Chapter 23 - "Nature & the Environment"

One of the best parts of tree planting is getting to spend time outdoors, enjoying the benefits of health and of some amazing scenery. You'll become more aware of plants, flowers, animals, and birds. Of course, working outdoors is not always good. You'll have to deal with weather and temperature extremes, insects, and other challenges. In this section, we'll take a very quick look at some things you might see or experience on your blocks. We'll also give you some hints about some of the things that you might learn about nature and the environment, things that you'd probably never learn if you stayed in the city.

Weather

We've covered weather already in the section about hazards and safety, so we won't get into too much detail here. However, weather and temperature are definitely related to the environment. You've already heard the warnings about being prepared for weather extremes, and how to minimize the chances of hypothermia or heat stroke. We can't reiterate this enough: make sure you're always prepared. If you're smart, you'll always have good rain gear and extra dry clothing packed in a waterproof bag, and you'll always have lots of water on hot days.

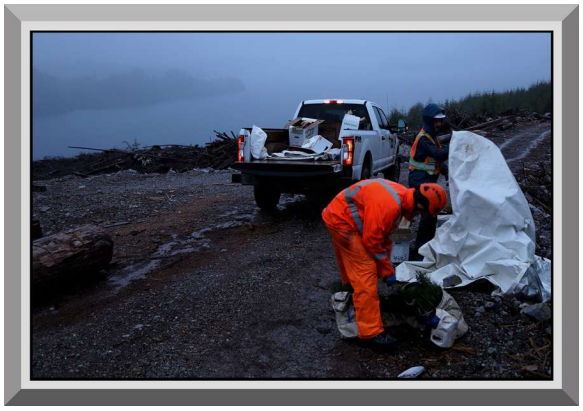

Figure 23.01
Yes, We Plant in the Rain.

As miserable as it can be to plant in a cold rain, you may as well get used to it. You can't stay home on rain days, unless you want to lose out on a lot of potential earnings.

Also, it's important to recognize that inhospitable weather is part of the job. We work in the rain. We sometimes work in light snow, if the ground isn't covered. We work in winds, unless there's a danger of trees toppling onto planters. Probably at least a quarter of your work days will be spent in miserable weather (and if you ever work on the coast after you have many years of experience, ninety percent of your work days will be miserable weather). You can't afford to sit down and sulk, and

wait it out. You need to realize that you can still make money in the rain, and that you're going to have to get used to working in it, even though it's harder on morale.

On a cold and wet day, you MUST keep moving. As soon as you stop working, even for a few minutes, you will get cold. Your muscles generate a lot of heat as they flex and contract, so planting hard can warm you up quite quickly. Planters often feel depressed when they hear rain. Remember that the rain is loudest when you're sitting in the truck, or hiding under a tarp. Get out there onto the block, get moving, and you'll start to warm up and make money.

Figure 23.02
Hard Rain.

Rain seems to be more miserable when you're working outside than it does in the city.
Photo Credit: Annie Maheaux.

Figure 23.03
Holy Hail.

You're almost guaranteed to get caught in a hard hail at least a few times each season, especially if you're working in western Canada.

Rain unfortunately also slows planting down for other reasons than just the fact that it can be depressing. Access issues can be a problem in heavy rains, as muddier roads become dangerous or impassible. Drivers need to slow down on wet roads. Trucks may get stuck if drivers try to push too far into blocks without a solid road foundation. Sometimes, it's better to park the truck close to the block and walk the last few hundred meters. You don't want to get the truck stuck in bad puddles at the entrance to the block because you were too lazy to walk the last few hundred meters, and then have some sort of emergency and not be able to evacuate a victim to medical aid.

Figure 23.04
Wet Access.

You probably shouldn't ever drive through water if you can't see the road. In this case, I was confident that there was a road under the water, since the water hadn't been there earlier that morning, and could still see the road just under the surface.

Figure 23.05
Poor Weather Can Ruin Dirt Roads.

