

Name _____

**Wise people foresee trouble coming and avoid it,
but foolish people keep going and suffer. —Proverbs 22:3**

Handbook of Basic Wilderness Skills

—from an end-time Christian perspective

by Jim Buller



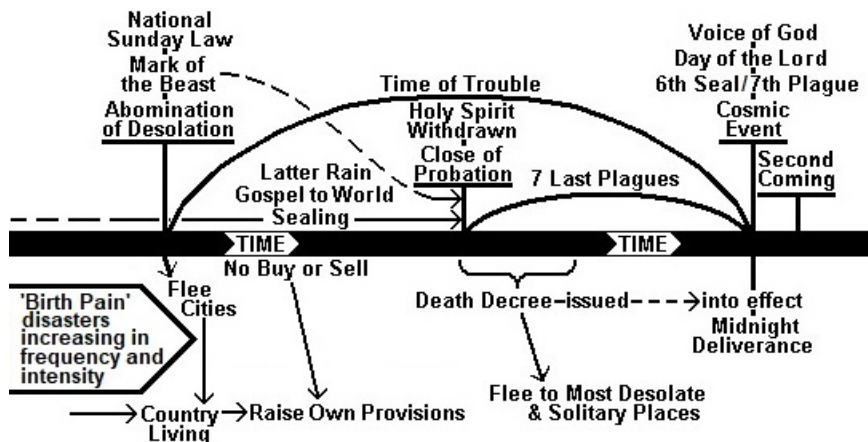
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THE END-TIME CHRISTIAN PERSPECTIVE

THE END-TIME TIME-LINE



- The end-time 'Birth Pain' disasters, (see Matthew 24:6-8), will continue to increase in frequency and intensity until Jesus comes.
- A National Sunday Law marks the beginning of the Great Time of Trouble, (see Matthew 24:15-16, 21, Daniel 12:1, Luke 21:20-21, *Testimonies for the Church Vol. 5*, pages 464-465), and in response God's people will flee from the cities to live in the country,.
- During this first part of the Time of Trouble, God's people will raise their own provisions because they will not be able to buy or sell, (see *Early Writings* pages 85-86, Revelation 13:16-17, *Country Living* pages 9-10).
- After the Close of Probation, the 7 Last Plagues will begin to be poured out, (see Revelation 15:8).
- The 'Death Decree' will be issued in connection with the 3rd Plague, (see *Early Writings* page 36-37, *Great Controversy*, pages 627-628).
- In response, God's people will flee from their country homes to the wilderness where they will live until Jesus comes, (see *Great Controversy*, pages 626).

THE END-TIME PERSPECTIVE

There are some significant differences between the typical view of wilderness survival and an end-time Christian perspective. In the verses that follow, note that during the final part of the Time of Trouble, God's people will flee into the deepest wilderness they can get to, (and not be returning to 'civilization' to resupply), that God has places prepared there where He will provide for them, and that they will be in groups. Also that the only way to get to these kind of places would be on foot.

- “Therefore when you see the ‘abomination of desolation,’ spoken of by Daniel the prophet, standing in the holy place” (whoever reads, let him understand), “then let those who are in Judea flee to the mountains.” (Matthew 24:15-16.)
- “He was granted power to give breath to the image of the beast, that the image of the beast should both speak and cause as many as would not worship the image of the beast to be killed.” (Revelation 13:15.)
- “As the decree issued by the various rulers of Christendom against commandment keepers shall withdraw the protection of government and abandon them to those who desire their destruction, the people of God will flee from the cities and villages and associate together in companies, dwelling in the most desolate and solitary places. Many will find refuge in the strongholds of the mountains.” (*Great Controversy*, page 626.)
- “Then the woman fled into the wilderness, where she has a place prepared by God, that they should feed her there ...” (Revelation 12:6.)
- ‘During the night a very impressive scene passed before me. There seemed to be great confusion and the conflict of armies. A messenger from the Lord stood before me, and said, “Call your household. I will lead you; follow me.” He led me down a dark passage, through a forest, then through the clefts of mountains, and said, “Here you are safe.” There were others who had been led to this retreat. The heavenly messenger said. “The time of trouble has come as a thief in the night, as the Lord warned you it would come.”’ (*Maranatha*, page 270.)
- “He has made the strength of the everlasting hills to be a safe retreat for His people. He has prepared the mountains and the caves for His oppressed and persecuted children.” (*The Upward Look*, page 327.)

In the next set of verses, note that this ‘Death Decree’ will be similar to what happened in Esther’s time. The length of time between when that decree was issued and when it went into effect was eleven months. But remember that Jesus said those days would be shortened. So God’s people will be living in the wilderness for an indefinite length of time, probably at least several months, until Jesus comes.

- “The decree which is to go forth against the people of God will be very similar to that issued by Ahasuerus against the Jews in the time of Esther.” (*Testimonies for the Church Vol. 5*, page 450.)
- “In the first month, which is the month of Nisan, in the twelfth year of King Ahasuerus, they cast Pur (that is, the lot), before Haman to

determine the day and the month, until it fell on the twelfth month, which is the month of Adar.” (Esther 3:7.)

- “And unless those days were shortened, no flesh would be saved; but for the elect’s sake those days will be shortened.” (Matthew 24:22.)
- “This time, which the angel [in Revelation 10] declares with a solemn oath, is not the end of this world’s history, neither of probationary time, but of prophetic time, which should precede the advent of our Lord. That is, the people will not have another message upon definite time. After this period of time, reaching from 1842 to 1844, there can be no definite tracing of the prophetic time. The longest reckoning reaches to the autumn of 1844.” (S.D.A. *Bible Commentary Vol. 7*, page 971.)

In the following verse, notice that Jesus did *not* say, “Drop everything and run!” He just said not to go back to get anything. This is a significant difference!

- “Whoever is on the housetop must not go down to get things out of his house. And whoever is in the field must not turn back to get his cloak.” (Matthew 24:17-18.)

So, it *would* be OK to take survival equipment with us when we flee —as long as we either have these things already with us, or we can easily pick them up on our way out.



Note also that ‘Being Ready’ is a theme throughout Matthew chapters 24 and 25.

- “Therefore you also be ready, for the Son of Man is coming at an hour you do not expect.” (Matthew 24:44 —see also Matthew 25:10.)

Let’s put all this together with the ‘birth pains’ imagery in Matthew 24:6-8. What do pregnant women do in order to “be ready?” —They have their bag all packed and ready to go, *and* they keep it by the front door so it can easily be grabbed it on their way out. Consider also how the Israelites were to eat the Passover —with their shoes on their feet, all packed and ready to go, just waiting for the signal to leave, (see Exodus 12:11). If we would imitate this same levels of readiness, there shouldn’t be any reason why we would have to flee without taking anything.

But keep in mind that “flee” means ‘move fast’ and ‘travel light.’ So rather than trying to take enough provisions to last until Jesus comes, we should just take basic essential equipment which would enable us to process what God provides in nature. This means we are going to need to know how to identify, gather, prepare, and craft these things. Also keep in mind the following.

• “The promises of God are not for us rashly to claim while we rush on recklessly into danger, violating the laws of nature and disregarding prudence and the judgment with which God has endowed us. This is the most flagrant presumption.” (*Testimonies to the Church Vol. 4*, page 44-45.)

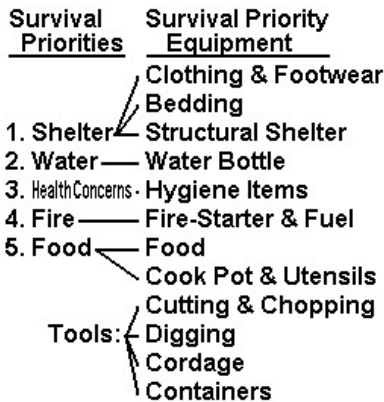
Would fleeing into the wilderness unprepared and unequipped be rushing “recklessly into danger, violating the laws of nature and disregarding prudence and the judgment with which God has endowed us?” —Yes. Then let’s not claim God’s promises without doing our part to prepare and equip ourselves.

• “Behold, I am coming as a thief. Blessed is he who watches, and keeps his garments, lest he walk naked and they see his shame.” (Revelation 16:15.)

Therefore, from an end-time Christian perspective, learning wilderness survival is *not* just an interesting activity, or something ‘fun’ to do. Neither is it merely something that might be good to know *just in case* we get stuck in the woods someday —because if we stay true to God, we *are going to be doing it*, soon!

Section 2

SURVIVAL PRIORITIES and SURVIVAL PRIORITY EQUIPMENT



The ‘**Survival Priorities**’ are the things we need in order to stay alive. They are listed in order of importance. **Shelter** is first, because within hours, we will need ‘shelter’ from something. **Water** is second, because

we could make it into the next day without water. **Food** is last because we could go a couple of weeks without food. **Health Concerns**, are things like safety, sanitation and hygiene. Many Health Concerns are 'practices,' such as safety, and having good hygiene habits, but there are several hygiene items we need like: soap, a toothbrush, a hair brush, toilet paper, etc. Health Concerns is in the middle as an 'umbrella' over all the others because you *always* want to stay safe and healthy. **Fire** is also in the middle as it may be needed it in connection with each of the other Priorities. Also keep in mind that in certain situations, any one of these Priorities could become the most important.

'**Survival Priority Equipment**' are the equipment item categories that we need in order to provide ourselves with the 'Survival Priorities.' Although '**Tools**' are not 'Priorities,' they help us get the Priorities much more easily and efficiently. It is also worth noting that we have each of these items connected with our homes, because our homes are our survival system, and these are the things we need to survive. Now, in a short-term situation we may be able to get by with out several of these items, but in any long-term situation, we will need all of them.

'Studying wilderness survival teaches us:
How few items are actually essential,
And how essential those few items actually are.'

