Chapter 08 - "Working Safely, Hazards"

In this chapter, we're going to focus on Safety within the reforestation industry. Topics that will be covered include assessing risks, identifying hazards, some common safety hazards, and official industry-sponsored training courses.

Incidentally, vehicles are unquestionably the biggest safety hazard in our industry. Due to this, they deserve their own specific chapter, which is found in the General Knowledge section (Chapter 25).

There is a relationship between Safety and First Aid, although they are completely separate and distinct fields of study. Safety often focuses on prevention, and First Aid often focuses on treatment.

It is also important to understand the distinction between proactive and reactive policies. Proactive policies are ones designing to prevent a bad situation from happening, or to encourage a good situation to happen. Reactive policies are ones that are intended to be set into motion after an event happens. For example, with wildfires, proactive policies would be ones designed to prevent us from accidentally setting fires (keeping the mufflers of ATV's clean) whereas reactive policies would be ones designed to guide a worker re. what should be done if a fire occurs. Often, both types of policies are needed with respect to any specific type of hazard, but proactive policies can prevent problems from happening in the first place, whereas reactive policies are only designed to mitigate problems that have already happened. A professional health and safety program will put a great deal of emphasis on proactive policies, without dismissing reactive policies.

When it comes to Safety, be proactive. Think actively about safety practices and potential hazards. If an incident occurs, make sure that you know how to react. Perhaps there is an Emergency Response Plan (ERP) available to help guide you through specific steps that you can follow.

Common Safety Abbreviations

Before we go any further, let me list a dozen or so key abbreviations relating to safety that you'll come across quite commonly as a tree planter. You should memorize these:

ATV – All Terrain Vehicle
ELT – Emergency Locator Transmitter

ERP – Emergency Response Plan
ETV – Emergency Transport Vehicle
HSE – Health, Safety, Environment
ISO – International Standards Organization
SDS – Material Safety Data Sheet (formerly MSDS)
MTC – Mobile Treatment Center
AFA – Advanced First Aid [training standard]
IFA – Intermediate First Aid [training standard]
PPE – Personal Protective Equipment
RTC – Rapid Transport Category
SPE – Safety and Performance Evaluations
TDG – Transportation of Dangerous Goods
WHMIS – Workplace Hazardous Materials Information System
WSBC – WorkSafeBC (formerly the Workers Compensation Board or WCB)

You can find more information about any of these items later in this chapter, or in the Definitions appendix.

Workplace Hazards

You may wonder what a workplace hazard is. Basically, it's anything that can injure workers or damage equipment. It could be a physical item, like a bear. It could be an intangible item, like a cold day. It could be the absence of something, such as not having a safety barrier on the side of a road along the edge of a cliff. It could be a process, such as a poor technique used by a planter to squeeze dirt around a tree. In more general terms, hazards can fall into multiple categories, including physical, biological, chemical, psychological, and social hazards.

It's easy for me to talk about hazards without it being an abstract topic. The thing about tree planting is that if something can go wrong, it often will. Just about every type of problem or accident that I'm going to talk about is something that I've unfortunately seen first-hand.

Figure 8.01
A Hazard Sign in a Wildfire Area.

Most hazards are not identified as readily as this one, and workers need to look around themselves occasionally to make sure there aren't any hazards that they weren't already aware of.

In my mind, the biggest problem in our industry is that many new workers are afraid to speak up when they see something that doesn't make sense. The entire tree planting industry is basically focused on a system of seniority, from the very core. The people who have been planting for the longest time are often the best and fastest planters, which means that they're making the most money. In many cases, they're also the most respected. When a first-year planter sees something odd happening but another planter with several seasons of experience doesn't say anything, the first-year planter is probably going to be reluctant to speak up and question what's happening. This is a huge problem. Luckily, the situation is changing slowly. The planting industry is able to attract large numbers of applicants, which means that if hiring personnel do a proper job of due diligence during the interview process, newly hired planters should be high-quality candidates who are intelligent and have common sense.

It's important to remember that a planting block and a planting camp are both examples of locations that are considered to be part of the workplace. A worker is not allowed to take "private" risks that are deemed dangerous in the workplace. You cannot voluntarily choose to ignore safe work practices. Put quite simply, that would be grounds to have your employment terminated. Working safely means that you're taking conscious steps to mitigate any known or potential hazards through engineering, administrative, or elimination/substitution controls, or through the proper use of personal protective equipment (PPE).

If you see something that looks unsafe, or doesn't make sense, please say something! Just because something has "always been done that way" doesn't mean that it's the best way. If you're worried about looking ignorant or ruffling a few feathers, just be diplomatic about how you say something. You might be able to pick your wording carefully to help convey a message. A good supervisor or crew leader usually has a lot of experience and their approach to a problem or situation probably makes sense. But a good supervisor or crew leader will always listen to a first-year planter, consider what they're saying, and explain why their suggestion may or may not be appropriate for the situation. Even with the experience that I've accumulated over the years, I'm still surprised at least once each season when a first-year planter brings up a suggestion and I think to myself, "Wow, why didn't I think of that a decade ago?"

It is common for a crew to have a quick "tailgate meeting" at the start of each day, after arriving at the block. This meeting is used to discuss hazards, safety, and the operational plan for the day. It only takes a couple minutes, and it's a great opportunity for a crew leader to ensure that everybody on the crew knows what the plan is for that day.

Figure 8.02
Crew Tailgate Safety Meeting.

A brief safety meeting before starting work is an invaluable way to get everyone organized at the start of the day.

Assessing Risk

Risk is the likelihood that a hazard will cause harm. Assessing Risk involves prioritizing a possible problem based on two separate factors: the likelihood of it occurring, and the severity of the results if it does occur. You can think of risk as a numerical or statistical assessment of the likelihood that a hazard will cause an incident or accident. The potential severity can be more important than the likelihood of occurrence. Events with insignificant consequences are given low priority, even if the chance that they'll happen is high. Events with potentially severe consequences are given high priority, even if the chance that they'll happen is fairly unlikely.

Let's look at two examples: a mosquito bite, and the rollover of a crew truck. A mosquito bite has a high chance of happening, but unless the mosquito happens to be carrying some deadly disease, which is unlikely in BC, then the risk is not high. As for the truck accident, the chance of being in a rollover is much lower than that of being bitten by a mosquito, but the consequences could be very severe. Therefore, the vehicle has a high-risk priority.

Any incidents in high-risk categories should be examined carefully. In this example of the truck rollover, some proactive solutions might include:

- More focus during safety meetings.
- Consistent use of PPE such as seatbelts.
- Administrative controls, such as requiring drivers to have clean driving abstracts and take bush driving courses.
- Engineering controls, such as installing GPS trackers in trucks that allow the company to monitor speeding remotely via satellite.

Figure 8.03
Vehicles are our Biggest Safety Issue.

There are far too many rollovers and other vehicle accidents within our industry every year. If workers don't feel comfortable with the driving habits of their driver, they should speak up.

Every company should prioritize focus on worksite activities that present the most potential risk to planters. Even a potential event such as tendonitis, which only has a medium impact, should receive significant attention if there's a moderately high chance of it happening to any individual planter. Tendonitis has been acknowledged as a health problem with increasingly frequency in the past four or five years.

Figure 8.04
Tendonitis is a Common Injury.

Injuries don't have to happen instantly. They can build up over a period of time. Some people refer to tendonitis as a type of long-term "wear and tear" injury.

Risk awareness and risk identification skills should be taught by supervisory staff to all new workers. If you don't feel comfortable in looking around the workplace and trying to identify potential hazards, ask your crew leader or trainer for a demonstration of how he or she would do a risk assessment.

It is also beneficial for workers to participate in emergency drills or practice scenarios. These practice runs train new workers on how to respond if there's an emergency, they help identify any deficiencies in response procedures, and if there's an actual emergency, they help ensure that the situation is managed more smoothly because workers are comfortable with their roles.

Figure 8.05
First Aid Simulation & Emergency Response Drill.

A crew of new workers is learning how to respond in the event of a serious first aid incident.

Personal Protective Equipment

Some examples of Safety PPE for planters include a safety whistle used to alert others in an emergency, bear mace, head protection, hi-visibility vest, a personal first aid kit, compression bandages (pressure bandages), and so on. Most of these items were traditionally not required when planting in the BC Interior, although that situation is changing rapidly. On higher-risk sites such as on the BC coast, many of these items (except for mace) have been mandatory for all planters for years.

Figure 8.06
High Vis and Hardhat.

Planters in some parts of the country are required to wear hard hats and hi-vis. This is not the case in most regions. Hard hat use is most common on the BC coast, in the Alberta oil patch, and throughout Ontario. Hi-vis clothing is now required throughout BC.

In most areas, the use of CSA-approved climbing helmets has been permitted and even encouraged as a substitute to wearing a hard hat. If you're working on a contract where head protection is required, check first before you invest in a climbing helmet, but you'll usually be Ok to use one. Since 2023, the use of head protection has been mandatory throughout BC whenever an overhead hazard exists, such as when planting in stands damaged by wildfires.