Sometimes, all it takes is a good hard rain to make a dirt road impassible.

Most planters don't pay a lot of attention to the weather, other than to try to guess if it's going to rain. Meteorology is an amazingly complex topic, far more complex than we'll go into here. However, I'll leave you with a few interesting facts:

- Low pressure systems usually result when warm air rises, lowering the atmospheric pressure on the rest of the air. Low pressure systems usually feature precipitation, unlike high pressure systems which are usually nice weather.
- Wind always circles counter-clockwise and inwards around a low pressure system in BC, when viewed from above. Wind around a high pressure system always blows clockwise and outward.
- If you're standing with a steady wind at your back in BC, the low pressure system (and the area most likely to have rain) is therefore always on your left side.
- There are ten major categories of clouds, and many variations on these ten basic groups, but only three of the cloud groups commonly produce precipitation.
- Thunderstorms commonly occur because as the day progresses, the sun heats up the ground, causing air to rise and causing a low pressure system to form. That's why in some places, thunderstorms tend to happen at roughly the same time every afternoon.
- Helicopters can fly better when the air pressure is higher (more dense). Therefore, helicopters fly better at lower altitudes. Helicopters have a harder time when the temperature increases, because air rises and becomes less dense. And finally, air saturated with water is surprisingly less dense than unsaturated air (this relates to molecular weights), so it's harder for a helicopter to create lift on a muggy day than on a dry day. In other words, four things that are challenges for helicopters all start with H: heavy loads, high altitudes, hot temperatures, and humid air.

- Between the start of your spring season and June 21st, sunrise happens about ten minutes earlier each week, and sunset happens about ten minutes later per week. In the six weeks leading up to June 21st, the days grow two hours longer - an extra hour of daylight in the morning, and an extra hour in the evening. After June 21st, the days start growing shorter and the opposite is true.

Figure 23.06
Windstorm in Camp.

It's a good thing that this first aid tent is tied to the reefer, otherwise, it would be airborne right now.

Figure 23.07
Tornado Damage.

This is not the aftermath of a crazed logger. This section of forest was destroyed when a tornado touched down. If you see a lot of trees snapped off about 10-20 feet above the ground, it's probably due to a tornado.

Determining Direction from the Sun & Other Stars

If you don't have a map or compass or GPS to help you, and it's a reasonably sunny day, and you know the approximate time of day, you can quickly point out approximately where north, south, east, and west are. This may seem like magic, but it's not!

We all know that the sun always rises in the east. If you're in the northern hemisphere, which includes all of British Columbia, then the sun is always approximately due south at solar noon. There will be a slight error, especially closest to June 21st, which is related to seasonal precession and the tilting of the Earth's axis. However, your estimate will be quite close, within about twenty degrees at worst. So let's assume that you're on a block, and you can see where the sun is. If you know that it's approximately noon, then you can point at the sun and know that direction is due south. Knowing that, you can figure out north (behind you), east (to your left), and west (to your right).

Let's say that it's not noon. Let's assume that it's mid-morning. In the northern hemisphere, the sun always moves from left to right throughout the day. If it's not noon yet, you can look a bit to the right of where the sun is right now to make a guess of where it'll be at noon. You can call that direction south.

If it's after lunch, then the sun will have already passed the mid-point of the sky. Look to the left of the sun, and make an estimate of where it was a few hours ago, at noon. You'll be able to point that direction out as due south.

Figuring out approximate directions is easy if you can see the sun and if you know approximately what time of day it is, and you'll usually be within ten or fifteen degrees of being correct once you practice a bit.

Solar noon is not quite the same time as local noon. Solar noon varies depending on whether you're closer to the eastern vs. western side of a time zone, and varies slightly depending on time of year. Also, solar noon is an hour later in the day (centering roughly around 1pm) in the summer, during Daylight Savings Time.

