Appendix 1 – Plants

Canada has over four thousand native plant species. Although many can be hard to identify, especially in early spring if they don't have any leaves, there are a few dozen species that are fairly obvious, especially later in the planting season when they come into flower. In addition, if you're really interested in plant identification, you can put a free app like "Pl@ntNet" on your mobile device. That particular app has a Canada-specific database (built with the help of user submissions), which currently contains almost three thousand species and almost three hundred thousand images.

This appendix will include information about a couple of mushrooms. Mushrooms are fungi, not plants, but I needed to put them somewhere.

Before I get into the key plants, I should talk about grasses, since most planters don't understand grass (other than the typical reaction of cursing at grass mat). Grasses are important to the ecosystem, so much so that Alberta, Saskatchewan, and Manitoba recognize them by having official provincial grasses (rough fescue, needle-and-thread grass, and big bluestem respectively). Grasses are the most important plant group to humans. A great majority of the food that we eat comes from grasses, such as corn, wheat, oats, rye, barley, rice, and sugarcase. Whoa! That probably opened your eyes. Grasses aren't just stuff that you have to mow on your front lawn. Grasses come in a huge variety of shapes and forms. Even bamboo is a type of grass.

Wheat, oats, rye, and barley are all examples of cereal grains (as opposed to legumes, which are also a class of grains). The "cereal" part refers to the edible components of the grain (the fruit). The rest of the grain stalk is typically not edible to humans, but can be used for animal fodder. For example, if a farmer is growing wheat, the wheat is harvested and the wheat grains become food for humans, while the remaining grass stalks are fed to animals. Most city-dwellers don't understand the difference between hay and straw. Hay refers specifically to grasses that have been cut and dried to be stored for use as animal fodder (and contains the entire plant). When harvested, hay is initially quite green. A typical grass used for hay in Canada is alfalfa grass. Straw refers to the dried stalks of grass which are left over after cereal grains have been harvested. Straw is typically quite dry and fairly devoid of nutrients, so it is more frequently used as bedding for animals than it is to feed them. There now, if you run into an angry rancher while you're planting, you can distract and calm them down by asking them questions about the hay and grasses that they grow. By the way, some people are quite allergic to grasses (hay fever), so if you have this kind of a history, be aware that you'll probably need to use antihistamines quite frequently while planting, so you don't end up suffering through a season of allergic reactions.

Anyway, the bottom line is that grass is great for humans, and great for animals, but it sucks to screef through grass mat. Let's move on to some specific other plants:

Devil's Club (*Oplopanax horridus*) – Yes, the Latin name for devil's club includes the word "horrid." Seems legit. Devil's club is a large understory shrub which is allegedly only really found within Canada if you're planting in BC. It likes to grow in rich areas, high in organic nutrients. It has large flat leaves, and erect woody stems that are covered in annoying noxious spikes. Devil's club generally grows to be about a meter and a half tall in the Interior, although in moist rainforest gullies on the coast, it can sometimes reach five meters in height. Surprisingly, devil's club is very sensitive to human impact, and doesn't grow or reproduce quickly or easily. Devil's club is very important in the history of many groups of Native Americans, who valued it for a wide variety of medicinal uses, and who also made face paints. To be honest, devil's club is not as bad as you'd think from its reputation, although it can still be annoying to have to walk through or plant through a gully filled with these plants.

Stingy Nettle (*Urtica dioica*) – This species is divided into six sub-species, five of which have painful hollow stinging hairs on their leaves and stems. The *Urtica dioica gracilis* subspecies is common in Canada. Upon coming into contact with human skin, the hairs on the plant act like hypodermic needles, injecting histamine and other noxious chemicals into the victim (simultaneously producing the stinging sensation). This stinging sensation feels worse when the skin gets wet (including through sweating), and sometimes takes two or even three days to abate. Taking antihistamines provides some minor relief. Despite the stinging hairs, stingy nettles have frequently been used in the past as a source for traditional medicine, food, and teas. Stingy nettles are surprisingly nutritious plants, although they are best eaten while the leaves are young, before it starts to flower.

Fireweed (*Chamaenerion angustifolium*) – This plant is sometimes called willowherb in Canada, and can be found in every province. It is one of the easiest plants to recognize, due to its purplish-pink petals and subsequent change to dander late in the summer. It is a fairly tall plant, often growing to at least two or three feet in height, but can occasionally grow taller than planters. Fireweed is a pioneer species, so it is more frequently found in open fields and cutblocks than in boreal forest. In blocks or stands that have been cleared by wildfire, fireweed quickly becomes one of the dominant species, although it will eventually be pushed out by grasses, brush, and shrubs within about five years. I'm not certain if the name fireweed was bestowed in reference to the fact that it grows after wildfires, or because it seems to grow with the speed of a wildfire. Maybe it's a combination of both. Fireweed isn't good for much, except that some people use the leaves to make tea, but on a positive note it doesn't cause problems for natural regeneration of conifers and other species.