Formerly, hi-vis shirts were typically only mandatory for planters on Vancouver Island and on certain projects in the oil patch, but that seems to have changed recently. While we're still trying to get clarification, it seems that as of 2026, planters are required to wear hi-vis everywhere in BC. To be fair, if someone gets injured and collapses on a block, and a crew is trying to find them, hi-vis clothing might make a big difference in locating that worker more quickly.

Figure 8.07
Wearing a Climbing Helmet.

The use of climbing helmets instead of hard hats has been increasing in recent years, with most licensees agreeing that they should be permitted so long as they are CSA-approved. A climbing helmet is much cooler than a hard hat during the heat of summer.

Some examples of other Safety PPE that you might see around a planting camp could include ATV helmets, chain saw pants, oven mitts for the cooks, a hard hat and face shield and ear muffs for someone using a chain saw, or rubber gloves for washing dishes.

Figure 8.08
Helmets for ATV Operators.

If you're operating a quad, or riding as a passenger on any type of ATV that permits seated and belted passengers, you'll be required to wear a proper ATV helmet.

Figure 8.09
Fallers' Head Gear.

Anyone doing chain saw work needs to wear a hard hat with ear protection and a face screen. These helmets are also handy for anyone who is doing slinging or other ground crew work with helicopters.

Natural Worksite Hazards

While it's possible for new hazards to appear in the workplace unexpectedly, most of the time a planter or crew leader will simply have to assess whether typical regular hazards are present, in order to determine if special safety considerations need to be implemented on a site. I'll start by listing some typical hazards that you might find on a block, and how to deal with them.

Slash is the debris that gets left behind after logging. It basically consists of chunks of trees ranging from tiny pieces of branches, to large logs that are difficult to climb over. A block without much slash is said to be fairly clean. A slashy block can present problems. Slash is uneven and slippery, it's difficult to walk over, and broken branches can cut or impale you. Some of your best options if you're working on a block with a lot of slash are:

- Wear caulk boots.
- Choose your foot placements carefully. Don't jump from log to log with reckless abandon. I've known planters who have slipped and gotten concussions or impaled themselves while doing this.
- Test logs or branches for their ability to hold your weight before stepping onto them.
- Use your free hand or shovel for additional balance, in what is referred to as "three-point contact."
- Avoid walking on logs with loose bark.

Figure 8.10
Slash is a Hazard.

Some blocks are priced much higher than others. That's a double-edged sword. High prices generally go hand-in-hand with difficult, technically challenging blocks. On slashy blocks, you'll probably want to wear caulks and walk very carefully.

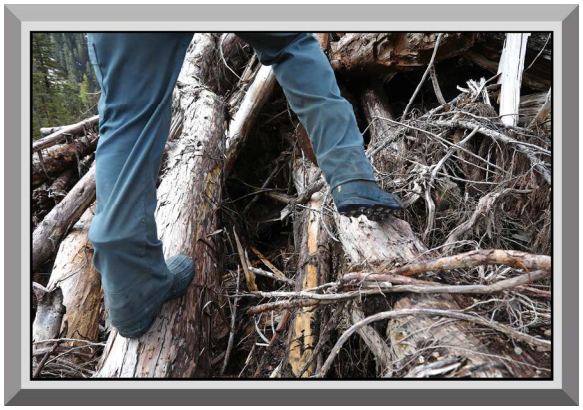


Figure 8.11
The Advantage of Caulks.

Caulked boots are a significant advantage if you need to crawl around on a lot of slash. However, they are unnecessary in many parts of Canada.

Many blocks are not flat. When you're working on a slope that starts to exceed maybe 25% or 30% slope, you should start to consider it to be a bit of a hazard. Even if your footing is still stable on a slope that isn't too steep, you may be putting your knees, ankles, and neck under more strain than usual. Steeper slopes have a greater risk of slips or falls. A planter working up-slope from you can accidentally knock rocks or other debris down onto you. Here are some suggestions when working on steeper slopes:

- Wear caulk boots, and choose your footing carefully.
- Avoid working directly above or below another planter.
- Eat properly and be well-rested so you have more energy.

Figure 8.12
Steep Ground.

Slips and falls can be a major hazard when working on steep ground. This is another coastal block, which is a bit of an extreme example compared to most other parts of Canada. However, this isn't particularly steep for the BC coast. The coast can get a lot worse.

Rocky terrain is hard on the body, even if you don't fall down. Rocks buried in the ground will jar your planting shovel, creating vibration in your planting arm. Rocky terrain can also be a problem for slipping, tripping, or falling. Here are some suggestions if you're working on ground that's especially rocky:

- Learn to recognize softer spots, based on slight variations in the contour of the ground, and on vegetation coverage. This is a very tough skill to learn, and it's usually only acquired after a great deal of time. Many first-year planters are amazed when they see vets hopping around on a rocky block and almost always seeming to find soft spots. This only comes with a lot of practice.
- Tap the ground lightly with your shovel to see if there are rocks near the surface, before trying to stick the shovel in deeply.
- Use your kicker instead of trying to drive the shovel in with your arm.
- In really rocky ground, try wiggling the shovel rapidly with constant pressure on the kicker, instead of actually kicking it.
- Loosen your grip on the shovel.

Figure 8.13
Between a Rock and a Hard Place.

Planting in rocky ground is no fun at all.

If you find that you are tripping sometimes because your boot laces are getting caught on slash, you can tape them to your boots each morning with duct tape, to eliminate the hazard. This practice is also useful for crew leaders or tree runners who do a lot of work with a quad, so their left boot lace doesn't get caught in the shifter on the quad.

Figure 8.14
Duct Taping your Boot Laces.

If you duct tape your boot laces each morning, you're less likely to trip when you're working in heavy slash.

Brush and other undergrowth can present some of the same navigational problems as slash, and can also scratch and injure a planter. Here are some suggestions for dealing with brush:

- Wear long pants and long-sleeved shirts, plus a pair of gloves.
- In extreme cases, if there's a risk of an eye-poke when you bend over to plant a tree, consider wearing safety glasses.
- Tuck loose boot laces into your boots, or as mentioned, put duct tape over them, so they can't snag on brush or slash.

Figure 8.15
Wear Protective Clothing in Heavy Brush.

If you're working in thorns and heavy brush, you'll definitely want to wear long pants, long sleeves, and gloves. You should also consider wearing safety glasses.
Photo Credit: Andrew Ulmer.

Figure 8.16
Wearing Safety Glasses

Safety glasses aren't always very fun to wear, but they're worth if it they prevent an eye injury when working in a block with a high potential for poke injuries.

Danger Trees are mature trees that have become dangerous because they're unstable and at risk of falling over and crushing someone. Often the trees could be dead or dying, but not always. Some Danger Trees, which are also known (often somewhat incorrectly) as "snags," might not be likely to

completely topple, but there could be a large upper section that looks ready to break off. Some reasons why a tree might be classified as a danger tree could be because of a windstorm that starts to push it over, some sort of logging activity or erosion that loosens the roots from the ground, or a ground fire or animal damage or rot that weakens the trunk at the base.

Unfortunately, although the chance of being injured by a danger tree is not high, there is still a real risk. A tree planter, Izzy Brisson, was killed after being struck by part of a falling tree in July 2020 on a block near High Level. This was devastating news for the planting community.

Here are some suggestions for dealing with danger trees in your piece:

- Tell your crew leader about it.
- Don't work under it. In fact, don't work within one and a half tree lengths of the base, because branches can go flying and injure you when the tree falls, even if the trunk itself can't hit you.
- Consider putting up some flags to designate the dangerous area as a "no work zone" so other workers notice and don't walk under the snag.
- Don't try to push a snag over. A dislodged branch could break off and land on you. The upper trunk could break in half and fall back onto you.
- Danger trees are especially susceptible during and shortly after wind events. If winds exceed even 40 km/hr, the risk level rises considerably, and underplanting operations should cease working or move to open ground.
- One of the best sites/apps for paying attention to very detailed weather patterns (including wind measurements and forecasts) is www.windy.com

Figure 8.17
Watch Out for Danger Trees.

Planting underneath this danger tree could result in a serious injury if it fell onto a worker.

Figure 8.18
Consider the Use of No-Work Zones.

Here we see a crew leader flagging off a no-work zone (NWZ) around this danger tree in the middle of someone's piece.

You may occasionally have to cross a river or stream on foot, for some reason. This can be extremely hazardous due to the risks of slipping and falling. It shouldn't be a large risk because we don't usually have to cross streams on foot without a bridge, but silviculture workers have occasionally died from drowning, such as from when an ATV accidentally goes into a brook. Here are some suggestions:

- Follow directions from your crew boss.
- Wear caulks for any log crossings.
- Cross when there is someone else around to watch, who can help you if you fall in.
- Don't walk through flowing water if it's more than knee deep. Even water that deep is risky.
- Un-strap your bags, so if you trip and go under, your bags don't get caught and pin you underwater.
- Avoid situations where you have to cross water in the first place. Perhaps you can walk around the hazard. Perhaps your crew can work on a different block until the access issue is fixed properly.