You can also determine directions at night if the stars are visible. It's actually very easy. Learn to recognize the constellation known as The Big Dipper. It's quite visible in skies in the northern hemisphere. The Big Dipper is composed of seven stars in total. Three are in the handle, and four make up the "pot" that holds the mythological water. If you look at the two stars on the "front" or "outside" of the pot, away from the handle (they're named Merak at the front bottom, and Dubhe at the front top), imagine a line drawn from Merak to Dubhe, and extending out about four times further in a straight line. If you then look at the part of the sky where that imaginary line ends, you'll see a single star that stands out fairly well in a relatively dark patch of the sky. This is Polaris, the north star. If you're facing Polaris, you're facing north.

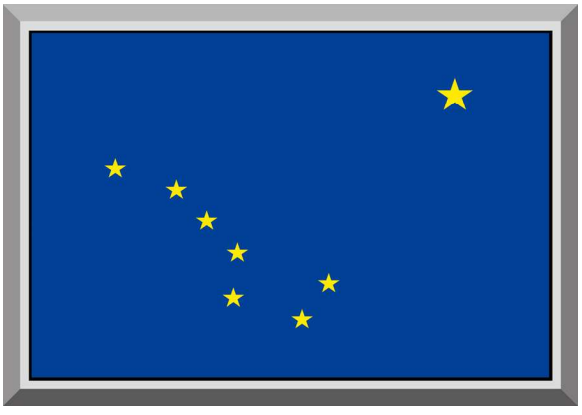

Figure 23.08
Locating Polaris, the North Star.

Many planters readily recognize the constellation known as the Big Dipper. The two stars on the "front" of the dipper point almost directly to Polaris, which sits by itself in a relatively dark part of the sky. If you face Polaris, you're facing north.

If the sky is cloudy at night, you probably won't be able to figure out which direction is north. However, on a positive note, clouds act as insulation for the Earth at night. If you have a cloudy night, you're going to be a lot warmer in your tent than if the skies are clear. A crisp clean evening in late April or early May might be nice for the stargazers, but it's chilly for planters. Make sure you

invest in a very good sleeping bag, and have a foamie or something that provides additional insulation from the cold ground under your tent (or find a friend to share body heat).

The Moon

The Moon really means nothing to tree planters, except that when it's present, you may be able to find the outhouses at night without a flashlight. Regardless, the Moon is fascinating to many planters, so let me take a paragraph or so to give you a better understanding of how it works. People who live near the ocean (especially surfers) know a lot about the moon, as it (and the sun) create our ocean tides. However, many city dwellers are woefully ignorant of how this celestial body dances around us.

First, the Moon does not really orbit the Earth the way that almost everyone imagines. No, I'm not a flat Earther. The Moon and Earth together orbit a point in space called their barycenter, which is their common center of mass. The Moon completes one revolution "around" the Earth (relative to the stars) every 27.32 days. This is called a "sidereal" month. It completes one revolution relative to Sol, our sun, every 29.53 days. This is called a "synodic" month, and is important because this matches the visible phases of the Moon (new moon, full moon, first quarter, third quarter, and waxing/waning gibbous or crescent). A lunar eclipse happens when the Moon falls into the Earth's shadow, and can be seen from anywhere on the Earth. A solar eclipse comes when the Moon moves between the Earth and Sol, and can only be seen from points on the Earth which fall into the Moon's shadow. Most lunar and solar eclipses are only partial eclipses, because the three bodies aren't lined up perfectly, and happen between four to seven times per year.

The phases of the Moon are very regular and predictable. Here's a great link if you'd like to learn more: https://en.wikipedia.org/wiki/Lunar_phase

Plants

You'll quickly learn that there are hundreds of types of grass, brush, and other vegetation that you'll encounter. Most vegetation is fairly benign, and you won't need to be able to identify very many types of plants, but a few are good to know. After a few years of experience, you'll come to understand the seasonal progression, from relatively brown and barren blocks in early May, to thick green blocks covered in grass and other vegetation in July.