Suppose in a survival situation we had to carve a fire-drill set to make fire. Would we bring the set with us when we moved camp? —Of course! Why? —Because we *will* need to make fire again, and we might not have time to make another set, or be able to find the right materials at our new camp. **So, why not bring essential items with us in the first place?**

It is also worth noting here that some items from civilization are simply superior to what we could make from nature. For example: a steel knife would work better than breaking a rock and using the sharp edge to cut things. In a survival situation, these items would become our '**most valuable possessions**.' They are primarily items that are made of metal, cloth, and plastic. We should **be sure to have these items in our survival kits**. Other things we need, such as: water, some hygiene items, firewood, and food, **get used up** as we use them. We should **be sure to learn how to replenish these things from nature**.

ONE WAY OR THE OTHER, WE HAVE TO 'DO THE WORK.'

Since we *will* need all of the Survival Priorities, either we will have to 'work' to carry in what we need, or we will have to 'work' to gather and make these things once we get to our camp. Some things, like a knife, a cook pot and bedding, are is easier to carry in. Other things, like shelter poles, water, and firewood, are easier to gather from nature.

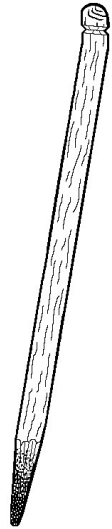
Now, it *is* possible to get everything we need from nature, but it takes time to find, gather, and make these things —time that we may not have, especially at the beginning of a situation. So we'd be wise to bring essential things with us. The Apache, (a Native American tribe that lived in the Arizona-New Mexico area), were masters of desert survival. Yet even when they were attacked and fleeing for their lives, they still took survival equipment with them for these same reasons.

Also keep in mind, that 'flee' means to 'move fast' and 'travel light,' possibly from angry mobs, (see *Early Writings*, page 56-57). So no heavy packs, full of enough provisions to last until Jesus comes. Our packs, therefore, should be more of a 'tool kit,' containing the key equipment for processing what God has provided in nature, rather than it being a 'stock of provisions.' This also means we need to learn some skills.

CARETAKER ATTITUDE

Now, we *can* cause a lot of damage to nature while surviving and practicing survival. So remember the job God gave Adam and Eve in the beginning —to take care of the garden, (see Genesis 2:15). And by extension, we, as their children, have the same job. Unfortunately, for the most part the human race has not followed God's plan, and we've pretty much trashed the planet. But God still cares about His creation! As part of a declaration that will be made in heaven just before Jesus comes, it states that, the "time" has come to "destroy those who destroy the earth." (See Revelation 11:16-18.)

So it is important that we have a 'caretaker attitude,' and think about how our activities will impact nature. By doing so, it *is* possible to get everything we need and still leave nature better off than we found it. For example, if we need to make a 'digging stick,' rather than cutting that 'perfectly' shaped little sapling growing off by itself, look for a branch that has already been damaged, or that is growing in a place that needs to be pruned or thinned to get the stick we need.



Section 3

SHELTER

SIMULATED UNPLANNED OVERNIGHT ACTIVITY

The emphasis of this booklet is on planning and preparing for a long-term stay in the wilderness during the final end-times. Although this particular activity has an 'unplanned,' short-term focus, it is included here because it illustrates the result of a lack of planning and a lack of equipment. It also shares many useful principles for wilderness shelters.

Walk back into the woods a short ways, sit down in a circle, and work through the following with the group.

There have been three different groups within about a 60 mile radius who have gone on a simple Sabbath afternoon hike, but ended up spending the night. One group took the wrong trail. The other two groups had hiked into rugged areas, and when it got late on them they wisely decided to spend the night and hike out in the morning rather than risk getting lost or injured in the dark. If it has happened this many times, in this small an area, it has probably also happened in other places. *And more importantly, it can happen again.*

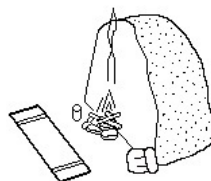
So let's suppose this has happened to us, here, now, and we will be spending the night with just what we have with us. There probably won't be much daylight left, so we'll need to work fast and efficiently.

Let's begin by taking inventory. As a group, what do we have that would be helpful? [Typically: 1 to 2 thirds of the people will have water bottles, a few people may have some extra clothing, maybe 1 or 2 might have a pocket knife, and maybe someone might have a lighter. For the remainder of this activity we will assume someone has a fire-starter, as all three of the above groups *were* able to make a fire.]

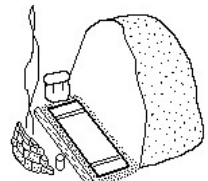
Where would we want to make our 'camp?' —probably in a 'sheltered' spot with some relatively level ground, and preferably near water.

After we choose our spot, we could make a fire. But before we do, let's talk about how we could 'maximize the efficiency' of our fire. Having a large 'bonfire' isn't necessarily the answer. A lot of extra energy will be needed gathering firewood. And, big fires create a large updraft, which will pull in a lot of cold air. This has lead to the saying: 'White Man builds a big fire, stands way back, he is hot on one side and cold on the other. Indian builds a small fire, gets up close, and is warm all over.'

The graphic here illustrates another important principle. Any type of 'enclosure' around the fire it will create a 'bubble' of warm air. So experienced woodsmen try to make their camp in some type of enclosure.



**inexperienced
northwoodsman**



**experienced
northwoodsman**

Throughout history, many groups have also used whatever they had available to built a chest-high 'wall' about 12-15 ft / 4-5 m diameter around their camps to create this 'bubble' of warmth. They make a fire in the center, and sleep around the inside of the 'wall.' This type of shelter is usually fairly quick and easy for a group to build, and they work well —if not expecting rain.

So what do we have in this area that we could build a 'wall' with?

Now also keep in mind that we loose more of our body heat to the cold ground than to the cold air. Therefore we would also want some type of insulation between us and the ground. So we need to make a 'debris bed'

of leaves, pine needles, dried grass, ferns, or moss, whatever is available that will provide insulation between our bodies and the ground.

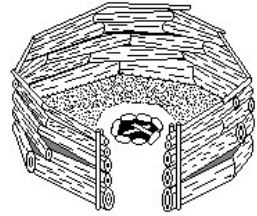
What is in this area that we could use to make a 'debris bed'?

We also want to gather enough firewood to last through the night. This would be a pile at least 3 ft / 1 m tall by 4 or 5 ft / 1.5 m across.

Let's divide up the 'tasks' that need to be done.

Anyone who finishes their task, should help the others, so we can all 'move in' together.

About half of the group will build the 'wall,' level the area inside the shelter if necessary, make the fire-pit, gather firewood, and prepare tinder and kindling to start the fire. Since heat rises, any fire will carry a certain amount of air up with it, and this air will be replaced by cold air from outside the shelter, which will try to come in through gaps in the wall. So make the wall as airtight as possible, and plug any gaps with debris. Unless the fire is needed for light, it is best to wait until last to light it, so it doesn't get in the way of building the wall, or risk catching the debris on fire as it is brought in.



The other half of the group will gather 'debris' for bedding. It is unlikely that too much debris will be gathered! So be serious about gathering it! Any 'extra' people should be 'debris gatherers.' To keep the debris that's being brought in from getting in the way of the 'wall builders,' pile it just outside the shelter, and bring it in before starting the fire.

Once everyone has 'moved in,' we'll do some math to divide up the night and assign "Fire Watches" —each person being responsible for a certain length of time to keep the fire going, watch for sparks, etc. so everyone can stay warm and safe throughout the night.

Does everyone understand how all would work? Then let's divide up the group, and make a model of what we just talked about.

Activity Debrief Questions:

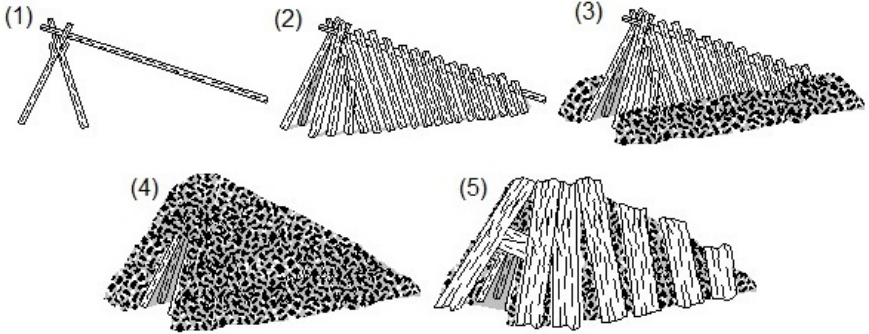
- How do you feel about spending the night this way?
- How could we purify more drinking water?
- What 'Health Concerns' would we have, and how could we meet them?
- What could we eat?
- What else would we need to get through the night?
- What could we do if it was going to rain?
- What are we willing to carry on a simple afternoon hike, so we would have it with us if we *did* end up spending the night?

CHOOSING A CAMPSITE

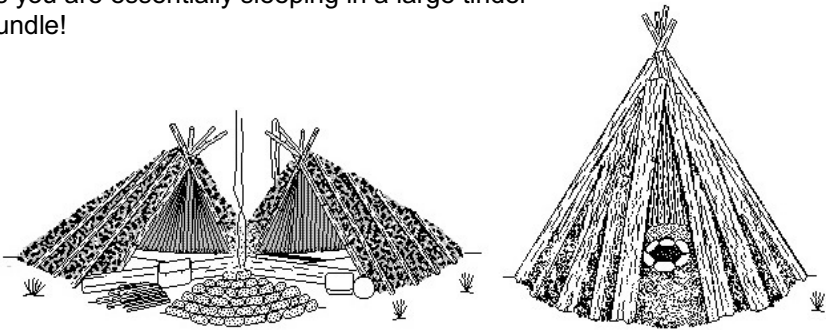
If at all possible, choose a campsite that has: a relatively level area to set up a shelter(s), a nearby source of water, available firewood, good ventilation, and other resources close by such as debris for bedding and shelter poles.

SHELTERS FROM NATURAL MATERIALS

• **'Debris Huts'** can be made entirely from natural materials. Start with a tripod frame, or lean a 'ridge pole' against a tree. Add 'ribbing,' then a debris layer, then some sticks or bark to keep the debris in place, and finally stuff the inside with debris. If the debris layer is thick enough, it can be warm well below freezing even without a fire.



• **'Wicki-ups'** are larger group shelters using the same construction method as Debris Huts. They can be fairly weather-proof, and when used in connection with a fire, are quite warm and cozy. But be careful with fire as you are essentially sleeping in a large tinder bundle!