Figure 8.19
Unsafe Water Crossing.

It would be extremely unsafe to try to walk across this swollen stream. A few planters have drowned while at work.

Figure 8.20
Be Wary of Road Washouts.

During the spring melt, it is common for roadways to be washed out. Don't try to cross something like this with your truck. In the early 1990's, an entire van load of planters went into a river during spring flooding near Prince George, and all of them were killed.

Water – drink lots of it, but treat flowing water with caution.

I've occasionally seen planters who get puncture wounds, either by stepping on something sharp when wearing footwear with a soft sole, or perhaps stick punctures through the skin (especially on bare arms). Puncture wounds are one possible source for tetanus. Tetanus is caused by a bacteria that cannot grow in the presence of oxygen. This bacteria typically exists in soil, dust, and animal

manure as a highly resilient spore that can survive for years. If the bacteria that cause tetanus are introduced to a surface scratch, the exposure to oxygen might prevent problems. However, punctures are often deep enough that the skin seals over, creating the anaerobic environment that the bacteria needs to produce the tetanus toxin. It's a good idea for tree planters to make sure they've had a tetanus booster within the past five years or so.

Planting Camp Hazards

Here are a few common hazards to watch out for when you're living in a planting camp:

- Don't set your tent up beneath dead, leaning, or other dangerous trees. There have been a few cases of trees falling and crushing planters' tents. Luckily, the worst incidents of this type that I've heard of so far have only resulted in broken bones, no fatalities (yet).
- The exhaust from generators and pumps is very hot, hot enough to melt plastic. Do not leave a jerry can of gasoline sitting on the ground directly beside a pump or generator. Make sure that it stays at least six feet away. I've seen several cases where the exhaust was hot enough to melt a hole in the side of a jerry can, or start a fire. Mess tents and kitchens have burned down.
- Vehicles have a tendency to run over things. Don't store equipment under a truck. Drivers are supposed to do a full walkaround before moving a truck, but often fail to do this properly. In one tragic incident in BC, a planter decided to have a nap on the ground behind a truck in camp, and the driver accidentally backed over them. Injuries can have life-altering impacts. Most injuries and equipment damage can be avoided with common sense and preventative measures.

Weather

There are five main risks due to inadvertent weather conditions: cold, heat, wind, rain, and lightning. Let's cover a few recommendations for each of these conditions.

Early in the season, it's possible to spend entire days working in near-freezing conditions. The effects of cold are compounded with wet conditions. You need to keep both warm and dry to avoid hypothermia:

- Own a set of good rain gear, and make sure you always bring it to the block, even when the forecast is good.
- Dress in many layers rather than just one or two thick items.
- Wool does a great job of retaining its insulating value when it gets wet. A wool sweater like a Henley brand from Stanfield's is not cheap, but it's favored among professional planters in the cold, wet conditions of the coast.
- Bring an extra set of dry clothing in your day-bag. Make sure you keep it dry by wrapping it in a plastic bag.

- Try to keep moving, as muscle movement generates body heat. You'll stay a lot warmer if you keep moving than if you sit shivering at a cache.
- Don't just think of cold rain as being a hazard. On a day that is cold and wet and windy, it's usually the wind that's the real problem, not the rain. This is when it helps to have a wind-proof rain pants and rain jacket.
- Watch for signs of hypothermia in yourself or others.

Figure 8.21
Be Prepared for Cold Weather.

Working in extremely cold weather is difficult, but it's part of the job. All you can do is have the right clothing so you're fully prepared.

Figure 8.22
Henley Brand Wool Sweater, by Stanfield's.

These wool sweaters are ubiquitous among planters (and all other forestry workers and loggers) due to their comfort during cold weather.

You'll often be working in open areas with little or no shade. Even in the shade, you can become overheated if the weather is very hot. Heat exhaustion is a precursor to heat stroke. Symptoms include cool, pale, clammy skin, headaches, nausea, dizziness, and fatigue. You need to cool down and drink lots of fluids. Heat stroke can follow heat exhaustion. Symptoms include lack of sweat, shallow breathing, rapid heart rate, and confusion. Heat stroke is an extremely serious medical condition, where you need to cool the victim immediately and seek medical attention:

- Dress appropriately in lightweight, loose, light-coloured clothing.
- Wear some kind of head covering to protect your head from direct sunlight.
- Sun screen is very important, especially at the start of the season.
- Long-sleeved loose shirts are best, but if you have exposed skin because you're wearing a t-shirt, use sunscreen.
- Carry lots of water, drink water before you start your day, and re-hydrate frequently throughout the work day. As I've mentioned, I always carry a couple of small water bottles on every run, so I can drink small amounts every fifteen minutes or so.

- Continue to drink lots of fluids in the evening, to help your hydration levels to fully recover for the next day.
- If you show signs of heat exposure, stop work and find a cool, shaded place to rest while you re-hydrate.
- I always recommend that people share pieces with partners during heat waves, so you can watch out for each other.

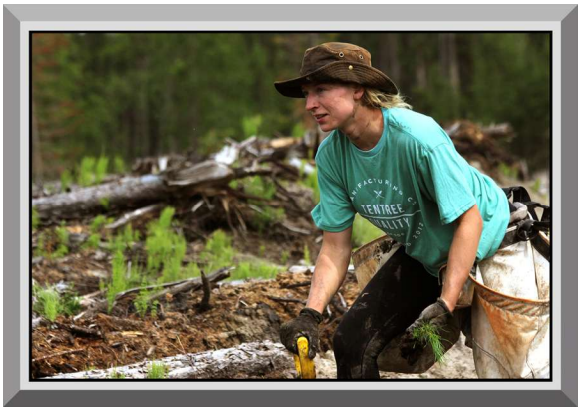


Figure 8.23
A Sun Hat Helps Prevents Heat Stroke.

Keeping direct sunlight off your head and the back of your neck significantly reduces your chance of overheating.

Figure 8.24
Always Wear Sunscreen.

In the short term, sun screen helps to prevent heat exhaustion or heat stroke. In the long term, it helps prevent skin cancer.

Wind will be especially dangerous when there are scattered "residuals" or danger trees throughout your piece. Strong winds can knock branches off trees, injuring workers below. Entire trees can topple and be fatal to a planter. If you're working in an area that suddenly becomes very windy and you see that there are overhead risks, take the initiative to move to a safer area immediately, before a crew leader comes and tells you to move. The wind is usually less active in the morning, so you may want to plant the areas along your tree-lines first, if that's possible, before the wind picks up.

Figure 8.25
Windy Conditions Create a Hazard.

If you're working in high winds, it is probably wise to stay away from woodlines and standing mature residual patches.

Lightning storms usually happen on your blocks a couple times per year. If lightning appears to be a risk, there are a couple things you can do:

- Return to the trucks, which are insulated from the ground by the rubber tires, or move to a low-lying area.
- Avoid hilltops, ponds, lakes, and standing in the immediate proximity of large trees.
- There is a myth that lightning always hits the tallest objects in an area, however, lightning will frequently bypass tall objects and hit objects closer to the ground. Regardless of this, it's best to keep a low profile.

If you are in camp during a lightning storm, do not use the showers. It probably isn't safe to be inside a large wet metal structure when lightning is nearby. If you see a co-worker heading to the showers during a lightning storm, remind them about the potential danger.

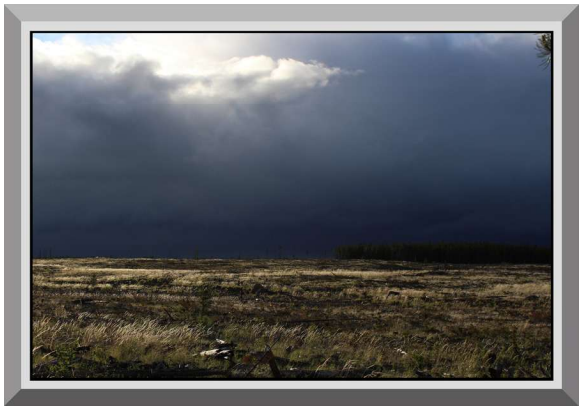


Figure 8.26
Storms and Lightning.

You can see a tiny patch of blue sky still remaining in the upper left of this photo. The weather on this block went from complete blue skies to a lightning storm in less than 20 minutes.

Wet conditions can lead to chilling and hypothermia, which we've already covered. It's best to get out of wet clothes and into dry clothing as soon as possible. If you have a dry change of clothes with you, you should change into them immediately before the drive home. There are also other hazards associated with rain that you should be aware of:

- Drivers should be more cautious on slippery gravel or muddy roads.
- Wear good footwear to keep from slipping. Caulks are especially good at preventing your feet from slipping on wet slash.
- A wide-brimmed hat and/or a good scarf can help keep water away from your neckline. The back of your neck is one of the worst places for heat loss from your body.