Grasses are usually annoying to planters. Grass roots are fairly strong, so if you're planting in areas with thick grass, the sod is going to be a problem if you need to screef down through the root mat. If this is the case, consider using your shovel to screef, instead of your boot. If you turn the shovel sideways as you're screefing, you might be able to slice up the sod and remove it with less effort.

Figure 23.09
Dealing with Heavy Grass.

The greening up of the blocks is one of the several annoying things that planters have to deal with as the spring fades into summer.

Devil's Club is a thorny plant that you won't want to run into. This plant is found more commonly near the end of the season, and it usually grows in moist, shaded areas on blocks, where it can root in black organics. The stalks are very easy to identify from a distance, as they're one to two centimeters thick, and can occasionally grow to be as tall as a planter. When they're still alive, they'll have huge broad green leaves, but even after the plant dies, the dry stalk retains its thorns for a while. You'll mostly run into devil's club in gullies and along block edges, unless you're planting in a cedar belt. Luckily, it's so visible that it's usually fairly easy to avoid.

Stingy Nettles are a lot worse than Devil's Club. The thorns on stingy nettles are very small and soft, almost like hair. However, they release a chemical when you brush up against them, and this chemical causes a really intense itch in most people, which can last for a day or two. You might not even notice immediately when you brush up against nettles, but within a few minutes, you'll start getting itchy wherever your bare skin came into contact with the plant. As hard as it is, try not to scratch or rub the itch, because that drives the chemicals deeper into your skin and makes the reaction worse. Not everyone is affected by stingy nettles, but most people are, and being wet or sweaty often seems to make the reaction worse. If you take anti-histamines, that might help reduce your urge to scratch. There's no real antidote or cure, except to wait a few hours or days for the itching to go away. Unfortunately, stingy nettles are very hard to see. They're usually less than waist high, and look like very thin bare stalks. Several other types of vegetation look very similar. You won't run into them frequently in the spring, but they start to become more common in July in some areas. Stingy nettles usually grow on black organics or soft, rich mineral soil.

You'll see a lot of types of moss, especially any time that the ground becomes more moist or shaded. If you ignore taxonomic classification and go with slang terms, there are two broad groups of moss in BC: feather moss, and sphagnum. Feather mosses are types of boreal forest moss that usually have features that look like small tree branches or feathers. Sphagnum mosses are types of peat mosses, and often have star-like patterns. The difference is that feather moss can survive in fairly dry conditions, whereas sphagnum needs constant moisture to survive. Foresters will often allow you to plant trees in sphagnum moss, knowing that the ground will retain moisture even in dry months. You'll usually be allowed to plant the plug right into the moss rather than having to screef it away. Feather moss, however, usually isn't an acceptable planting medium, and you sometimes have to remove it and get down to dirt or organics below.

As the spring turns into July, you may start seeing several types of berries. You might see small strawberries hidden on the ground. Don't eat berries unless you're sure of what they are, since several types of berries are mildly toxic, and can cause stomach aches or even vomiting. In late July, you may start running into raspberries on a lot of blocks. Raspberries are quite safe to eat, although they're a bit thorny to work through. In mid-August, you may start seeing a lot of blueberries low to the ground, and Saskatoons (juneberries) on taller plants. Both of these are safe to eat. You may also occasionally see blackberries, huckleberries, and salmonberries. Pay attention to your surroundings, because bears are often attracted to areas with large amounts of berries.

Fireweed is a common plant, which appears in July. It grows quite quickly, covering blocks with stems that are three to four feet high, covered in pinkish or purplish flowers. The only real drawback to fireweed, aside from it getting to be fairly thick at times, is that later in the summer the flowers die and turn to a cottony dander which floats around in the wind and gets into your eyes, nose, and mouth.

There are several benign types of plants that don't really affect planters, but which you'll see and learn to recognize, such as cow parsnip, licorice ferns, fiddleheads, and wild ginger. You can google each of them to learn more.