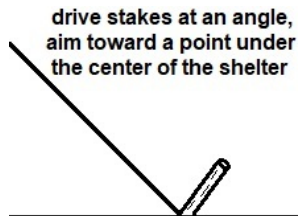
• **'Debris Bed'** More body heat will be lost to the cold ground than the cold air. Insulation from the cold ground can be provided by a 8-12 in / 20-30 cm thick 'debris bed' of: pine needles, leaves, dried grass, ferns, moss, etc. Use whatever is available.

TARP SHELTERS

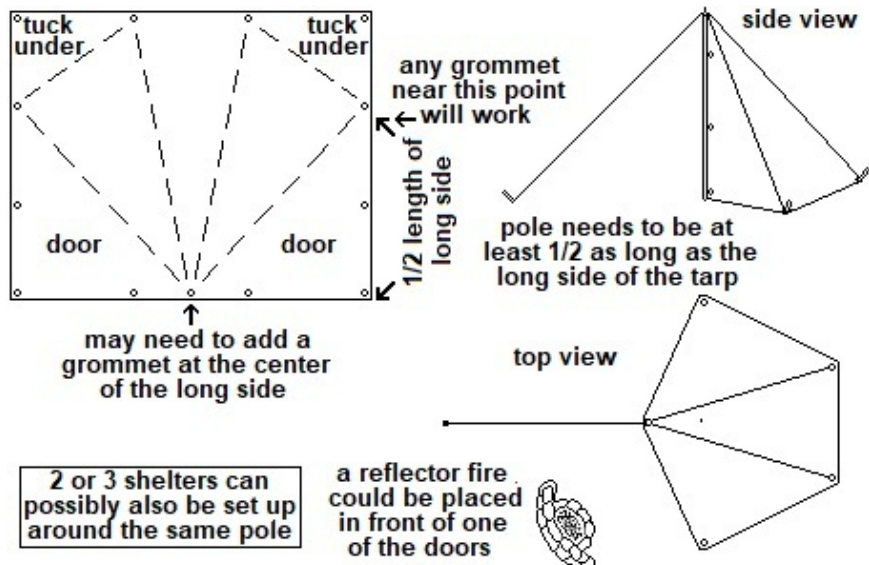
Tarp Shelters can be set up using the same design principles as shelters made from natural materials. They are made using poles cut near the campsite, which are tied together with twine and covered with tarps that are packed in. Be sure to measure and tie up the pole frame to fit the tarps. Don't just set a frame up, and then try to get the tarps to fit on it somehow!

A Totally Enclosed One-Tarp Shelter

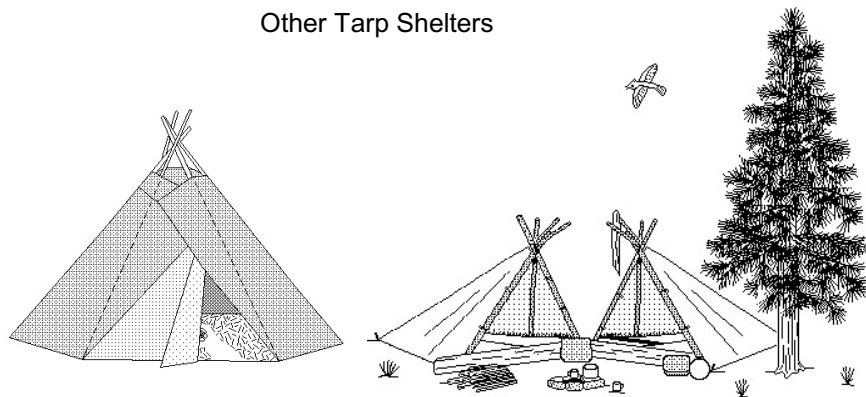
There are many types of tarp shelters. Please do some research as each situation is different, and the more ideas you have, the better. Details for one shelter will be shared here as an example. To make this shelter, you will need a 'grommet' in the center of one of the 'long' sides of the tarp. If there is not a grommet already there, one can easily be put in with a 'grommet kit' from the local hardware store. You will also need five stakes, which can usually be carved at your camp. Don't drive the stakes through the grommets. Tie a small loop of cord through the grommet and drive the stake through this loop. You will also need a pole or conveniently placed tree.



Drive a stake through cord loops at the two grommets which are nearest to the center of the *back* 'long' edge of the tarp. Then, tie the grommet in the center of the front long edge to the pole so the corners of the long edge will be right at ground level. Stake out a 'guy rope' to hold the pole upright. Drive two more stakes through loops at the grommets on each of the side edges of the tarp, so that the vertical front edge of the 'door' lines up with the pole. Try to minimize sagging, and make everything as snug and tight as possible. Finally tuck the extra back corners of the tarp inside the shelter, and make a 'debris bed.'



Other Tarp Shelters



SECRETS TO KEEPING WARM

Generally, your body produces enough heat to keep yourself warm. Therefore, it is not so necessary to *add* heat, as it is to *keep the heat you have from escaping*. Think of your body as a ‘container’ full of heat. ‘Leaks’ will cause you to lose heat, and therefore cause you feel cold. If you are able to ‘plug’ these leaks, you can keep warm. So, if you feel cold, mentally check each part of your body to discover where the heat leaks are. And then figure out why they are there and what you can do to ‘plug’ them. Below are some helpful ideas.

- **Insulation** —Insulation is the main plug that stops the heat leaks, and therefore it is the key to staying warm.
- **Adequate Clothing** —Statistically, the single most important determining factor in the out-come of a survival situation is adequate clothing. Choose your clothing carefully. Wear wool, or some of the modern synthetics designed to provide warmth even when they get wet. Wet cotton clothing in cold weather has led to the saying, “Cotton Kills.”
- **Cover Your Head** —About three fourths of your body heat is lost from the neck, ears, and head. So a warm cap can go a long way toward keeping you warm.
- **Dress in Layers** —Several thin layers can be warmer than one thick layer. Each layer acts as a barrier to prevent heat from leaving your body.
- **Cover Your Body Equally** —Cold causes the blood vessels to constrict. Any cold areas will slow the circulation of warming blood.
- **Allow for Good Circulation** —Loosen any tight clothing, particularly footwear. The stiffness of many shoes can also cut off circulation, so don’t lace up your boots too tight. In most cases you will be warmer by taking your shoes off when you go to bed.
- **“Pumping”** —As you move, air goes in and out through the openings in your clothing. Warm air is pushed out, cold air is drawn back in. This especially happens around your neck, waist, wrists, and ankles. Close off these openings as much as possible. Tie off the clothing around your wrists and ankles with some cordage, or strips of bark.

- **‘Debris Bed’** —You can lose more of your heat to the cold ground than to the cold air. So be sure to put adequate insulation between you and the ground. In most survival situations, this insulation will be ‘debris,’ things like dried grass, ferns, pine needles, moss, leaves, whatever is available. Make a bed *at least* a 6 in / 15 cm thick to insulate you from the cold ground. Some leaves ‘mat down’ a lot, so after you make the debris bed lay on it a bit, and add more debris if necessary.
- **‘Scarecrow’** —Debris can also be stuffed inside your clothing for more insulation. You may look like a ‘scarecrow,’ and it may be scratchy, but you will be warmer.
- **Stay Dry** —The cooling effect of evaporation can rapidly drain away body heat. In wet weather, or when crossing streams, take extra precautions to keep your clothing dry.
- **Minimize Drafts** —Flowing air will carry away much more of your body heat than still air. So as much as possible, get out of the wind, and plug off any holes in your shelter with debris.
- **Wash Up** —Clean skin will keep you warmer than if you are dirty. My personal theory is that the salts excreted in sweat are somewhat hygroscopic—that is, they absorb a certain amount of moisture from the atmosphere, which makes you slightly ‘wet.’ You lose heat as this moisture evaporates. But the salts keep re-absorbing it, resulting in a continual extra loss of body heat. If it is too cold to take a dip in the creek, just wash and immediately dry one part of your body at a time.

Section 4

WATER PURIFICATION

There are three main ways to purify water:

1. Filters —the least reliable
2. Chemicals —follow directions on the bottle
3. Boiling —the most reliable

The latest research has shown that all the ‘bad bugs’ are killed or made inoperable at 180°. So it is just necessary to bring the water to a rolling boil, 212°, to purify it.

Keep in mind that all of the above three methods only get rid of biological contaminants. If you suspect that there are chemical contaminants in the water, you will need to run it through a charcoal filter—which can be made from a plastic water bottle that the bottom has been cut out of.



HEALTH CONCERNS

WILDERNESS HYGIENE & SANITATION

• Soap

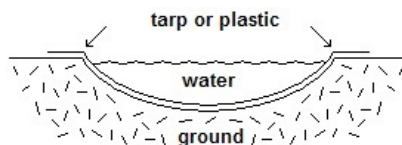
There are some plants that have natural soaps. For example: Yucca, (stems and leaves), Soap Root, (bulbs), Clematis, (leaves), and some of the Buck Brush species, (leaves). Crush up these plant parts to release the soapy juices. They make good 'shampoo' too. Ashes, (the whitish, greyish powdery left over from burning wood), can also be used as soap, especially for washing dishes. But don't use any of these soaps, or soapy plants in the streams, as they *are* harmful to aquatic life. Even though they may be biodegradable, they *will* pollute the water until they break down, which may take a while. Always use *any* soap away from the streams or lakes so it will have a chance to break down in the soil before it gets washed into the water.

• Bathing

The simplest way to wash up is to take a 'dip' in the creek. You may want to do this during the warmer part of the day, rather than in the cooler mornings or evenings —work *with* nature rather than *against* it.

It is also a good idea to go to bed clean. If it is too cold to get all the way in, wash one body part at a time, then dry off and cover up before washing the next part. Wash downstream from where you get your drinking water.

You can easily make a 'wash basin' by digging a small pit and lining it with a plastic bag or a corner of your tarp. Heat up some water and have a nice warm 'sponge bath.'