Feather Moss – This type of moss refers to any species growing in or near a boreal forest, where the moss has the appearance of feather-like foliage. In terms of its taxonomy, the literature is vague, with some people classifying feather mosses in the genus *Ptilium*, and others classifying feather mosses within the family *Hypnaceae*. Either way, if it's green moss and it isn't spaghnum, it's probably feather moss. Feather moist can survive through fairly dry conditions, to the point where the plant looks like it has completely dried out (but it's probably still alive). It's important for planters to learn to differentiate types of feather moss from spaghnum, because foresters will often prescribe different planting requirements depending on

what type of moss is occupying a target microsite. For feather moss, it is fairly common for foresters to decide that since it often dries out for part of the year, it does not hold sufficiently moisture to be a suitable organic material to surround the plug of a seedling, therefore any trees planted in feather moss probably have to be screefed or, at the very least, planted deep so that the top of the plug is below the surface of the ground.

Spaghnum Moss (*Sphagnum* sp) – Spaghnum is the genus for a group of almost four hundred separate species of moss, although none of these qualify as types of feather mosses. You'll only find spaghnum mosses growing in areas with high moisture content. Living and dead spaghnum plants can hold large quantities of water inside their cells, to the point where they can store many times their dry weight in water. Over time, spaghnum can also "creep" outward onto drier land, because the entre body of spaghnum holds water to prevent desiccation on the fringes. Spaghnum is also known as peat moss. After a great deal of time, layers of peat can build up and decompose, and form a very thick organic layer on the surface of the ground. In some parts of the world, the same peat is cut and dried for a season, and then burned as peat logs in the winter to heat homes. Many foresters allow trees to be planted directly into spaghnum, rather than trying to screef down to any sort of cohesive mineral soil (there probably isn't anything down there anyway). Because the spaghnum essentially stays moist year-round, there's not much risk that a plug will dry out or that the seedling will suffer from desiccation. However, it's best to double check the local forester's spaghnum policy if you find a lot of it in your piece.

Salal (*Gaultheria shallon*) – Salal is found in many parts of BC, preferring locations that are fairly wet, especially coastal rainforest areas. Salal, which is occasionally referred to as shallon, is a short shrub of the heather family. Salal rarely grows to any significant vertical height unless in mature forest. On cutblocks, it is rarely to be working through salal above the waist. Even though the plant does not typically grow in height, it can be a fairly large plant, often growing ten to fifteen feet away from its root system. The leaves are egg-shaped, very dense and tough, and have a shiny dark green appearance (similar to cottonwood leaves, but darker). Even if you've never worked in BC, you may have seen these leaves before, because they are commonly used in floral arrangements all around the world. In fact, many seasonal workers pick salal as piece-work for up to nine months of the year, starting in August and lasting until the following May. It's estimated that the underground salal-picking industry in BC (which is very similar to the mushroom picking industry) is a $100 million industry each year. And it is wholly unregulated. The salal plant grows copious amounts of berries at the right time of year. They start out as white, hard berries, and ripen into a dark purple-bluish-black color by September. Although most people don't think about them, they're perfectly fine to eat, and some coastal planters will quickly pick a Tupperware full of them at the end of the day, to bring home and have with dinner. Strangely, ripe salal berries are also known to be an appetite suppressant.

Labrador Tea (*Rhodedendron groenlandicum* and *Rhodedendron columbianum*) – These two species are found in various parts of Canada. *Rhodedendron groenlandicum* is typically found in bogs and along shorelines all across the country, while *Rhodedendron columbianum* can be found in drier areas throughout western Canada. Some people use lab tea to make … tea. The only problem with this is that if it steeps for too long, it becomes fairly toxic to humans, and can make you physically sick. In rare cases, lab tea has caused fatalities. A lot of the lab tea found in western Canada is typically found on blocks in wet areas (muskeg

regions) in northern Alberta. On these blocks, the plant can grow to be a few feet high. Although it doesn't look that dense, it's very rooty, and quite annoying to work through. This is made even worse by the fact that lab tea often grows out of thick layers of very duffy or mossy organics. Generally, it's not fun at all.

Poison Oak/Ivy (*Toxicodendron* sp) – The *Toxicodendron* genus contains a number of trees, shrubs, woody vines, and flowering plants, including poison oak and poison ivy. One characteristic that all of these species have in common is that they produce urushiol, which is a skin-irritant that causes a severe allergic reaction in a lot of people. The appearances of poison oak and poison ivy are wholly unassuming. In fact, probably not one in five hundred planters could identify these in the bush. Thankfully, they don't seem to grow on blocks, and planters almost never run into problems with either of them. The most likely way to come into poison oak or poison ivy might be if you pick an unlucky spot when setting up a tent in a mobile camp, or even more likely, if you go into the woodline of a block to relieve yourself in private. If you do find that you've suddenly broken out into some kind of rash or hives, and you don't know the reason, it's possible that you've brushed up against one of these plants, although it should be a rare occurrence. Probably the first step to deal with it is to take some antihistamines, and see what happens. If the problem doesn't get better after several hours, you should consider seeking medical attention. Whatever you do, don't take a hot shower to try to wash away the urushiol, as that makes things much worse. The heat of the shower opens your pores, and if there is still any urushiol oil on your skin, it enhances absorption.