It is quite unlikely that you'll have to deal with tornadoes while planting. However, they do occur in a few areas, especially for people who are working in Alberta. I also watched one medium-sized tornado that ripped through a wildfire restoration underplant block that my crews were working on, near Cache Creek in 2020. It was ripping mature dead trees (50 foot high, >8" DBH) out of the ground and scattering them to the sides. That tornado lasted for well over two minutes, and would have been very dangerous had there been a planter working in its path. The only real safety recommendation that I can make if you see a tornado coming is to try to get into a heavy truck, and put on your seatbelt.

Planters often see "dust devils" on hot dry windy days. These wind vortexes are only a few feet across, and usually disappear within several seconds. If one is about to blow over you, close your eyes so you don't get foreign objects in your eye.

Figure 8.27
Flooded Roads.

Again, a few hours of rain can cause all kinds of access problems on top of the misery of planters being wet and cold.

Chemicals in the Workplace

You may encounter several different types of chemicals in the workplace. Every worker in BC should take a WHMIS course sponsored by your company, which might be done online before the season starts. WHMIS stands for Workplace Hazardous Materials Information System.

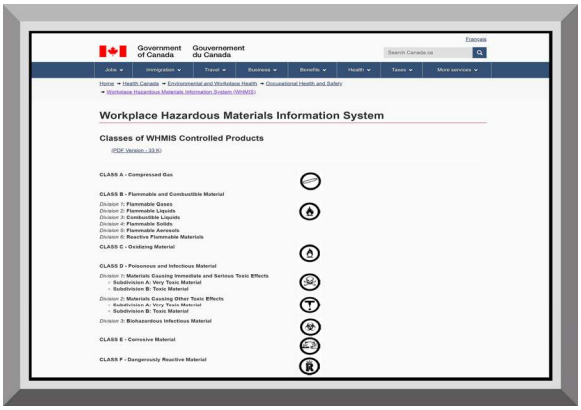


Figure 8.28
WHMIS Information.

WHMIS stands for the Workplace Hazardous Materials Information System.
Source: Government of Canada.

Some of the chemicals that you might encounter on a block include pesticides and fungicides that may be applied to trees. Be aware that when these chemicals are sprayed onto the seedlings at the nursery, they are usually diluted by large amounts of water. Even the concentrated original chemicals can be handled safety by nursery workers with proper precautions, so the risk to planters is probably not significant. However, that doesn't mean that you should ignore it. If the trees have been sprayed with anything, you should wear gloves when planting and when handling them, and wash your hands before eating. Some planters wear an inner layer of latex dish gloves covered by strong but thin nitrile outer gloves, to ensure that chemicals and pesticides don't come into direct contact with the skin. Try to avoid rubbing your face and around your eyes with dirty gloves. Not all trees are sprayed with chemicals. You can ask your supervisor for more information. He or she should be able to get more information, including Safety Data Sheets, known as SDS documents, that explain the chemicals used.

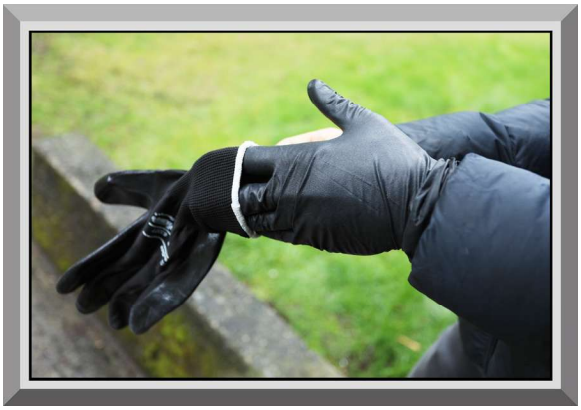


Figure 8.29
Gloves Prevent Exposure to Chemicals.

An inner nitrile glove prevents chemical exposure, while a tougher outer glove such as the nitridex protects the inner glove and keeps it from ripping.

Some blocks are also sprayed with herbicides that are intended to kill vegetation that competes with the seedlings that have been planted. These herbicides are usually water soluble and will dissipate within 24 to 48 hours, so there's generally almost no risk of planters coming into contact with significant concentrations. Herbiciding doesn't usually happen at the same time of the year as planting.

Wildfires

Wildfires usually burn millions of hectares of forests across Canada each year, which can be a larger amount of land than is reforested in any given year. In BC, the fires of 2017, 2018, 2023, and 2024 were especially intense, setting records and burning more than a million hectares each year. For perspective, it usually takes about seven to eight years for the entire BC reforestation industry to plant that much ground. Alberta lost over two million hectares in 2023. Saskatchewan and Manitoba combined lost over five million hectares in 2025. Quebec lost almost five million hectares in 2023. In 2023 alone, more than seventeen million hectares burned, which represented about five percent of Canada's entire forested land mass. Climate change is coming at us with a vengeance, and we are going to lose the fight. Nearly nine million more hectares burned in 2025.

Fires are a huge problem that cost billions of dollars in losses each year. However, it's also important to remember that a wildfire is Nature's way of tidying up and renewing an aging forest. Ask a dozen environmental experts about their views on fires, and you'll get a dozen different opinions. Regardless, everyone can agree that they can be dangerous to people who are unaware or unprepared.

Planters don't often encounter wildfires, although every year or so, I hear of a planting camp that had to be evacuated due to a fire, or a crew that got shut down because of a fire in the area in which they were working. Your company will provide some wildfire safety protocols, just in case. For planters though, the biggest concern is probably not in how to react to a fire, but rather, how to keep from setting one by accident.

Lightning is the biggest cause of fires in BC. Humans usually start about 40% of wildfires, either by accident, through negligence, or occasionally from arson. There have been numerous cases of planters accidentally starting fires on blocks or in camps, and I've already mentioned that one planting company in the 1990's (Bugbusters) was blamed for a multi-million dollar fire outside of Prince George that eventually bankrupted that company in court. I've even set a block on fire myself once, completely unexpectedly and by accident, when the exhaust pipe from my ATV lit some grass on fire and I didn't notice for about twenty minutes. That was an expensive accident, considering that we had to call in a heli-attack fire-fighting crew to assist us.

Figure 8.30
Unexpected Wildfire.

This wildfire was set inadvertently on a block in Alberta, when the tailpipe on my ATV started a small grass fire that subsequently spread throughout part of the block.

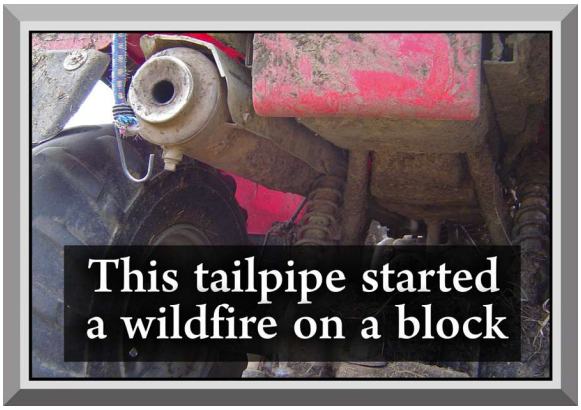
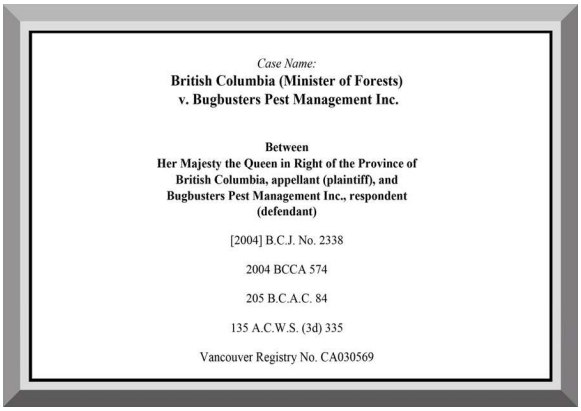


Figure 8.31
Keep Your Tailpipes Clean.

This is the very ATV that started the fire in the previous photo. This tailpipe was not cleaned before this photo was taken.



Case Name:
British Columbia (Minister of Forests)
v. Bugbusters Pest Management Inc.

Between
Her Majesty the Queen in Right of the Province of British Columbia, appellant (plaintiff), and Bugbusters Pest Management Inc., respondent (defendant)

[2004] B.C.J. No. 2338

2004 BCCA 574

205 B.C.A.C. 84

135 A.C.W.S. (3d) 335

Vancouver Registry No. CA030569

Figure 8.32
Bugbusters Fire, Prince George.

Here's a photo of a court document from the 2004 appeal case for a decision that found Bugbusters responsible for a wildfire that had been set inadvertently in 1992. That fire destroyed approximately 2000 hectares of forested land on a license owned by Northwoods.

Here are some ways to minimize the chance that you'll set a fire:
- Never throw a cigarette butt out of a truck window.
- Always smoke on a bare road, not out on the block.
- Keep your exhaust tailpipes clean on trucks and quads, so they're less likely to overheat.
- Don't light campfires when the fire risk rating is High or Extreme (you may not be allowed to anyway).
- If you do have a campfire at any other time, dig a good fire pit, line it with rocks, don't let it get too large, and have some fire tools ready by the fire, such as a couple of filled water backpack spray-packs and some fire shovels.