• Washing Clothes

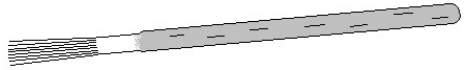
Clothing can be washed by rinsing them in water then spread them out to dry on bushes or warm rocks.

• Washing Dishes

Do not wash dirty cook pots or utensils in streams as the food and creosote, (that black sticky stuff on the outside the pot), will pollute the water. Even though the food may be biodegradable, it will pollute the water until it finally breaks down, which can take a long time. And no, the fish do not eat it. Bury any food waste as you would human waste. Scoop up some water scrub and wash back away from the water's edge. Sand works good to scrub. Dump out all wash and rinse water well back from the water's edge so everything has a chance to break down in the soil.

• A Twig Tooth Brush

Peel the bark off of one end of a willow twig, and smash it with your digging stick or a rock. Use



the point of your knife to separate any sections that still stayed together. Powdered charcoal can also be used for 'toothpaste.' It rinses out well.

• Wilderness Sanitation

Choose a place outside the camp where you can go to relieve yourself. You must carry a pointed stick as a part of your equipment. When you go outside to squat, dig a hole with it. When you're done, cover up your excrement. The Lord your God moves around in your camp to protect you and hand your enemies over to you. So your camp must always be holy. This way, the Lord will never see anything offensive among you and turn away from you. (Deuteronomy 23:12-14 *GOD'S WORD*)

Find a secluded spot and dig out a hole about the size of a person's head. If the area is too rocky, turn over a stone and use the cavity underneath it. Squat over the hole to do your 'business,' then cover it up!

• Toilet Paper Substitutes

The classic 'toilet paper substitute' is leaves. Look for large strong leaves, even dead leaves can work. Use several, as many leaves have a tendency to 'break through.' Know your plants, you don't want to use poison ivy or poison oak! Soft moss, and snow, (that holds together), and smooth rounded stones also work well.

• Deoderant

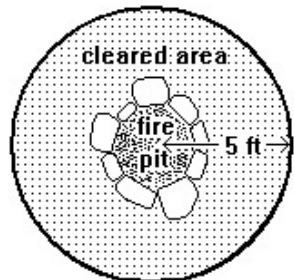
Although it might not 'last all day,' ashes do work. Be sure they have cooled.

Section 6

FIRE

FIRE SAFETY

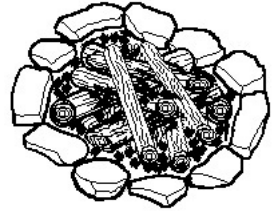
Clear an area down to mineral soil 5 ft / 1.5 m out from the center of the firepit in all directions. Always have water and a digging tool at hand when you have a fire. When finished with the fire, douse it with water to be sure it is *out*. If at all possible, make the fire pit 'soupy.'



FIRE THEORY

In order to burn, a fire needs:

- (1) Fuel
- (2) Oxygen
- (3) Heat —think: **'combustion temperature'**



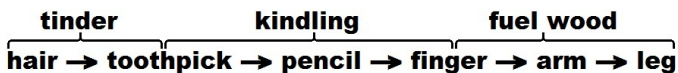
'COMBUSTION TEMPERATURE' ACTIVITY

Hold a burning match up to a piece of log about the thickness of your upper arm, (hold it to wood, not bark). The log may char a little, but it does not catch fire.

Next, cut a small chip off of the log at the same spot the match was held to. Strike another match and hold it up to the chip. The chip readily catches fire! It is the exact same wood! What is the difference? —The amount of Heat from the match isn't enough to be able to bring a log up to 'combustion temperature,' but it *is* enough to easily bring a wood chip up to 'combustion temperature.'

So let's experiment a bit. Hold a match up to a thumb diameter stick. Will it catch fire? How about a pencil sized stick? How small does the stick have to be to catch fire? How small a stick will a burning chip of wood ignite? What size stick will a handful of burning chips ignite?

In order to burn, the fuel must be heated to 'combustion temperature.' As wood burns, the 'combustion' reaction gives off more Heat. This Heat can be used to bring slightly larger pieces of fuel up to combustion temperature. By feeding the fire this way, larger and larger pieces of fuel wood can be added. Eventually there will be enough Heat to bring the original log up to combustion temperature. But you have to start small and build up.



So, when starting a fire, first light some thin 'tinder' material. Then add some 'kindling,' and finally, to the burning 'kindling,' add first some smaller, then larger pieces of 'fuel wood.'

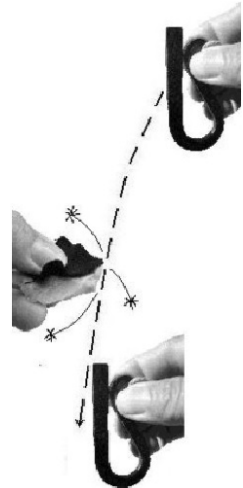
Since fire burns 'up,' light the fire as low to the ground as possible. If the ground is wet, lay down a layer of small sticks to start the fire on.

Work to establish a **'central heat core'** that will provide Heat to keep the rest of the fire burning. This 'heat core' usually takes the form of a bed of coals. So lay the kindling and fuel wood on the fire in such a way that it will build up, and *maintain* a bed of coals in the center of the fire.

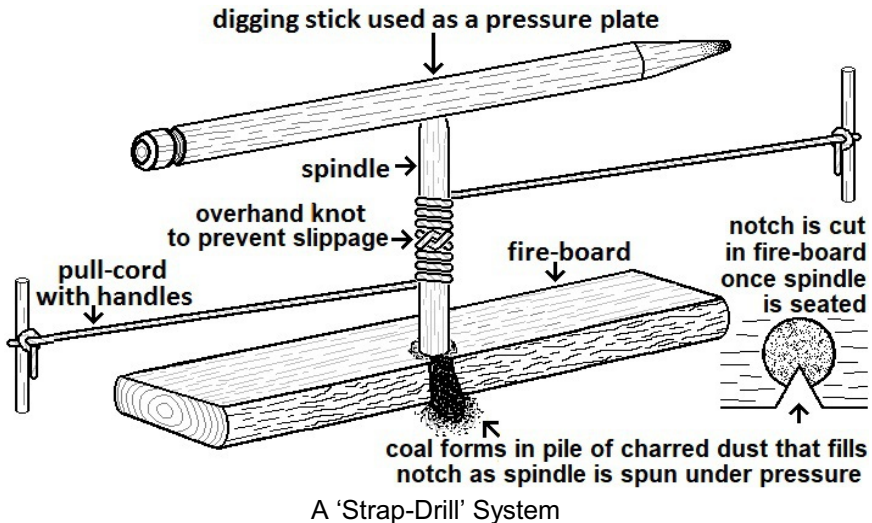
Also keep in mind that there are two parts to a wood fire: 'flames' and 'coals.' As wood is heated, 'wood gases,' or smoke, are driven off. If these wood gases reach combustion temperature they will burn as 'flames.' When all the 'wood gases' are driven off, 'coals' are what is left.

SUSTAINABLE FIRE STARTING

When we 'flee to the mountains,' we will need to be able to make fire the whole time we are there —indefinitely. So what will happen after we use that last match? or the lighter runs out? or the 'ferro rod' wears down? Unfortunately, most common fire-starting methods are not indefinitely sustainable. Methods that could be sustainable are: (1) The various friction fire-starting methods —bow-drill, hand-drill, strap drill, fire plough, etc. The sticks these methods use get used up in the process, but more can be gathered from nature. (2) Striking certain rocks together to make a spark. But this method requires specific rocks, which simply aren't available in most areas. (3) Possibly the 'fire piston.' And (4) the *historic* flint & steel, (as opposed to 'ferro rods' which are sometimes incorrectly called 'flint and steel'). It will take time, patience, and practice to become skilled with any of these methods, but from my experience, flint & steel is the easiest to use and carry. Unfortunately, these aren't common on the market, but with a little research online you should be able to find something. Check Ebay and Etsy.



Striking a Spark with Flint & Steel



Using a Tinder Bundle

Tinder is almost hair-fine dry shredded material, which will easily grow a coal and burst to flame. Look for shreddy inner and outer bark, downy seed fluffs, the stringy fibers at the base of palm fronds, dry grasses,

shredded pine needles, and similar material. Fine wood scrapings can also work. Shred the tinder even finer if necessary by rubbing it between the palms of your hands to 'buff' it. It needs to be fine and fluffy. Make a bundle of this tinder by wrapping it into a 'nest' shape about the size of a large fist. The bundle's density should be firm but a little spongy. Keep the tinder bundle in a safe dry place.



Carefully transfer the coal or burning charred material to the center of the tinder bundle, and fold the bundle loosely around it. Blow gently and steadily on the ember so it will spread into the bundle. As it spreads, it should make more and more smoke.

Hold it above the level of your face so you can turn your

head down to get a breath of fresh air. Work with nature, and turn so any wind will blow the smoke away from your face. The wind can also help blow on the coal. Once the tinder bundle bursts to flame, gently place it in the fire-pit and add the kindling you have gathered.



Section 7

FOOD

Identifying and gathering wild edibles is really only half of the process of getting something to eat —preparing the food is the other half. Since wild edibles are probably not things we are used to eating, cooking will make them more digestible and easier on our system. Cooking will also kill any germs.

SIMULATED FOODS

To feed a group with wild edibles on practice survival outings may be a great experience. But to do so, it would probably be necessary to strip the area of everything edible, and that wouldn't be right. It would also take a lot of time just to gather *enough* food to feed the group —time that could be spent learning and practicing other necessary skills. On the other hand, using 'simulated survival foods' —foods we can bring with us which 'simulate' what we *could* gather from nature— actually gives us a more complete experience. We will still sample wild edibles we find, but for meals we will prepare the simulated foods the same way the wild edibles would have been prepared. Using simulated survival foods also gives us

time to learn other important skills, allows us to prepare a greater variety of food-stuffs than what happens to be available in the area at the time, and it assure everyone will have plenty to eat.

