logs, tree cavities, old burrows, and dense brush; retreats into tree hollows
CARNIVORA	**CARNIVORES**				
Canis latrans	Coyote	F	u, r	Preys on rodents, carrion, rabbits, ducks, small mammals, and young of larger mammals; also eats some fruits	Utilizes thickets and dense shrubs in forested areas; also forages in open forest and clearings, and in rural and urban areas; dens in dry river banks, rock crevices, thickets, and hollow logs with nearby water source; potentially dangerous to pets
Canis lupus	Gray Wolf	G, N, L		Preys on deer, elk, and beaver	Forages along stream and river courses in forested areas and variety of other habitats; dens in holes dug in the ground, rock crevices, hollow logs, or overturned stumps; potentially dangerous to pets
Vulpes vulpes	Red Fox	F	r	Omnivorous and feeds on small mammals, insects, fruits, birds, and carrion	Forages in areas of interspersed forest and open meadow, and in rural areas; dens in burrows, hollow logs, and rock crevices with dense shrub cover; retreats into escape dens
Ursus americanus	Black Bear	All	u (edge) r	Omnivorous and feeds on green leafy material, insects, berries, fish, small mammals, and carrion; attracted to fruit trees, grease, and garbage	Forages in forests and clearings, along stream and river courses, and in wet meadows; dens in hollow trees, rock caves and crevices, fallen logs, and underground excavations; retreats into trees; potentially dangerous to pets and humans
Ursus arctos (Blue List)	Grizzly Bear	G		Feeds on horsetails, grasses, bulbs, berries, insects, mammals, fish, deer, and carrion; attracted to garbage	Forages in coniferous forests, valley bottoms, meadows, along stream and river courses, and in estuaries; dens on slopes in forested areas, often at boundary of western and mountain hemlock in coastal areas; potentially dangerous to pets and humans

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Procyon lotor	Raccoon	All	U, R	Omnivorous and feeds on crabs, crayfish, birds, small mammals, fish, amphibians, bird eggs, berries, nuts, and seeds	Forages in coniferous, mixed, and deciduous forests along streams banks, in bogs and wetlands, along shorelines, and in rural areas; nocturnal; dens in tree cavities, hollow logs, or ground burrows, close to water; retreats into trees
Martes americana	Marten	All	r	Feeds on voles, squirrels, hares, and other small mammals, birds, fruits, insects, and carrion	Prefers to forage on ground in mature coniferous forests; dens in natural cavities in escarpments, snags, under boulders, and in hollow logs with herbaceous cover; retreats under logs and into dense vegetation
Martes pennanti (Blue List)	Fisher	F, G		Feeds on hares and porcupines; also eats small rodents, birds, bird eggs, insects, fruits, and nuts	Forages on the ground and in trees and searches through burrows for prey; prefers coniferous and mixed forests with dense canopy; nocturnal; dens in snags, hollow trees, rock crevices, hollow logs, and stumps
Mustela erminea	Ermine	All	r	Feeds on small mammals, especially rodents, and birds, fish, amphibians, insects, and some vegetation	Forages in open forest and shrub- and herbaceous-dominated habitats, often close to water; nests in hollow logs, under roots, and in burrows of mice and chipmunks; retreats under logs and into dense herbaceous and shrub layers
Mustela frenata altifrontalis (Red List)	Long-tailed Weasel (Altifrontalis subspecies)	F		Preys on young of rabbits, voles, deer mice, shrews, squirrels, and birds	Forages along forest edges, in swamps, and margins of streams, ponds, and rivers; nests in burrows dug by other species or in rotten tree trunks; retreats into dense vegetation
Mustela vison	Mink	All	r	Feeds on fish, crabs, small crustaceans, amphibians, mice, young birds, and bird eggs	Forages in inter-tidal zone along the coast, and in wetlands, along the edges of streams, ponds and lakes inland; nests in abandoned burrows along river banks and in stumps and hollow logs; retreats into trees
Mephitis mephitis	Striped Skunk	F	U, R	Omnivorous and feeds on insects, such as beetles and bees, small mammals, amphibians, berries, nuts, and seeds	Forages in open forests, marshes, and rural areas; nocturnal; dens underground in rock piles and abandoned burrows ; retreats into dense cover and under logs
Spilogale putorius	Spotted Skunk	F	u, r	Feeds on mice, amphibians, insects, and berries	Forages along stream banks and ravines in open mixed forest with dense undergrowth; dens in abandoned burrows and hollow logs; retreats into dense thickets and brushpiles
Lutra canadensis	River Otter	All	r	Feeds primarily on fish, but also on amphibians and small birds	Forages in water or on land near aquatic environments, such as saltwater shorelines, rivers, and lakes; dens close to water in cavities among tree roots, hollow logs, in abandoned beaver lodges, and under rocks; retreats under dense shrub layer
Felis concolor	Cougar	All	r	Feeds on deer, other carnivores, mice, carrion, and vegetation	Forages in forested areas and along forest edges where vegetation is dense; prefers to den near water in caves, under rock ledges, or in ground dens protected by roots and windfall; potentially dangerous to pets and humans