You'll also eventually learn to recognize a number of different types of common flowers, such as: dandelions, wild roses, daisies, black-eyed susans, arnica, thimbleberry, trillium, camas, larkspur, buttercup, clover, violets, yarrow, skunk cabbage, tiger lily, and devil's paintbrush.

Salal is a plant that most first-year planters won't encounter, but which is important to coastal planters. Salal has thick, waxy leaves. Cedar is about the only conifer that thrives in salal patches. You've probably seen salal leaves before, because they're commonly used around the world in floral arrangements. Salal berries are quite edible, although you probably won't see them until the fall.

Labrador tea is an annoying flower, because it has very tough roots that are hard to plant into.

There are dozens of types of mushrooms that you might find on the blocks. Many are edible, such as black morels, but there are a few types that will make you moderately or severely sick. If you're interested in mushrooms, it's a good idea to buy a guide book, just because there are so many unique varieties. A great book to check out is "All That Rain Promises And More," by David Arora.

Poison oak and poison ivy are less recognizable. Luckily, they're also not common on planting blocks. You might very occasionally see them along the edges of blocks, in shaded areas. If you brush up against them, the chemical toxins on these plants can give you some very bad rashes. Luckily, it's quite rare for planters to come into contact with either of these plants.

Giant hogweed is another plant to avoid, because it is completely covered in a sap that is fairly toxic and causes significant rashes, blisters, or other longer-term problems. WorkSafe BC has even issued alerts about giant hogweed. However, giant hogweed can be easily confused with cow parsnip, which doesn't have toxic sap.

Don't eat plants unless you're absolutely positive about their identification. Several common plants in BC are quite poisonous, such as false hellebore.

This book has an appendix which goes into more detail about a variety of common plants and flowers that you'll see while you're planting.

Animals

You may see both grizzly bears and black bears on your blocks. Black bears are far more common. Each type of bear has some specific identifying characteristics, such as the shape of their face, or the shape of their back. However, you shouldn't use their size or the colour of their fur as a reliable means to differentiate between the species. Grizzlies and black bears sometimes react different to the presence of humans. It's important for planters to watch a Bear Aware video to get a better understanding of the differences between these two species. Check out: www.replant.ca/bearaware

Ungulates is a term that is used to encompass most of Canada's larger four-legged animals (moose, deer, elk, caribou, and horses). Some of these animals may look cute, but they can be dangerous if they become aggressive, especially in the presence of young animals or during rutting season. Almost everyone knows what a moose looks like.

There are generally two types of deer in Canada: mule deer, and white-tails. The mule deer has almost no obvious tail, and usually hops when it runs. The black-tail deer is a subspecies of mule deer. The white-tail deer has a more conventional four-legged way of running, and when they are nervous, their white tail stands up like a warning flag.

Elk are very large animals that are close to the size of a moose, and are most frequently seen near Jasper, or in a few other locations throughout BC. Caribou look similar to elk, but they're usually only about half the size, or slightly larger than a mature deer. Caribou, like elk, are far less likely to be encountered than moose or deer. You may also run into feral horses in many parts of BC and Alberta. Some parts of northern Alberta also have wild buffalo, although I've never seen any.

There are three main types of wild cats in BC. Cougars, also known as mountain lions, are the largest. The largest cougars can weigh 200 pounds or more, and could potentially be fairly dangerous. However, they're also very reclusive, and most planters will never see a cougar in their career. Bobcats and lynx are much more common, and they're also much smaller and haven't been noted as being dangerous to planters. These two cats are also easy to confuse. Bobcats look fairly

similar to a large house cat, and have striped bands on their tails. Lynx have crazy-looking faces, with big tufts of fur that you don't see on household cats, and they don't have stripes on their tails. The bobcat is more commonly found in southeastern BC, whereas the lynx is common in most parts of the province except for coastal areas.