The numbers for reporting wildfires change from time to time. Make sure you memorize them at the start of the season. At the moment, the BC number is 1-800-663-5555 (or *5555 from a mobile). In Alberta, the number is 310-FIRE or 310-3473. In Northern Ontario, the number is the same as Alberta: 310-FIRE or 310-3473. Throughout southern Ontario and Atlantic Canada, you can call 911. Saskatchewan, Manitoba, and Quebec also use 911 for wildfire reporting.

Figure 8.33
Fire Bans.

It is common for campfire bans to be implemented in many parts of western Canada in July and August.

Bears

There are two bear species that an Interior BC planter might encounter – black bears and grizzly bears.

If you see a white bear, assume that it's an albino bear, not a polar bear. A group of us were once very lucky to get a sighting of an albino [black] bear in Fox Creek.

You may hear all kinds of other names such as brown bears and cinnamon bears, but these just refer to the colour of the coat of a black bear. Bears have a great sense of smell and are always looking for food. It is also a myth that they can't see or hear as well as humans. That is completely false.

Figure 8.34
Black Bear.

This black (coloured) bear is a black bear (species). Note the slightly convex [sloped outward] snout.

Figure 8.35
Grizzly Bears.

The grizzly has a concave snout, and you can see the slight inward curve in this photo. Even more noticeable is the hump on the shoulder, which is due to a large store of fat and muscle on the bear's back.

Here are some recommendations to minimize the chance of a problem with a bear:

- Never store food in your tent!
- Avoid wearing perfumes or anything that makes you smell especially good.
- Don't carry smelly food around in your planting bags.
- Dispose of garbage in a box at the cache rather than leaving it on the block.
- Don't get in between a mother and her cubs.
- Be alert for signs of a carcass, like a rotting meat smell or a group of scavenger birds, as this might be a bear's food cache.
- If there's enough brush to hide the presence of a bear, avoid surprising one by making noise while you work.
- If you run into a bear, try backing away slowly and calmly. If the bear continues to approach, stand still and try to look as large as possible, while shouting and appearing aggressive.

- Watch BC's "Bear Aware" video. It was produced by the provincial government, and your company should have a copy for you to watch. To find the "Staying Safe in Bear Country" video, visit: replant.ca/bearaware

Figure 8.36
Bear Aware Training.

If you take time to watch the "Staying Safe In Bear Country" video, you'll learn a lot about bears.

Very few planters carry bear repellant, also known as bear spray or mace. Some checkers and foresters, who typically work alone, are more likely to carry mace. I've seen several cases where bear mace discharged accidentally and caused problems for planters. Incidentally, if by some small chance you DO carry bear mace, make sure that you never take it into the cab of a helicopter. Bear mace must always be transported in the cargo hold or in a sling. It's also smart not to keep mace in the cab of a truck, in case it discharges accidentally.

For planters who work in areas where bears are common, bear mace may provide some reassurance. Persons who work alone in the bush (foresters, surveyors, timber cruisers, etc.) often consider mace to be an essential part of their daily gear.

Figure 8.37
Bear Mace Canisters.

Here are a number of cans of bear mace, of various brands.

Bear repellant is not used the same way as insect repellant. You spray insect repellant on your skin. Do NOT spray bear repellant on yourself. You will seriously fuck yourself up for a while, even if it's just on your skin.

Figure 8.38
Bear Mace Demonstration.

This photo shows the effective range of bear mace. Obviously, it's not very far. If a bear has gotten close enough that you need to use mace, you've probably done something wrong. Incidentally, this photo is highly artificially colourized to highlight the spray.

If you get bear mace in your lungs or eyes, it's not toxic, but you'll experience intense discomfort and pain for an hour or so. Be extremely careful that you're not downwind when bear mace is discharged. It lingers in the air for a bit too, so you'll want to leave the immediate area (heading cross-wind or upwind) as quickly as possible.

Figure 8.39
Wearing a Bear Bell.

Not many planters wear bear bells, but a lot of other forestry workers do.

To the best of our knowledge, no tree planters have been killed by bears since the 1980's, and it's difficult to find historical information for attacks while the industry was still maturing. However, we are aware of several fatalities and notable incidents that should remind planters to be cautious, because the potential for serious injury or death is quite real:

- A planter (Gordon William Ray, age 24) was killed by a bear in Fort Nelson on May 29th, 1985. He attempted to climb a tree to escape, but was attacked after falling out of the tree.
- Allegedly, there was another planter killed by a bear in 1988, according to a magazine article from 1990 that interviewed Dirk Brinkman, but we have no details about it. Dirk may have been referring to the 1985 incident.
- In August 1991, a 24 year old tree planter was mountain biking in Haines Junction (not planting at the time). He was attacked by a grizzly and mauled, with severe injuries to his forearm.
- A Silvaram planter was mauled in Mackenzie in June 1995, requiring more than 200 stitches. There was a photo of him (with stitches) in the Prince George newspaper a week later. The bear attacked him at breakfast when he startled it after going back to his tent to grab some gear. I was at that camp a week after the attack.

- On July 9th, 1996, a woman doing quality checks on a planting project, also near Mackenzie about 30km north of the Ospika camp on the Finlay, was mauled while working with her sister. Although her injuries were extensive and life-threatening, she survived.
- A support staff worker (Samantha, age 26) for a helicopter company was fatally attacked at the Staging site while doing logistical support work on a planting project in Swan Hills. This one hit especially close to home as we were working there at the time, and it was the helicopter that my crew was using that responded to the incident to help try to save her.
- In another incident on July 6th, 2023, a planter working near Tumbler Ridge was attacked by what was believed to be a defensive attack by a grizzly bear. She was seriously injured, but luckily, survived after being air-lifted to Prince George. This planter went to university in my hometown, and had worked for me the previous summer. Very scary.
- At least 26 other civilians are known to have been killed by black bears or grizzlies in BC and Alberta since 1990. Search for "List of fatal bear attacks in North America" on Wikipedia for more information.

Other Large Animals

Very few planters will ever see a cougar during their career, unless they perhaps work on the coast or down in the southern Interior. They like to hang out on cliffs, bluffs, and in steep, rocky areas. There are also cougars in northern Alberta, but sightings on blocks are extremely rare. If you see one, or signs of one, let your supervisor know. Fatalities from cougar attacks are extremely rare (the last one happened to a cross-country skier in Banff National Park in 2001), but attacks aren't uncommon. There were two non-fatal cougar attacks in BC in 2025, in Squamish and in Smithers.

Ungulates is the name for the group of animals that includes moose, elk, deer, and caribou. Moose are probably the most dangerous, and I've had planters who were chased by moose. Keep an eye out. You'll probably run into deer fairly often, but they're generally small enough that they run away immediately when they see you. Caribou and elk are bigger than deer, especially elk, but they're not very common on planting blocks.

Figure 8.40
Three Moose.

This early-morning photo shows not one but three moose that were hanging out with each other. Moose are typically fairly solitary animals, except when families are together.

Figure 8.41
Elk.

This elk has a nice rack. It's digging through the snow to get at the grass underneath.

Figure 8.42
Deer.

Despite their speed, deer are very cautious and are easily spooked.

Wolves are secretive and shy away from people. I've only seen a handful of wolves on the blocks. If you run into one, stand your ground and be calm, and don't turn away from it or try to run. Coyotes are much more common than wolves. They're much smaller than wolves (in Western Canada), maybe 15-20kg pounds each, but you should still be wary of them. They're unpredictable, and often hunt in packs. If you are cautious and knowledgeable, you shouldn't have any problems. Besides, if you were ever attacked, you have a shovel, and you can fight back.

Figure 8.43
Coyote.

Coyotes, which are much smaller than wolves (about the size of a mid-sized dog) are very mischievous, but they are often quite scared of humans when travelling alone. Despite this, there were a number of coyote attacks in the news in 2023.

Coyotes vary in size depending on what part of the country you're working in. They can grow to be quite large on the east coast. I've seen coyotes in New Brunswick and Nova Scotia that I initially mistook to be wolves (except that wolves are essentially extinct in Atlantic Canada). They appear to be a distinct species called the Eastern Coyote, or locally referred to as coywolves. These animals can

weigh 70-80 pounds or more, and are probably a lot more unpredictable and dangerous than wolves, especially in groups. There have been recent attacks on humans (Nova Scotia, 2023), and a 19-year old named Taylor Mitchell was killed by a group of coyotes in Cape Breton about a decade ago. Wild animals can be unpredictable and dangerous.

Sometimes you'll plant in areas where cattle are grazing. The cows are generally going to run away if you get too close, but the bull won't. If you run into a bull, and it looks like he wants to charge you, back away slowly.