Simulated Survival Foods

- raw root vegetables such as: potatoes, carrots, beets, turnips, and sweet potatoes
- fresh or dried fruit (with no processing other than drying)
- seeds and nuts such as: sunflower seeds, peanuts, or dried corn for 'parching'
- cornmeal and/or oatmeal for making 'mush' or 'grits'
- whole grain flour mix for making 'ashcakes;' the only additives being salt and *maybe* a little brown sugar
- 'hardtack' —this is essentially ashcakes which are baked at home in an oven
- salt & *maybe* some simple seasoning herbs, (no commercial seasoning mixes)

SIMPLE CAMPFIRE COOKING METHODS

• Roasting

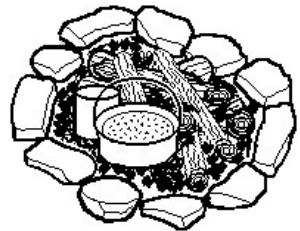
Many foods can be easily roasted on a bed of coals. Simply rake some coals to one side of the fire, and place the food directly on top of the coals, turning it every so often.

• Stew

A practical way to cook many foods is to boil them together in a stew. Wash, and cut up whatever you have. The smaller you cut the pieces, the quicker they will cook, but if you cut them too small, you may end up with soup.

Make the pieces about the size of the last joint

your finger. A little salt also goes a long way toward making things taste better, so be sure to include some salt in your survival kit. Also, keep watch for wild onions!



• Ashcakes

Seeds, wild grains, and nuts can be ground and made into ashcakes. It was essentially ashcakes that the angel baked for Elijah when he ran into the desert, (see 1 Kings 19:6). 'Grind' the seeds between a couple of smooth rocks. (It may work better to soak some seeds for several hours until they swell, before grinding them —in which case you may end up with dough that is ready to use. Add enough water to the flour to make a stiff dough. Then flatten a 1 to 1¼ in / 2 to 3 cm diameter ball of dough into a thin small 'tortilla.' Cook the ashcakes on a bed of hot coals.

• **Mush**

Another way to cook seeds, wild grains, and nuts is to make 'mush' or 'porridge.' Grind them into a coarse meal, or if the seeds are small, just 'crack' them and cook them more-or-less whole. Boil some water in your cook pot, and when the water is boiling, pour the meal into the water while stirring it. After the meal has been added, place the cook pot at the edge of the fire to simmer until done. Stir frequently.

• **Parching**

Another simple way to prepare seeds that has been used since ancient times is parching. Boaz gave Ruth some parched grain for lunch when she was gleaning in his field, (see Ruth 2:14.) Pour a thin layer of seeds in the bottom of your cooking pot. Put the pot on the fire, and stir or shake the pot frequently. Soon the seeds should begin to puff up or even 'pop' like popcorn. As soon as they stop 'popping' take the pot off the fire, and immediately pour the parched seed into another container. This process brings seeds very close to being burned, and the heat of the pot may end up burning them even though it has been taken off the fire.

WILD EDIBLE PLANTS

Don't wait until you need to survive on wild edibles to learn about them. Invest in some books on the wild edibles in your area, and spend some time becoming familiar them. Learn to identify plants by starting with the different leaf shapes.

Don't eat any plant unless you know for sure it is edible!

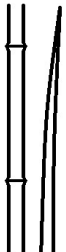
'Food' is the last of the Survival Priorities. You *will* live a few weeks without food. So it is not worth the risk of eating something you are not certain of.

'Buds are best.' In general, younger plant parts will be more tender and tasty. Older parts may still be edible, but they can be tough and bitter.

To help you get started, here are twelve families of wild edible plants that can be found across North America, and to a certain extent around the world. All of the plants in each of these families are edible. The first four in particular, have at least some edible parts that can be gathered almost any time of the year.

1. **Grasses** (*Graminae*)

- Identifying Characteristics: bamboo-like nodes along stems, long, straight, pointed, blade-like leaves with no mid-vein
- Edible Parts: young leaves and shoots, 'knots,' root stems and tubers, seeds
- Other Uses: bedding, thatching, tinder bundles
- Cautions: 'ergot,' a black fungus that can grow on grass seeds, is poisonous



2. **Cattails** (*Typha*)

- Identifying Characteristics: long, straight leaves with no mid-vein, sausage-like seed head, typically grows in shallow water
- Edible Parts: young shoots, young 'flower parts,' pollen, 'hearts,' young and 1st year root stems
- Other Uses: bedding, thatching, basketry, fire-drill spindles
- Cautions: none



3. **Pines** (*Pinus*)

- Identifying Characteristics: 'sheath' wrapping around base of needles
- Edible Parts: young needles, pine needle tea, inner bark, pine nuts
- Other Uses: bedding and thatching (old needles), shelter poles, good wood for fire-starting, pitch glue
- Cautions: (all 'evergreens' aren't pines)



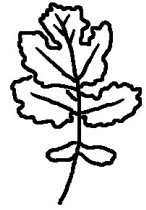
4. **Oaks** (*Quercus*)

- Identifying Characteristics: acorns with 'caps,' leaf shape
- Edible Parts: acorns (must be 'leached'), inner bark, pollen
- Other Uses: wood for tools, long-burning firewood
- Cautions: none



5. **Mustards** (*Brassica*)

- Identifying Characteristics: mustard/radish type taste, leaf shape
- Edible Parts: whole plant
- Other Uses: seasoning?
- Cautions: should have mustard/radish type taste



6. **Thistles** (*Cirsium*)

- Identifying Characteristics: leaf shape, spines, pink-purple 'shaving brush' flowers
- Edible Parts: roots, leaves (pick off the spines), young stems, young flowers ('artichoke')
- Other Uses: down for insulation and tinder bundles
- Cautions: (watch out for spines!)



7. **Stinging Nettles** (*Urtica*)

- Identifying Characteristics: toothed leaves, stinging hairs, frequently grows near water
- Edible Parts: leaves
- Other Uses: strong fine cordage fibers in stalk
- Cautions: use caution when gathering due to stinging hairs on plant —hairs loose sting when wilted



8. Wild Onions, Garlic, Leeks, Chives (*Allium*)

- Identifying Characteristics: typical onion-garlic-leek-chive smell, 'ball' of white to cream colored flowers at end of a stem, long thin leaves, 3/8 in. / 8 mm or larger bulb
- Edible Parts: bulbs, young leaves
- Other Uses: ?
- Cautions: some poisonous 'look-a-likes' —be sure it has the typical onion-garlic-leeks-chives smell



9. Wild Roses (*Rosa*)

- Identifying Characteristics: leaf shape, simple 5 petal whitish to rose pink flowers, thorns
- Edible Parts: petals, 'rose hips' (fruit)
- Other Uses: strong straight shoots
- Cautions: (thorns)



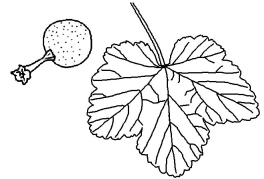
10. Wild Raspberries & Blackberries (*Rubus*)

- Identifying Characteristics: leaf shape, thorns/spines, orange, red, purple, black berries, berries made up of many clustered sphericals, plants grow near water and frequently form thickets
- Edible Parts: berries, petals, leaf tea
- Other Uses: basketry
- Cautions: (spines/thorns)



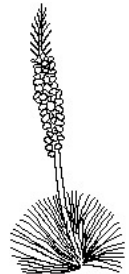
11. Gooseberries & Currants (*Ribes*)

- Identifying Characteristics: leaf shape, dried flower parts on blossom end of berries, 'gooseberries' have spines, 'currants' do not —but may have small 'bumps' where the spines would be, reddish, bluish, purple, black berries on low to medium sized bushes
- Edible Parts: berries
- Other Uses: ?
- Cautions: be sure berries have the dried flower parts still firmly attached



12. Yuccas (*Yucca*)

- Identifying Characteristics: straight, fleshy, fibrous leaves with a spine at the tip, fleshy white to cream colored flowers on a stalk
- Edible Parts: young shoots, flowers, young fruits (must be boiled in changes of water)
- Other Uses: strong coarse fibers in leaves, leaf spines with fibers attached for 'needle and thread,' soap from roots, base of stalk, and fleshy leaves
- Cautions: (watch out for spines!)



CUTTING & CHOPPING TOOLS

For many survival tasks we will be using some type of sharp edged cutting and/or chopping tool. What is said here about 'knives' therefore applies to all sharp edged cutting tools such as machetes or bush knives, axes or hatchets, and saws.

'THE #1 MOST IMPORTANT KNIFE SAFETY RULE'

All of the 'knife safety rules' can pretty much be summed up by the following rule:

Whenever any sharp edged tool is 'open' or out of its sheath,
ALWAYS BE THINKING, 'WHERE WOULD IT GO IF IT SLIPPED?'

For example: Always cut away from you —because if it slips, it will go out away from you rather than into you. And when you hand someone a knife, hold on to the *back* of the blade, and offer them the handle —so if it slips, they don't get cut and you don't get cut.

'BLOOD BUBBLE'

Since we are frequently in groups, we also need to be sure to watch out for other people around us —so if we happen to slip *they* don't get cut either. A concept we have found helpful here is that of a 'Blood Bubble.' A Blood Bubble is a spherical 'bubble' shape around you —anywhere the blade you are using can reach.

Since anyone in your blood bubble could also get cut if you slipped, both you and they need to be concerned about knife safety. For example, if they just happen to be walking by, stop carving until they're out of your blood bubble. But if they stop to talk, let them know that they're inside your blood bubble, and that it might be better if they step out of it.



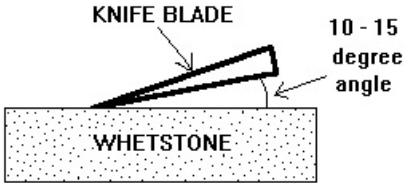
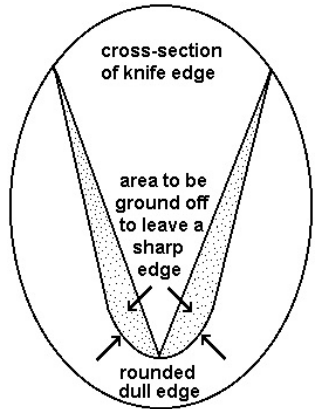
KNIFE SHARPENING

It is more efficient to work with a sharp knife than a dull blade. It is also safer because a sharp blade will take less energy to cut with, and you will have better control over where the blade is going. To make cuts with a dull knife requires more force, which greatly increases the risk of a slip.