There are very few smaller animals that could theoretically pose a danger to planters. You might get sprayed by a skunk, or get poked by quills if you run into a porcupine, but we rarely see either of these animals, and I've never heard of a planter being harmed by either. Wolverines are another exceptionally fierce animal, but few planters will ever see a wolverine, and I've certainly never heard of a planter being attacked by one.

Of course, there are also many benign small animals. You'll probably see many rabbits, hares, mice, moles, voles, squirrels, rats, gophers, beavers, and other small animals during your career. None of them should be immediately dangerous to planters, although several of these animals can carry various diseases, and mice are especially dirty little animals.

This book has an appendix which goes into more detail about a variety of common animals and birds that you'll see while you're planting, which you can find online at www.canadiantreeplanting.ca

Environmental Management Systems

One of the most common acronyms that you'll come across while planting is EMS, which stands for Environmental Management System. It's usually one of the first questions that an auditor will ask a planter, if they visit you for an interview on a block.

Almost every significant logging company, pulp or lumber mill, and government division has an EMS in place. Most planting contractors do too. The point is to outline a set of rules that the company wants to follow in order to protect the environment. Environmental stewardship is very important in terms of long-term planning, and in creating a sustainable operation.

An EMS generally aims to protect all aspects of the physical environment, plus the plant/animal/insect life found within it. One acronym that a major mill formerly used was PAWS, which meant "protect air, water, soil." The fact that paws was a play-on-words for animal feet presumably incorporated living things into the mindset.

With respect to air, planters don't generally have much of an impact. With respect to water, we try to do things like avoiding running vehicles (quads or trucks) through creeks, streams, or even small ephemeral (seasonal) run-offs, because the wheels can stir up dirt, which leads to sedimentation suspended within the water, and when that sedimentation flows downstream to fish-bearing habitat, it chokes the lungs and respiration systems of fish and smaller aquatic life. For quads especially, it's common for foresters to require that we lay down corduroy or build small quad bridges before

crossing the water, to minimize or eliminate disturbance and sedimentation. The good thing about this, above and beyond the fact that it's good for the environment, is that it also makes it far less likely that the quad will get stuck in the mud.

With respect to soil, rutting is the big problem. This is more of an issue for loggers, who are driving their heavy machinery all over the landscape. However, in some areas, if we rut up the roads with our trucks, foresters need to bring graders in to fix the damage afterwards. ATV's can also cause ruts or tracks on the blocks, so operators are sometimes asked to take steps to mitigate this type of damage (corduroy in wet patches is very helpful, although it is too time consuming to be effective for all but the worst areas).

When it comes to living things, remember that animals, birds, and even amphibians and smaller creatures are still living organisms. Treat them with respect, and try not to injure or kill them. That would be cruel and unnecessary, and some of your fellow planters would think very poorly of you if you killed frogs and other small creatures that you caught. Besides, you should focus your energy on planting trees, not on catching animals. At some point in your career you'll likely step on a bird's nest by accident, or even stumble upon a sleeping fawn. With any luck, you'll notice these sort of things before you harm anything.

Most contracts require a planter contractor to have spill kits in all the vehicles, and at any fuel cache. A spill kit is usually filled with various types of materials that are able to help mitigate any sort of damage that might result from a spill of a hazardous substance such as gasoline, diesel, motor oil, or antifreeze. Gasoline and diesel will usually evaporate on their own, given time, but this isn't a good mitigation approach if the fuel might soak into the ground or flow away from the spill area, because in either case it will eventually flow to a downstream watershed. Some spill kits contain a sand or similar looking chemical absorbent. Others contain various types of foam or cotton batting to soak up the spill. There are even special materials that will soak up fossil fuels but not water. The bottom line here is that if you spill a significant quantity of anything, let your supervisor know. Don't just walk away and ignore it if there's anything that you can do to reduce the damage to the ecosystem.

For more photo and video resources associated with this chapter of the book, visit:
www.replant.ca/training/nature