Name – Scientific	Name – Common	Ecosections	Occurrence	Food	Habitat and Natural History
Lynx rufus	Bobcat	F, G	r	Feeds on hares, small mammals, birds, reptiles, porcupine, deer, and vegetation	Forages in coniferous forests, wetlands, and rural areas; dens in caves, rock crevices, under logs, and secluded brushy areas; retreats into rock piles and rocky ledges
ARTIODACTYLA	**EVEN-TOED UNGULATES**				
Cervus elaphus roosevelti (Blue List)	Roosevelt Elk	L	r	Feeds on grasses and a variety of plants	Forages in forested river valleys in winter and at higher elevations in summer months
Odocoileus hemionus	Black-tailed Deer	All	u, R	Feeds on herbaceous plants, blackberry, huckleberry, salal, thimbleberry, twigs of conifers, aspens, willows, dogwood, serviceberry, juniper, and sage; also eats acorns and apples	Forages along mixed forest edges and in clearings
Oreamnos americanus	Mountain Goat	G		Feeds on grasses, sedges, shrubs, twigs, trees, and lichens	Forages in variety of forest, meadow, and talus-shrub habitats adjacent to rocky cliffs; retreats along cliffs

Red Squirrel

The Georgia Basin Initiative – A Partnership For A Sustainable Future

The Georgia Basin

The Georgia Basin is the British Columbia portion of a larger bio-region that includes the area surrounding Puget Sound in Washington State.

The Georgia Basin-Puget Sound Region is ringed by the crest of the Olympic Mountains, the Vancouver Island Ranges, the Coast Ranges and the Cascades. The inland sea stretches from Olympia, Washington in the south to Campbell River and Powell River in the north. Its major rivers include the Squamish, the Fraser and the Skagit.

This region is one of the most ecologically diverse areas of North America, containing a wide range of vegetation, and fish and wildlife habitats of international significance.

At the Crossroads

In 1960, 2.6 million people lived in the Georgia Basin-Puget Sound Region. By 1990, that number had doubled. And it could double again over the next 25 years.

Growth on that scale and at that speed challenges our conventional notions of how we manage our resources and plan our communities.

We know we cannot put up a fence to keep people out, nor can we simply throw up our hands and say it's out of our control.

What we can and must do is construct a shared vision for our home that will ensure a sustainable future, a legacy, for our children and our grandchildren.

Where We Live

The Georgia Basin's coniferous forests include Western hemlock, Sitka spruce and Western redcedar. The Garry oak/Arbutus ecosystem of the coastal lowlands is unique in North America.

Four million salmon a year migrate up the Fraser River, while more than 40 species of waterbirds rest in the Georgia Basin-Puget Sound Region on their annual migration along the Pacific Flyway.

Threats to Our Environment

As urban areas expand, they encroach on valuable wetlands, wildlife habitat, green space and agricultural land. One federal report estimates that natural wetlands in the lower Fraser Valley comprised nearly one-third of all lands converted to urban use between 1967 and 1982.

Development That Sustains Us

Sustainable development means being able to meet the needs of today, of our present generation, without damaging the ability of future generations to meet theirs. It means accommodating growth without destroying the livability and natural environment of our region. And it means recognizing that environmental, economic and social issues are inextricably linked. The Georgia Basin Initiative is designed to

profile these linkages. It also builds on the planning achievements of regional districts, the Islands Trust, municipalities, Crown Corporations, First Nations, and private sector groups. And, it provides a much-needed forum for governments and the private sector to discuss growth management issues and principles, establish regional partnerships, share innovative approaches and coordinate actions.

FOR FURTHER INFORMATION...

Programs such as **Naturescape British Columbia** link individuals to regional initiatives such as the Georgia Basin Initiative. To learn more about the Georgia Basin Initiative, please contact the Province of British Columbia, Ministry of Municipal Affairs at (604) 953-3009.

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Front Cover

Old growth forest, Mark Nyhof

Back Cover

Heron nests, BC Parks
Killdeer eggs, BC Parks
Rose hip, Bill Swan
Wstern Garter Snake, Ted Lea
Anise Swallowtail (adult) Lothar Kirchner
Anise Swallowtail (pupa and larva) Lothar Kirchner

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