If your ax is dull and you don't sharpen it, you have to work harder to use it. It is smarter to plan ahead. —Ecclesiastes 10:10 (GNT)

To sharpen a knife you are actually grinding off metal to leave behind a new sharp edge. The diagram at the right shows a microscopic cross-section view of the rounded edge of a dull knife. To sharpen it, the shaded metal must be ground off. While sharpening, it is therefore important to keep the angle of the blade to the whetstone the same, or the edge may end up getting rounded again.

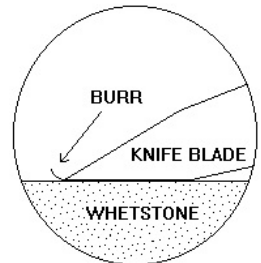
Press the edge against the stone fairly hard at first. Using a circular motion, work all along the edge from point to handle, changing sides regularly. Frequently rinse with water, or wipe off both the knife and the face of the whetstone to remove the small pieces of metal and stone that are ground off.



When the roundness has been ground off and a new edge is formed, the metal at the very edge will have a tendency to turn up instead of being ground off. This is called 'burr' or 'wire edge.' It forms on the side of the knife opposite from the side the whetstone was

last used on. You can feel this burr if you lightly run your thumb sideways *across* the edge of the knife. It will slightly catches the grooves of your thumb-print. As you grind, check frequently for burr. Keep grinding until you have burr all along the whole edge.

But the burr must be removed before you're finished. Continue grinding as before, but press *very lightly*. After every couple strokes, change sides, rinse or wipe off both blade and stone, and check for burr. When the burr is gone, the knife should be sharp.



CARVING TECHNIQUES

• Chopping Blocks and Cutting Boards

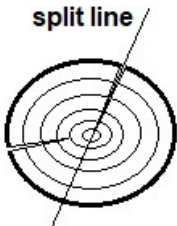
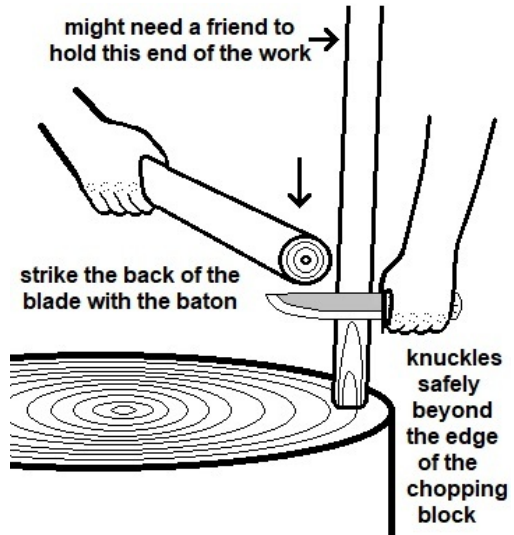
Although their importance is often overlooked, 'chopping blocks' and 'cutting boards' make it possible to use cutting and chopping tools much more accurately, effectively, and safely as the increased stability, and effectiveness, decrease the possibility of a slip. If at all possible, use a chopping block or cutting board in connection with a knife, axe, hatchet, machete, or saw. If you value having a sharp edge to work with, NEVER use a rock or the dirt for a chopping block.

• Watch Out for Your Knuckles

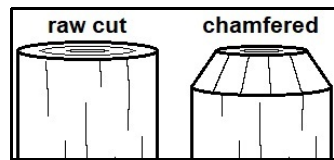
When using a knife with a chopping block, notice that at the end of a cutting stroke your knuckles will hit the surface of the chopping block before the blade does. This may result in a painful set of bloodied knuckles. To avoid this injury, place the end of the piece you are cutting near the edge of the chopping block, so that when the blade hits the chopping block at the end of a cut, your knuckles will be beyond the edge.

• Batoning

One way to make strong cuts is to hit the back of the blade with a mallet. Very accurate cuts can be made by using varying amounts of force, and carefully angling the blade. This increased accuracy also increases the safety of what you are doing. This method also works very well for splitting wood.



make your split on a radius through the center of the growth rings and if possible in line with a crack



To prevent sharp edges and splitting, chamfer the ends of your work

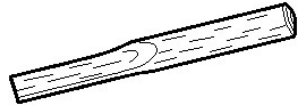
'Earth End' and 'Sky End'

As you are looking for sticks to cut and carve, notice that most trunks and branches grow with a natural taper. The thicker end is nearest the base of the tree, while the thinner end is growing upward towards the sky. In primitive skills circles this thin end is called the 'sky end,' and thicker end is called the 'earth end.' For many projects this natural taper doesn't really matter. However, for other projects, such as stakes, 'utensils' and digging sticks, it can be helpful to take advantage of this natural taper.

Simple Eating 'Utensils'

The easiest eating utensil to make might be just cutting and peeling some twigs for a pair of chopsticks. (Knowing how to use chopsticks can be a valuable survival skill as they can also be useful for other things.)

Another easy utensil to make and use is a simple 'flattened stick spatula.' Choose a thumb sized stick that is free of knots from a wood that is easy to carve and does not have a bitter taste, such as willow. Peel and smooth the stick. Then flatten the 'earth end,' and chamfer the 'sky end.' (Yes, a spoon may work better—but spoon carving is a whole different league.)



DIGGING STICK—the Primitive Multi-Tool

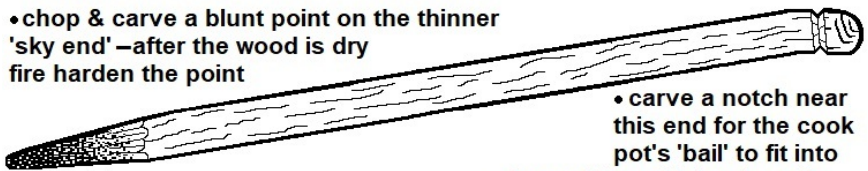
One of the first things we might want to make in a wilderness survival situation would be a 'digging stick.' They're called 'digging sticks' because they were traditionally used to dig edible roots. They have also been known as 'throwing sticks' because they can be effectively thrown as a hunting weapon. But they are also useful as: a mallet, a 'poker' to arrange the burning sticks in the campfire, to move cook pots in or out of the fire, to dig the fire pit, and to make 'cat holes' for 'going to the bathroom.' (NOTE: just use the digging stick to *dig* the cat hole. Because the stick is needed for so many other things, *do not risk contaminating it by using it to cover up the hole!*) A digging stick can also be used to level out the sleeping area, as a pry-bar, as part of a fire-drill set, and if needed, as a club for self defense.

A stick that is just laying on the ground may work for some of these uses. But anything laying on the ground is going to be rotten to some extent. So for strength, the best digging sticks are made either from green wood or from wood that has recently died. Therefore, it is important to have a Caretaker Attitude when choosing a stick.

• keep the thicker 'earth end' to use as a mallet

• chop & carve a blunt point on the thinner 'sky end'—after the wood is dry
fire harden the point

• let this end get 'dirty,'
use it for digging and
poking the fire, etc.



• carve a notch near
this end for the cook
pot's 'bail' to fit into

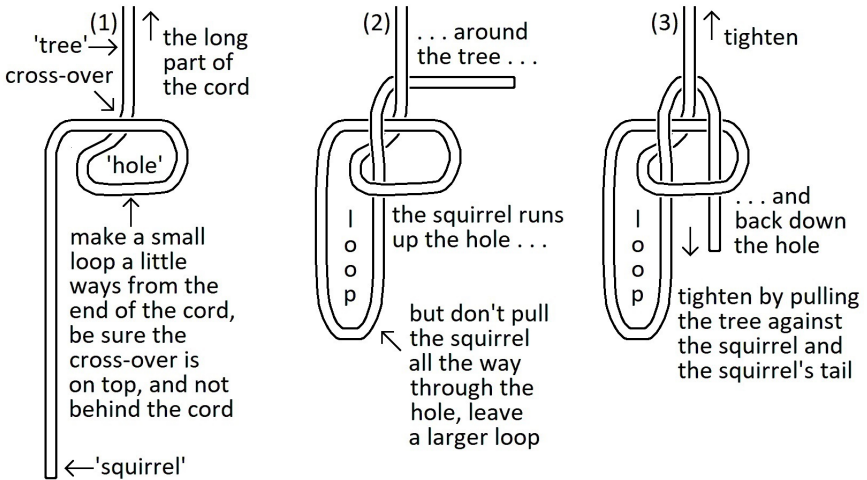
• keep this end 'clean' so dirt
won't fall off of it into your food
while moving the cook pot in or
out of the fire

USEFUL KNOTS

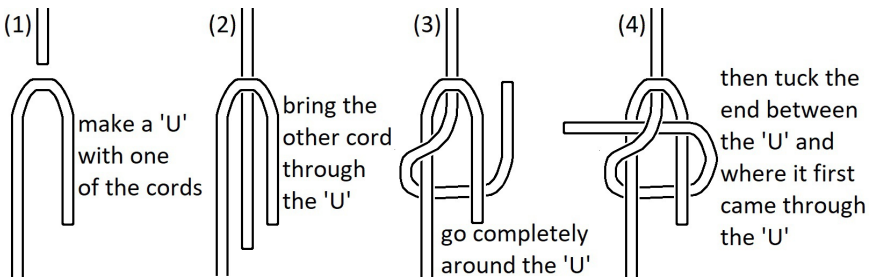
There are three types of 'knots' based on their uses:

1. Knots —which are tied with just the end of a cord
2. Bends —which are used to tie two cords together
3. Hitches —which are used to tie a cord to something

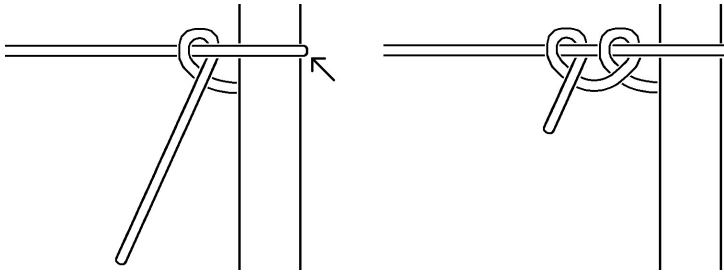
Bowline —to tie a loop in the end of a cord