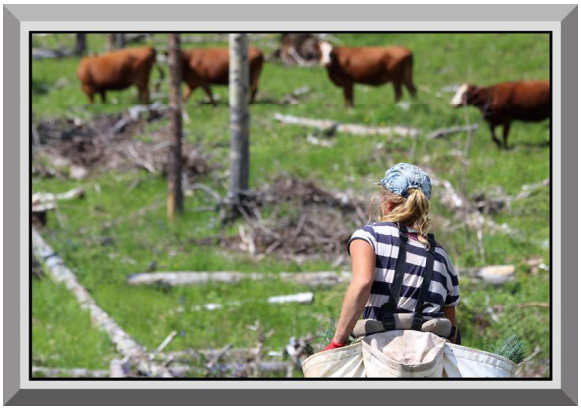


Figure 8.44
Cattle on a Block.

Ranchers sometimes have grazing leases that give them the right to let their cattle graze on blocks that we're planting.

Wild boars are a relatively recent problem, and are sometimes referred to as "super pigs." The prevalence of feral boars in the wild has been increasing slowly since the early 1990's, but that change may have escalated rapidly since the 2023 wildfire season in western Canada, when thousands of kilometers of range fences burned throughout the the prairie provinces, resulting in far more escapes of domestic stock. At the moment, boars are most commonly found in central BC (from south of Kamloops up to the Fort St John area) and more widely throughout Alberta, Saskatchewan, and Manitoba. On a societal level, these animals do an incredible amount of damage to crops, and can very easily spread diseases to humans due to our physiological similarities. In the scope of tree planting, large aggressive boars can pose a danger to individual tree planters. It is likely that this problem will continue to grow in the coming years, and the industry will start paying more attention.

There is an appendix at www.canadiantreeplanting.ca which goes into much more detail about many of the species of large animals that are found throughout Canada.

Insects

Wasps, hornets, and bees are prevalent, especially during warm weather in July and beyond. Some of the blocks that you plant on will have nests. Depending on the exact species, the nest could be hanging from a branch or underground. Either way, you might bump into it or unexpectedly open it with a shovel, and get a nasty surprise. Run away. Don't forget your shovel.

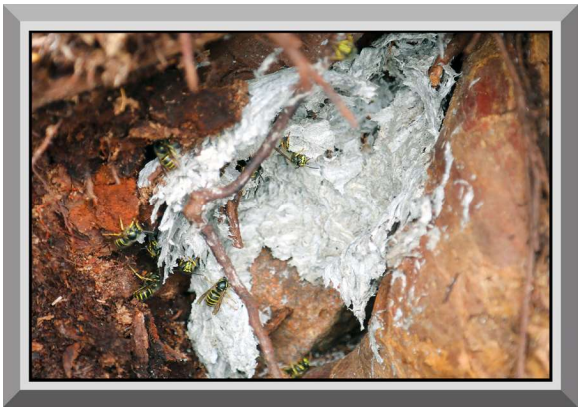


Figure 8.45
Underground Nest of Yellow Jackets.

This underground nest was broken open by a shovel a few minutes earlier.

With some species, a single sting is all you'll receive, and with other species, multiple stings are quite possible.

Figure 8.46
A Yellow Jacket.

Yellow jackets, and other types of hornets and wasps, are often quite docile and won't usually sting you unless you're threatening their home.

If you've been stung before, you'll probably know if you're allergic to the sting. An allergic reaction to a sting is called an anaphylactic reaction, because your body starts to go into what's known as anaphylactic shock. This is not good. In some cases, people have problems breathing, and need to be rushed to medical aid.

Even if you don't have a history of allergies to stings, it's possible to develop an allergy part-way through life, or you might be unaware that you're allergic to one of the several species that hasn't stung you yet. Some people react differently to stings from different species. So even if you think you're not allergic, don't rule allergies out entirely. You may eventually get a surprise when you're stung by a "new" species someday. Most planters, however, are able to carry on without serious reactions to stings.

No matter what, if you get stung, a wise first step is to take a couple of antihistamine tablets, to temper the allergic reaction. One of the biggest problems with anaphylactic shock is that a victim starts to panic if they're having problems breathing, which is a catch-22 situation that causes additional problems. If you're nervous after a sting, and you're waiting to see if you'll have a problem, my advice is to take a few antihistamines and sit in the shade for fifteen minutes or so. This way, you'll be less likely to have an accelerated pulse that speeds up the reaction. If you do this,

always notify someone first! You don't want to sit down and have a bad reaction in the shade while nobody notices that something is happening to you. Sitting in a truck is a better idea than sitting by yourself out in the middle of a block, if you have that option. Sitting still and being calm for a short period of time reduces the likelihood of a serious reaction.

Planters who know that they have severe allergies are wise to carry epi-pens. This device administers the user with a shot of adrenaline which temporarily blocks the allergic reaction for a short time, giving the victim time to get to antihistamines and/or medical aid. If you carry antihistamines in your planting bags for emergencies, make sure they're well wrapped in a couple layers of waterproof zip-lock baggies, so they aren't ruined when you need them.

Some types of bees and social wasps release pheromones when they sting, which helps others of that species to target their wrath. Perhaps this is why some wasps seem to chase a planter that has disturbed a nest, leading to multiple stings?

Quite often, when a planter hits a nest, the first sign of warning will be audible. When you hear the angry buzzing, look around quickly and be ready to run away. People who listen to music or podcasts while planting are more likely to be stung, because they don't hear the buzzing until it's too late.

Figure 8.47
An Epi-Pen.

An epi-pen is a great response mechanism for someone who is known to have a severe anaphylactic reaction to stings. However, since planters frequently work hours away from the nearest hospital, a single epi-pen is certainly not guaranteed to last long enough.

Black flies, gnats, no-see-ums, mosquitoes, and other small flying insects can drive a planter crazy. Not only are they a nuisance, but if they bite, they can cause discomfort and swelling, especially around the face and eyes. Although many people just use lots of mosquito repellants, some planters are leery of applying DEET and other chemicals to their skin. If you're concerned, your best option is to wear long sleeves and pants. Tuck your shirt into your pants, and your pants into your socks. I've never seen a planter wear a bug net/hat for more than a single day in western Canada, so I can only assume that they're not practical. BC is generally a lot better for black flies and mosquitoes than most other provinces, although they can get to be bad in the northern part of the province, up north of Prince George. The worst bugs are encountered in the very northern parts of Alberta and BC (within a few hundred kilometers of Nunavut and the Yukon), and throughout northern Ontario.

Figure 8.48
Planter Wearing a Bug Hat.

It may be that wearing a bug hat makes sense in some areas. I've been told that, in general, the bugs are "one billion times worse" in northern Ontario than in BC.

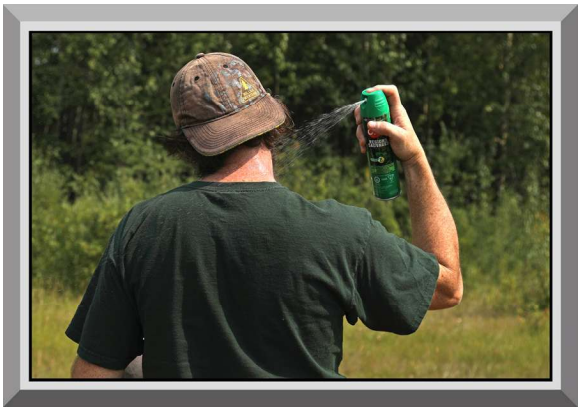


Figure 8.49
Applying Insect Repellant.

Here, a planter sprays the back of his neck with Deep Woods Off, which is a repellant with DEET as an active ingredient.
Photo Credit: Sean Heakes.

There is an appendix at the end of the book that talks about a few species of insects in more detail.

Ticks and Lyme Disease

Ticks are common in areas with heavy brush, long grass, and areas used by herd animals, like deer and cattle. They latch onto passing animals or planters, crawl upward to a warm and hair-covered area, then dig in and feed on your blood. Ticks can carry a few harmful diseases, such as Lyme disease. Avoid tick bites by wearing clothing that covers your skin. If you're working in a grassy area that might have ticks, check yourself carefully at the end of each day. I've rarely encountered widespread problems with ticks in northern BC, but it is common to work in problematic areas further south. If you discover a tick, go see your first aid attendant for assistance.

The Canadian Lyme Disease Foundation is a group that is trying to educate workers and the public about the risks associated with ticks and Lyme (an infectious disease), so they can safely work in or explore the outdoors with a better level of awareness. Ticks are garnering increased attention in forestry every passing year, as scientists learn more about the implications of Lyme disease. This is probably good, because climate change will probably expand the prevalence of ticks to a more northern distribution.

Lyme is caused by a bacteria, and is transmitted to a person when they are bitten by an infected tick. Early diagnosis and treatment are crucial because Lyme disease can lead to serious complications if left untreated. Ten years ago there were a couple hundred diagnosed cases of Lyme in Canada each year. That number has jumped to 6400+ cases per year as of 2025. Lyme has become the fastest-growing vector-borne disease on the continent.