Giant Hogweed (*Heracleum mantegazzianum*) – The giant hogweed is a member of the carrot family. Unlike the carrot, the giant hogweed is not healthy for you. In fact, some people claim that it is one of Canada's most toxic plants. It looks nothing like a carrot. A typical giant hogweed is a very tall flowering plant that sometimes grows to between three and five meters in height. The plant is actually an invasive species from the Caucasus, but it has only been in the past eight to ten years that people are starting to realize the problems that it causes. The sap of the plant is phototoxic, and causes nasty blisters and scars in humans if the skin is exposed to the sap. Strangely enough, a minor hysteria seems to have swept across parts of Canada in the past few years with regards to this plant, as it can sometimes be found in parks and other urban areas. While there is no doubt that the sap is toxic, the fears associated with this plant may be somewhat overblown. You should avoid touching it, if you see one, but you don't need to have nightmares about it. One problem with giant hogweed is that it looks almost exactly like cow parsnip, although cow parsnip usually only grows to about four or five feet in height. Cow parsnip (*Heracleum maximum*) is a benign native species frequently found growing on the shaded edges of some blocks where grasses grow tall. This plant could certainly make a planter uneasy, but cow parsnip is safe. There is a third plant, wild parsnip (*Pastinaca sativa*) is a Eurasian invasive that looks like cow parsnip but has yellow flowers. Wild parsnip contains the same "furocoumarin" chemicals that are found in giant hogweed sap, so you should probably avoid it. As for giant hogweed, it will probably be unlikely that you'll ever see any on your blocks.

Morel (*Morchella* sp) – The morel is a mushroom. Therefore, it is a fungus, not a plant. The *Morchella* genus is a somewhat controversial one. Some mushroom scientists argue that this genus has as few as three species, and others argue that there are at least seventy. Regardless of what's going on, any real morels are tasty mushrooms which are highly prized by gourmet cooks, often fetching a fortune in

gourmet markets, and appearing on specialty plates at Michelin starred restaurants. If you want to feel like you're one-upping the 1%, you can snack on them while you're planting. Just make sure that you're eating real morels, and not a "false morel" fungus. You'll be able to identify true morels by their strong vertical orientation, and light tan brown upper cap which looks webbed with ridges. In British Columbia, the black morel is fairly common, and is named such because the tips of the ridges on the cap of the mushroom are black.

False Morel – The term "false morel" covers several different species. All of the false morels belong to the order *Pezizales*, but come from a handful of different families within that group. False morels come in a wide variety of shapes and sizes, and many of them are toxic, some acutely so. Planters often see what they refer to as "brain mushrooms," which have the appearance of an alien's brain from a science fiction movie. These brain mushrooms are just one of the many types of false morels. To be safe, you should never eat a mushroom unless you are absolutely certain that you know it's a safe species. To that end, there are several good mushroom identification books available on the market.

In addition to the dozen or so plants mentioned above, there are dozens of other plants and flowers that planters will eventually come to recognize by sight. There are photos of many of them in the online resources associated with this chapter, even though there isn't enough room in this book to go into everything in detail. Some of the other plants and flowers that are common on and around our camps and blocks include: Dandelions, wild roses, daisies, black-eyed susans, arnica, thimbleberry, trillium, camas, larkspur, buttercup, clover, violets, yarrow, skunk cabbage, tiger lily, devil's paintbrush, cow parsnip, licorice ferns, fiddleheads (tasty), and wild ginger.

If you want to do further research, here's a list of useful books:

Edible and Medicinal Plants of Canada, by Andrew MacKinnon.
Plants of Northern British Columbia, by MacKinnon, Pojar, & Coupe.
Plants of Southern Interior British Columbia, by Parish, Coupe, & Lloyd.
Plants of the Pacific Northwest Coast, by Pojar & MacKinnon.
Plants of Alberta, by France Royer & Richard Dickinson.
Plants of the Western Boreal Forest and Aspen Parkland, by Johnson, Kershaw, MacKinnon, & Pojar.
Plants of Southern Ontario, by Richard Dickinson.
Trees and Shrubs of the Maritimes: Field Guide, by Todd Boland.
Edible Plants of Atlantic Canada: Field Guide, by Peter Scott.
Wild Edible Mushrooms of British Columbia, by Tom Cervenka.
Mushrooms of the Pacific Northwest, by Joe Ammirati & Steve Trudell.
Wild Edible Mushrooms of Alberta, by Tom Cervenka.
Mushrooms of Ontario and Eastern Canada, by George Barron & Lee Craig.

The Hinterland "Who's Who" website has some good resources about various plants: www.hww.ca

For more photo and video resources associated with this appendix, visit:

www.replant.ca/training/plants