Sheet Bend —to tie two cords together



Two Half-Hitches —to tie a cord to something

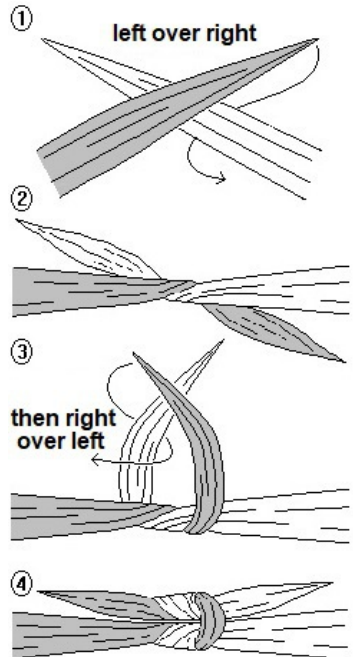


- (1) Pull the cord snugly around the pole.
- (2) Hold the cord against the back of the pole, (arrow), to keep it tight.
- (3) Loop the end of the cord around the part of the cord that is coming to the pole, and pass the end between the cord and the pole.
- (4) Tighten —this makes one 'half-hitch.'
- (5) Note which way the end of the cord is going around the part of the cord that is coming to the pole and loop the end around again the same way —don't switch directions!
- (6) Pass the end in between itself and the first half-hitch to make the second half-hitch, and tighten.

Square Knot —to tie a bundle together or for bandaging

This knot is essentially two 'overhand knots,' tied in opposite directions one on top of another: "Left over right, then right over left."

Note: Although the Square Knot works well to tie up bundles and for bandaging, **DO NOT** use it to tie two ropes together because it can easily slip. This characteristic along with people continuing to use it to tie two ropes together has earned it the name: '**Death Knot.**'



DIRECTION FINDING

Direction Finding Activity #1, Part 1:

Mark a starting spot a little ways in from one edge of an open relatively flat area, such as a meadow or play field. Stand on this spot, and face some distinctive object along the far side of the field, or somewhere beyond. Have two additional markers in your hands, 'bean bags' work well. Then have someone blindfold you, which represents not being able to 'see' your destination, such as when hiking through woods, and try to walk about 25 steps in a straight line toward the object at the far side of the field. Drop one the markers. Turn around, and try to walk the same number of steps straight back to the starting spot. Just before you take off the blindfold, drop the second marker. If you are like most people, rather than walking straight out and back, you will follow a pattern similar to the diagram at the right. This activity graphically demonstrates that unlike many animals, humans *do not* have any inherent sense of direction. So we *must* rely on things outside of ourselves to find our way



We walk in this pattern because most of us have one leg that is slightly longer or stronger than the other which causes us to veer to one side or the other—which is also why people 'walk in circles' when they get lost.

Why People Get Lost

There are two main reasons people get lost:

- (1) They are not paying attention to where they're going
- (2) They don't trust things that can give them direction

It is also worth noting here that people are lost spiritually for these exact same two reasons. Either they are not paying attention to where they're going spiritually, or they don't trust what God tells us about which way to go in life.

Direction Finding Activity #1, Part 2

Let's do the above activity again, only this time we will use a compass. Stand on the starting spot again, facing the object at the far side of the field. Imagine a straight 'line' between you and the object—your 'line of travel.' Hold the compass flat in your hand in front of you.

Now, never mind 'North, South, East, and West' for a minute. Note that when the compass is held flat, the needle always point off in a certain direction. This is because the needle is magnetic, and it will always line itself up with the earth's magnetic field.

Notice the *angle* of the compass needle to the 'line of travel' between you and the object at the far edge of the field. In the diagram, the colored part of the needle, (usually red), is pointing to the right of this 'line.'

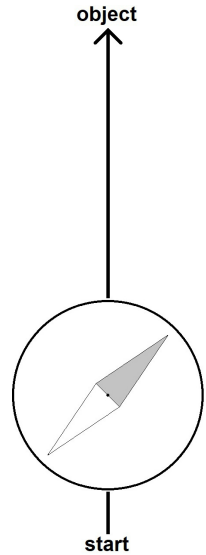
Tie the blindfold on again. But this time tie it so that there is a gap along its lower edge, that you can still look through and see the compass. If you keep the needle at this *same angle* to your 'line of travel' as you walk out and back, you should be able to go pretty much straight out and back.

Direction Finding Activity #1, Part 3

Before compasses were invented, people used the sun to tell directions, and we still can. For a simple example: Note the angle of your *shadow* to your 'line of travel' toward the object at the far edge of the field.

Tie the blindfold the same way as for Part 2 so you can still look down and see your shadow. If you keep your shadow at this same angle as you go out and back, you should also be able to stay fairly straight on course.

Keep in mind that as the day progresses, the angle of the shadow is going to change. The amount of change during the above activity would be negligible, but if you were hike-in in the morning and out in the afternoon, the angle of the shadow would be quite different. Which brings us to the shadow stick activity below.

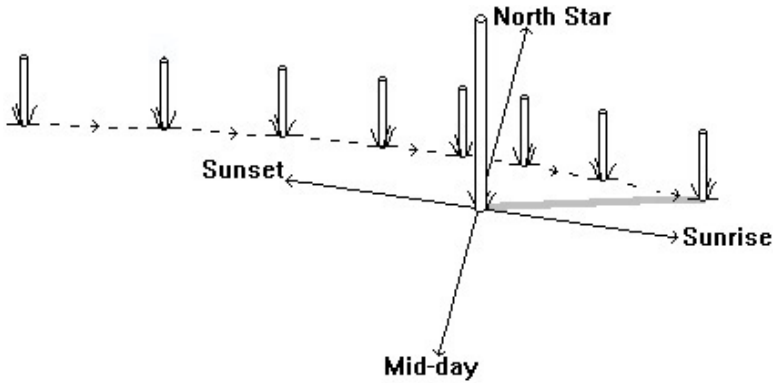


“Leap Frogging”

Just before we talk about the shadow stick let's note that with both of these last two methods, it is possible to drift to one side or the other while still keeping the same angle to the 'line of travel.' You can increase your accuracy, by picking another object that is on this line a short distance out that you can still see. Walk to it. Then, pick another object that is a short distance further along the line that you can see and walk to it. By 'leap frogging' out and back this way, you will minimize the amount of drift to one side or the other.

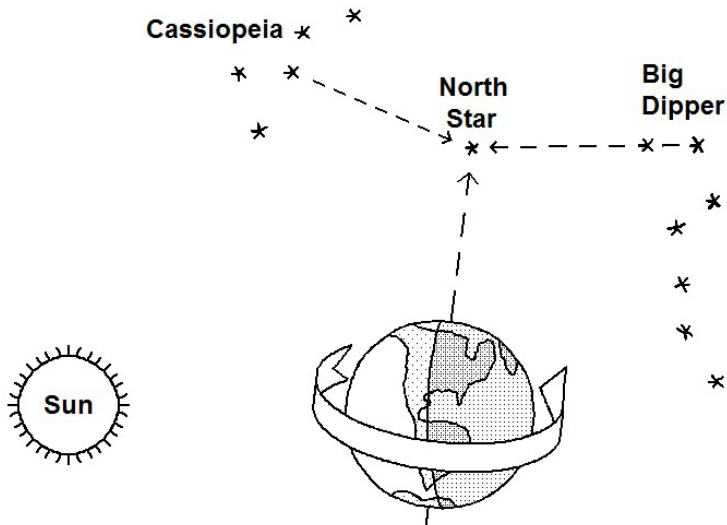
Direction Finding Activity #2

Set a relatively straight stick, straight up and down in the ground. Once it is set in place, it is important not to move or even bump it. Mark the *tip* of its shadow. Wait 15-20 minutes for the earth to turn, and mark the tip of the shadow again. It is highly recommended that you do this throughout as much of the day as possible. What does the pattern the markers make tell you about which way the earth is rotating? Keep in mind that all the directions are based on the rotation of the earth.



Note that the shadow markers make a fairly straight to slightly curved line. This line, especially the section representing the shadows marked during the middle of the day is pretty straight East and West. Cross-ways to this line would be North-South. Notice that this North-South line is in line with the axis of the earth as it turns. Also note that in the Northern Hemisphere, the shortest distance from the base of the shadow stick out to the marker line would point straight North.

Fix this pattern that the line of markers make in your head. Note particularly where the shadows fall at different times of the day. Based on this pattern, you should be able to roughly determine the directions just by looking at shadows you see around you compared to the time of day.



All the Directions are Based on the Rotation of the Earth

Directions and Trails

Now, let's be practical. Most of the time when we go walking out in nature, we're on a trail. It is so much easier to hike down a path than to try to go cross country in straight lines. So how can what we've learned here help us on a trail?

The first thing is to *pay attention to where you are going*. Don't just follow the person in front of you. Before you head down the trail, note which direction the trail is going. Note any prominent landmarks in the area and which direction they are from you and the direction you are traveling.

Then, as you hike along, notice any major bends in the path, or even gradual curves in the trail as a whole, and which direction they turn. Also note other landmarks along the way and what direction they are to the way you are going. And be sure to turn around every once in a while, to see what the scenery looks like in the opposite direction.