In Canada, the ones to watch for are the Blacklegged tick (Manitoba, Ontario, Quebec, Atlantic Canada) and Western Blacklegged tick (west coast). The blacklegged tick is usually called a deer tick, and it's one of the smaller ticks. The blacklegged tick species are the ones that carry Lyme. Dog ticks, which are much larger than deer ticks, don't carry Lyme.

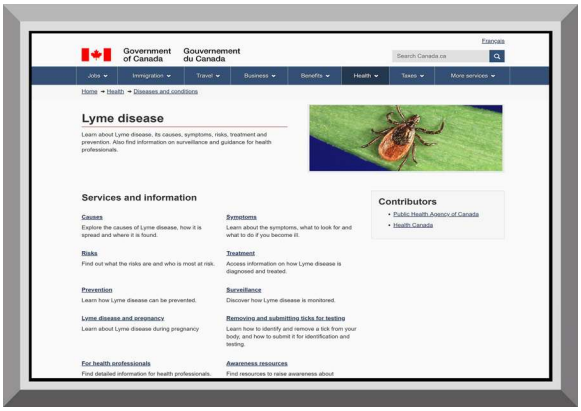


Figure 8.50
Tick and Lyme Disease Information.

Lyme disease is a disease which attacks the nervous system. Many people don't realize that they have it for decades or more.
Source: Government of Canada.

There is also a rather disturbing rare disease caused by the Lone Star tick. Thanks to climate change, we may see it in Canada in the near future. It's called an Alpha-gal allergy. People who are infected by a Lone Star tick bite can sometimes develop this severe allergy to red meat. The allergy doesn't just make you never want to eat another steak or hamburger – it also makes you quite sick if you inadvertently ingest products that use proteins from red meat. To be honest, it's scary.

There are no pills (yet) that you can take to prevent Lyme. However, there is a pill available which can significantly reduce the risk of developing Lyme, if you've discovered an attached tick and it's a risk species (deer tick). A medical practitioner can assist with this, but you'll need to save the body of the tick. If you discover a tick quickly (in less than 12 hours), the risk of contracting Lyme is much lower than if a tick has been attached for at least 24-36 hours. Do a tick check every evening.

Lyme disease risks are increasing each year. Climate warming is resulting in tick ranges moving northward at a rapid pace, in all parts of Canada. If you'll pardon the pun, I think this is literally a ticking time-bomb. Outdoor-loving Canadians are going to see much higher Lyme infection rates in the near future.

Every planter should learn about the risks of ticks and Lyme, and what protocols to follow when working in areas where ticks are being encountered. You can find some links and resources about Lyme disease (and alpha-gal allergies) at this link: www.replant.ca/ticks

Miscellaneous

You may end up working with helicopters at some point. Every single pilot will give you a detailed safety briefing before you use the machine, and if you switch pilots or helicopters, you'll have to go through another. Pay attention, especially if you've been using helicopters for less than three or four seasons. Every helicopter is slightly different, and every pilot has some variations on their exact preferences around their machine.

Here are some useful safety points for working around helicopters, although you'll definitely need a much more detailed safety briefing when that time comes:

- Wear your seatbelt. It's probably a full harness, not a lap belt, and some of them fasten quite differently than car and truck seatbelts. Helicopters can crash too. I've had tree-planter friends that were in helicopter crashes (no fatalities, thankfully).
- Don't smoke around a helicopter. Jet fuel is fairly flammable.
- Never go uphill when walking away from a helicopter. Even an extra foot of height could be enough to put your head into the spinning rotor blades. Many pilots will prefer for you to crouch beside the machine, with everyone remaining in eyesight of the pilot, before they take off again.
- Watch out for loose plastic. It's amazing that a little piece of plastic bundle wrapper or flagging tape can get sucked up into the rotors and force a shutdown and inspection. If either of those items got sucked into an engine, the situation would be even worse, and very expensive.
- Secure all tarps, pieces of clothing, and anything else that weighs less than about a hundred pounds if it's near a potential landing zone.
- Don't use flagging tape within about a hundred feet of a landing zone. Or if you really have to flag near a landing zone, tie it to branches instead of throwing it loosely onto the ground.

This book now has a full chapter about working around helicopters, Chapter 26 in the General Knowledge section.

Figure 8.51
Working With Helicopters.

This group of planters remains crouched as a helicopter departs, after it dropped them off at the Staging area at the end of the day.

Hydrogen sulfide is a poisonous gas that is commonly found around planting sites in Alberta, but you can also find it less frequently in parts of BC, especially northeastern BC. It's also referred to by its chemical formula, H2S. It's highly poisonous, and kills a few people each year in the oil & gas

industry. It smells like rotten eggs, but in high concentrations, it kills your sense of smell, so you might think that it's gone away. Methane, a naturally occurring swamp gas, also smells like rotten eggs, but doesn't kill you. I've never heard of H2S being a problem for planters as a naturally occurring substance from a ground seep. Typically, it's much more of a risk in enclosed spaces, and it's only something to be aware of when you're working on blocks beside oil & gas processing infrastructure. If that's the case, you'll get an extensive safety briefing. If you smell that rotten egg smell and you're not working near oil and gas infrastructure, chances are high that it is just methane bubbling up from swampy ground. Regardless, it's best to be cautious in case there is an actual safety hazard. If someone goes down due to H2S, any rescuers will probably also be killed, so if you see someone drop and you think it's due to H2S, get out of there. There have been cases in the oil patch of workers without oxygen equipment entering contaminated facilities to rescue co-workers, which just ended up as a pile of dead workers.

Figure 8.52
H_2S Gas Warning Sign.

Hydrogen sulfide is extremely dangerous. A concentrated leak can kill a person quite quickly. You'll be briefed about the dangers of H_2S if you're working around oil & gas infrastructure that processes it.

If you're using axes or hatchets around camp, make sure the heads are attached properly to the handles. You don't want to be swinging one of those and have the head go flying off and injure someone. Also, make sure the shaft is in good shape and isn't cracking.

Figure 8.53
Inspect Your Axe Handle Before Using It.

An axe can be quite dangerous if used incorrectly, and even more so if the head flies off the shaft.

In every camp, and on every block, there should be designated Mustering Points. A mustering point is the location where everyone gathers if there's an emergency signal. For an emergency signal, you can pick something that creates as much noise as possible, such as repeated safety whistles blowing, or repeated truck horns. When you hear the emergency signal, everyone should immediately stop working and meet at the mustering point, to react to the emergency. It could be a bear on the block, a

planter who has collapsed from heat stroke, a fire discovered on a nearby block, or any of dozens of other problems. During an emergency, it's good to have a lot of helping hands, in case someone needs to be evacuated from the block on a stretcher.

In some areas, workers are required to do a complete stand-down (stop work and wait for further instructions) whenever there is an incident or accident. You may think that this is pointless if the incident didn't happen to you or your immediate co-workers. However, a stand-down protocol can be very helpful. This way, there's a much lower risk of a second incident at the same time as the first, which could draw away resources or create a triage situation. If there's a stand-down in an active logging network, everyone on all logging roads in the area will be required to pull over and clear to the side, and maintain radio silence until the situation is resolved or further instructions are provided.

Roll Call is another good practice. In an emergency situation, when everyone has met at the mustering point, there needs to be a way to quickly check to ensure that nobody is still out on the block. All crews must also do a roll call at the end of the day before driving home for dinner, to make sure that nobody gets left behind. Planters have occasionally been forced to spend a night on the block when roll call was forgotten. That can be extremely dangerous (and emotionally debilitating).

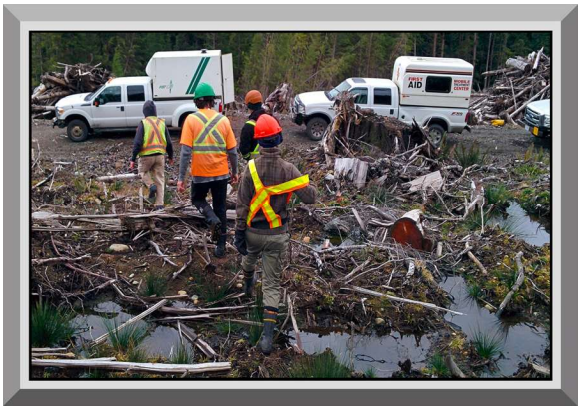


Figure 8.54
Getting Pulled Off the Block.

If there's an emergency and everyone needs to meet at the trucks, someone should do a head count or roll call, to ensure that the entire crew is there and nobody is still working on the block.

The dashboard of a truck can become extremely hot on a sunny day, especially if the windows are closed. Laptops and other electronic devices (especially tablets and cell phones) are especially susceptible to problems when this happens. A lot of these devices are not meant to be operated in external temperatures over 40° C, but the dashboard of a truck sitting in the sun can climb to over 80° C. Overheated devices can end up shutting down, experiencing memory corruption or data loss, or even catch fire in some cases. At the very least, store your devices in the door or under the season, rather than in direct sunlight. Electronic devices sitting on the dash of trucks have caught fire or exploded. The safety ceiling for a cell phone is usually around 60° C, and thermal runaway typically is a risk around 60° C, so you can see why a phone sitting on a hot dash is a huge risk.

It's amazing how many preventable injuries happen on nights off. Usually, alcohol is a catalyst. Drink in moderation. Don't think it's cool to jump through a bonfire, or go sprinting around camp in

the dark. Keep an eye out for the safety of co-workers, especially those who are vulnerable or who have consumed more alcohol than is appropriate.

Four Pillars of Safety

Some companies refer to the Four Pillars of Safety: Education, engagement, engineering, and enforcement. Let's look at why each of these is important.

Education – In order to understand how to avoid a hazard, a worker must understand that the hazard exists, and understand why it is a hazard. If you were a herbicide sprayer, you might not think protective clothing is necessary until you are educated about the potential health effects of chemicals in the spray that you are handling.

Engagement – Discussing hazards and safety is a proactive means of preventing problems from happening in the first place. As in many other areas, communication is very important. Perhaps a log truck driver is at a safety meeting and mentions that a sharp corner at km49 is a problem, because it's not possible to see oncoming traffic. After the group discusses the issue, the supervisor may bring in mulching equipment to clear away some brush.

Engineering – Often, the risk associated with known hazards can be mitigated by finding engineered solutions. For example, if a muffler is thought to pose a risk of starting a fire, a spark arrester could be added, and a protective sheath installed so flammable materials cannot come into contact with the hot surface.

Enforcement – Sometimes, when all else fails (the proverbial carrot), the only remaining method for ensuring compliance is through enforcement (the stick). If log truck drivers are found to be driving without seat belts, they probably won't be beaten with a stick, but their company may fine them, or suspend them from duty temporarily.

First Aid Drills & Emergency Response Simulations

Every crew should do an emergency response simulation, or practice drill, at the very start of the season. This is a great way to familiarize workers with what should happen if an emergency occurs, and helps to identify potential deficiencies. We had a safety drill in my camp one year and discovered that the spine board and basket stretcher were too long, and because of this, the doors of the ETV wouldn't close when there was a patient inside. It is obviously preferable to learn about a problem like this and fix it *before* an incident occurs.

Here are some tips when organizing a drill:

- Schedule the drill for a time when workers are awake, not at the end of the day when everyone is tired and disinterested. Let the crew know that a drill is about to be conducted, and that their undivided attention is important.
- Plan out the scenario in advance, so the drill doesn't get bogged down with uncertainty about what's happening. However, be prepared to interrupt the drill repeatedly in order to communicate relevant info to participants and watchers. Try to plan a drill scenario that relates to a typical high-risk activity for your workers.
- Throw in unexpected obstacles, to challenge participants and make them think. A drill should not go smoothly.
- Break the typical myth of "unlimited helpers" and figure out how to react with very limited personnel.
- Make sure you actually call all of the emergency response numbers (except 911) to verify that they are correct.
- Don't let participants feel that they are being judged, or that they can be perceived as "failing" any parts of the drill. Focus on learning outcomes and improving response success.
- Remember that the so-called "Golden Hour" is a pipe dream when there's an accident on a remote bush worksite. How do you deal with that challenge?
- Talk about the effects of extreme weather. How would the response effort have been different if the drill happened during a snowstorm or lightning storm?
- Make sure that the newest workers are involved. Everyone should get in close, so they can see what's happening.
- Management should do a performance analysis immediately after the drill is complete, to note what was done well and what need improvement.
- Have a short "debriefing" meeting with the crew the following day, to talk about what was learned, and to clarify any emergency response procedures that were unclear.
- Make sure that everyone understands all communications protocols, in case an incident happens and a solitary worker is required to call for help without anyone else around to rely upon. Talk about options for getting outside assistance during an emergency.
- Talk about what needs to be done if a person goes missing, or is stranded on a block overnight. How do we prevent these scenarios?

Reporting

A "good catch" is a term used in safety reporting when a potential hazard is reported before it causes a safety incident. Some companies now classify all near-misses (actual safety incidents) as good catches, in an attempt to paint reporting in a more positive light. I agree with the sentiment that reporting should be encouraged, however, one must be careful not to describe an actual "incident" as a "good catch."

An "incident" can probably be defined as any sort of upset condition that interrupts a work-related task or activity, including property damage, an injury, workplace illness, or a fatality.

There are certain times (in BC) when WorkSafeBC needs to be notified after an incident. In those cases, the employer needs to file an "employer incident investigation report," or EIIR. The EIRR is WorkSafeBC form 52E40, which is a specific report that employers are required to fill out and submit after certain types of incidents or near misses. Categories of incidents where this report becomes mandatory include serious injuries, potential for serious injury, incidents requiring medical treatment, major structural failure or collapse, and major release of hazardous substances. The medical treatment category means that this form is required more frequently than some supervisors, crew leaders & first aiders assume. Other provinces have similar requirements.

Industry-Certified Training Courses

There are a number of industry-certified training courses available from various training institutions. Most of these are not cheap, although in some cases, your company will pay for them. These courses are more frequently taken by experienced workers or management personnel than by first-year planters. Here's a short list of some of the common courses that are offered in BC (other provinces usually have similar options):

- **Transportation of Dangerous Goods (TDG)**: This course is targeted at drivers, and educates them about policies that need to be followed when someone is transporting dangerous goods in large quantities (ie. tanks of gasoline or diesel or jet fuel, large numbers of propane canisters).
- **S-100 Fire Suppression**: This is the basic entry-level course for people who might become involved in fighting wildfires. It teaches participants about things like fire behavior, and basic equipment operation and management. There are additional higher-level courses in this series (such as the S-185). Suppression training (for fire-fighting) is not the same as wildfire awareness training (for safety and response protocols).
- **BCTS EMS**: This is a course designed to familiarize participants with the EMS system that is used throughout the province by the BC Timber Sales organization.
- **Basic First Aid**: This is the standard entry-level occupational first aid course. This is usually a one-day course or, if you also take the recommended Transportation Endorsement component, a full weekend. Until major WorkSafeBC first aid updates were implemented in late 2024, a course that was similar to this used to be called the OFA1 course. This course isn't considered to be acceptable/useful in a remote forestry setting.
- **Intermediate First Aid:** This is a two-day course (plus an optional third day for a Transportation Endorsement). Tree planting companies in BC and Alberta are roughly required to have approximately one Intermediate First Aider for every five employees on tree planting projects (there are very specific guidelines to identify exactly how many are needed).
- **Advanced First Aid**: This is a very intensive first aid program that involves two weeks of instruction. This course is designed for first aid attendants who must work in very difficult conditions, such as treating victims of life-threatening accidents at remote forestry, mining, and oil & gas worksites. Thanks to WorkSafe BC regulations pertaining to first aid, obtaining your Advanced First Aid certification is almost a guaranteed way of getting your foot in the door at just

about any company you want to work for. Many planting companies are required to have several first aiders in each camp who have this certification. Until major WorkSafeBC first aid updates were implemented in late 2024, a course that was similar to this used to be called the OFA3 course.

- Many more courses have self-explanatory names, such as **H2S Alive, Safe Bush Driving, ATV Safety**, and **Chainsaw Safety**.

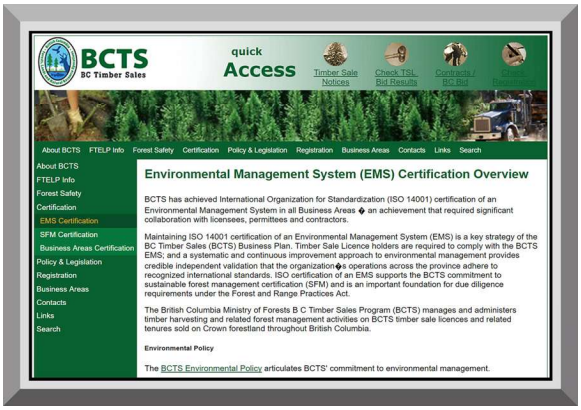


Figure 8.55
Online EMS Training in BC.

BC Timber Sales offers an online training course for people who want to learn more about Environmental Management Systems. Source: BC Timber Sales.

Some companies are willing to pay for the cost of a lot of these courses for certain employees. In some cases, their training time is also paid for (or at least a Living Out Allowance to cover some of their expenses), but in other cases, course time is not paid. Some people argue that time spent in courses should be compensated, because the employee is mandated to take a course. Other people argue that since the employee is conferred a training benefit, that is the compensation. Although the treatment of this issue varies from province to province, British Columbia has provided clarity on the subject: In BC, if an employer pays for a course offered to a worker, and a provincially regulated certificate is issued by a third-party training facility (Basic/Intermediate/Advanced First Aid, H_2S, S-100, TDG, etc.), then the employer is not obligated to compensate the worker for their training time. However, the employee "owns" the certificate (even if the employer paid for the course) and should be given a copy, as that person can continue to use the certificate even after the period of employment is over.

For more photo and video resources associated with this chapter of the book, as well as links to curriculum pages for a number of the industry-certified training courses mentioned here, visit: www.replant.ca/training/safety