Directional Awareness

Practice 'Directional Awareness' by always keeping track of:

- Where you are
- How you got there
- Which way you are going

IF YOU DO GET LOST

If you do get lost:

Stay
Think
Observe
Plan

'P' also stands for:

- The Survival **P**riorities: this is what your 'Plan' should be based on
- **P**ray —if you haven't already

Survival Priorities

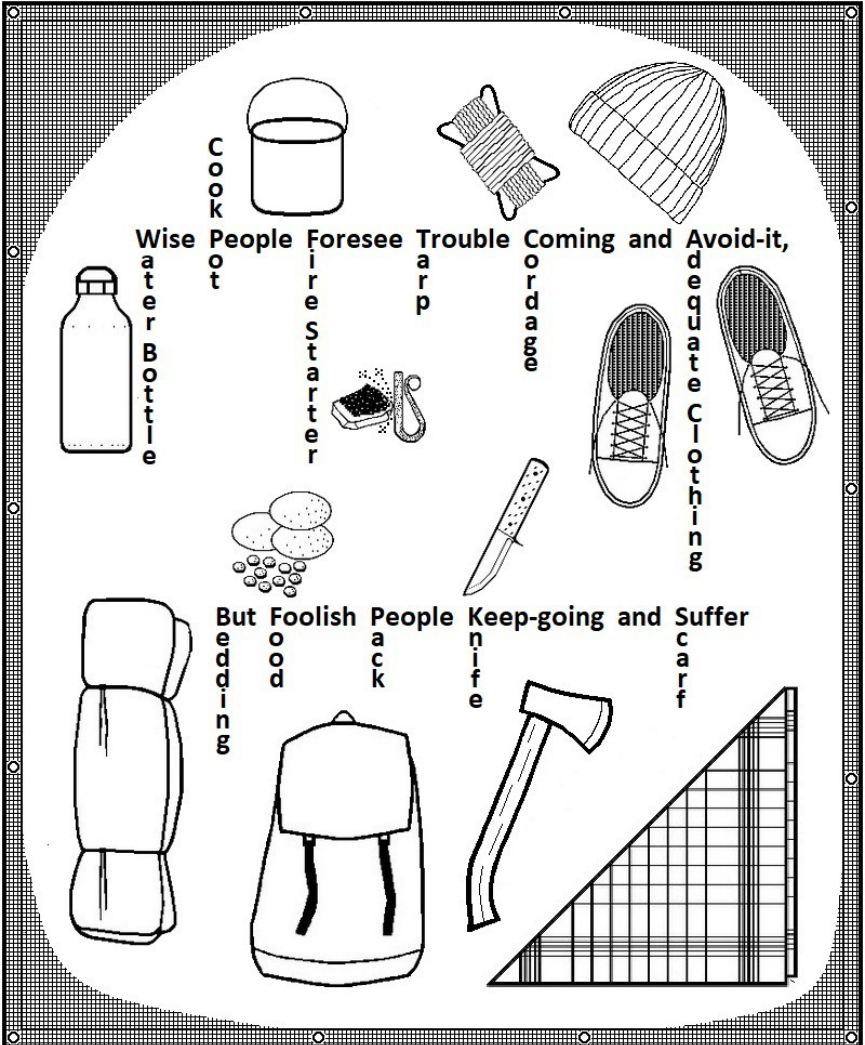
1. Shelter
2. Water
3. Health Concerns
4. Fire
5. Food

Because people have a strong tendency to panic and run when they think they are lost, notice that the first two words here are, 'Stay' and 'Think' —the exact opposite. Panicking and running not only wastes a lot of energy, it also risks getting injured, which would definitely make things worse. So calm down and resist this tendency.

You may need to go to a safer or more comfortable spot, but as soon as possible 'Stay' and 'Think' about how you got to where you are. What do you remember? Look around, and 'Observe.' What landmarks did you notice on your way in? Is there a nearby high area you could easily get to and have a better look? Also 'Observe' what survival resources are available? —both what you have with you, and what is in the area? Then, before you go or do *anything else*, make a 'Plan' based on the Survival Priorities. (The activity that begins on page 6 might also be helpful here.)

THE PROVERBS 22:3 SURVIVAL KIT

This idea started out with a question about the fewest number of items that would still cover the essentials for wilderness survival —*the items you want to be sure to have in your survival kit*. Note that 'Knife' here also includes an axe and/or machete, and saw, as well as the necessary tools to keep them sharp. Don't feel limited to these items. You may also want to add: some salt, a first-aid kit, some toilet paper, etc.



NOTES ON SURVIVAL KIT EQUIPMENT ITEMS

In order to do many activities in life you need:

- Knowledge
- Equipment
- Skill

It is the same with wilderness survival. Start with 'Equipment,' that way you will be able to use your equipment to develop your 'Skills.' And pick up 'Knowledge' wherever you can along the way.

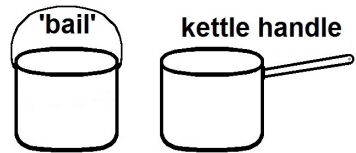
'You can't learn to play a violin, unless you have a violin to play.'

• **Water Bottle** —Unless you are a child, your water bottle should hold at least 1 qt / 1 lt. A bottle made of stainless steel can also be used to boil water to purify it. Being able to boil water in both your water bottle and your cook pot, enables you to purify twice as much in essentially the same amount of time. Wide mouth bottles also seem to be more practical than those with narrow lids. In addition to boiling, water can be purified by chemicals such as purification tablets, or with a filter.

• **Cook Pot** —Because it can be used for cooking, purifying water, and as a container in general, your cook pot is one of the most important items in your kit.

Pots with a 'bail' seem to be easier to work with over a campfire than those with 'kettle

handles.' A simple inexpensive cook-pot can be made by attaching a wire "bail" to a can. The most practical size cook pots to carry for personal use hold a little over 1 qt / 1 lt. If you are responsible for small children who are not able to carry their own kit, you may want to carry something a bit larger. For utensils, carve some chop sticks, make a flatten stick spatula, or carve and burn out a spoon.



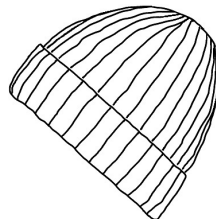
• **Fire- Starter** —Because fire plays such an important part in wilderness living, a fire-starter is also one of the most important items in your kit. When choosing which fire-starter(s) to include, keep in mind that in an indefinite long-term situation, sooner or later you will use that last match, the lighter will run out, or the 'ferro rod' will wear down —then what? The only reliable methods we have found to make fire indefinitely in the wilderness are historic flint & steel kits, friction fire methods, and possibly fire pistons. Practice making fire under different weather conditions to be competent with both fire making and fire safety.

• **Tarp** —It is possible to make adequate shelters using only materials found in nature. But tarps are fairly light weight, easy to carry, and with

just some twine and some poles cut near the campsite, a tarp shelter can usually be set up more quickly and easily. Unlike most tents, many tarp shelter designs can have a fire in connection with them. This enables your shelter to be heated, and you can boil water and cook without having to leave the shelter. For average sized people a 6 ft x 8 ft / 2 m x 2.6 m tarp would probably be adequate. If you are taller, or have young children that are not be able to carry their own equipment, you may want to carry an 8 ft x 10 ft / 2.6 m x 3.3 m tarp. Remember: *make the frame to fit the tarp(s)*. Don't just set up a frame, and then try to get the tarp(s) to somehow cover it. Practice setting up tarp shelters so you can put one up easily and quickly.

- **Cordage** —(the root word here is 'cord'). This is probably one the easiest items on this list to find and make in nature. However, including some cordage in your kit far out weighs the time and effort it would take to make some! 50-100 ft. / 15-30 m of twine it is fairly light weight, relatively inexpensive, and easy to carry. Natural fiber twine will biodegrade if it gets left behind, and if necessary, it can also be used as tinder for fire-starting.

- **Adequate Clothing** —Statistically, whether a person is wearing adequate clothing or not, is the single most important factor determining whether they will live through an actual survival situation. Also remember: (1) that you loose over 70% of your body heat from your neck up, and (2) that you will loose a lot of extra body heat if you get wet. So work toward staying dry, and be sure to include a warm hat, an extra pair of wool socks, and a rain poncho in your kit. Historically it has also been shown that your shoes are the most important item of clothing, as they are what enable you to get around to get everything else you need. So possibly keep your light weight hiking boots next to your 'grab-and-go' pack.



- **Bedding** —Although some type of bedding will probably be the bulkiest item in your kit, it is also one of the most important. Keep in mind that we spend about a third of our time each day in bed, and that a good nights sleep makes a huge difference with just about everything. Choose the thickest wool blanket you can get. Although wool is heavy, it is quite durable, and wool will keep you warm even if it gets wet. It has been said that wool blankets are one of the greatest inventions of mankind —I agree! A military "poncho liner" might be another option. And remember that sleeping bags are just 'glorified blankets.'

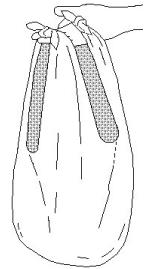
- **Food** —Yes, this is going to get used up, and you will need to get more from nature. But a three-day's supply of food, will give you time to travel

and to find more. Choose foods that are light weight, low in bulk, high in nutrition, and that won't get crushed in your pack. Some examples are: nuts, dried fruits, dried soup mixes, whole grain flour and meal, and salt.

• **Pack** —This may not necessarily be an 'essential' item for survival, but imagine trying to carry all these things without it. Be sure your pack fits *you*.

• **Knife** —This is probably the most important item in your kit. Keep in mind that 'knife' here also includes other sharp edged cutting tools as well. Besides a 'knife' for fine carving and meal preparation, (a 'cutting tool'), you will also need something for more heavy wood shaping like cutting shelter poles, and splitting firewood, (a 'chopping tool'). So, a small axe or hatchet, a machete or 'bush knife,' and a saw, are also included in this category. Everyone should be sure to have their own knife, and at least one of these other 'chopping tools' in their kit. Although it would be too much for one person to carry all three of these heavier 'chopping tools,' it would be nice to end up with each of them in camp, so possibly each group member can carry a different one. Also keep in mind that another important part of this category is the equipment needed to keep these tools sharp. See Ecclesiastes 10:10.

• **Scarf** —This is probably the least 'essential' item on this list. But it is so useful for so many things that it has earned a place here anyway. Scarves can be used for: a towel, washcloth, 'hot pad,' table cloth, head band, head cover, gathering bag, (by tying adjacent corners together), improvised pack, cordage, bandaging, clothing, diapers, etc. Because of this, someone once told me that if they were stranded on a deserted island, and could only have one item, it would be their scarf.



FIELD TEST YOUR EQUIPMENT

Be sure to 'field test' all of your equipment. Remember:
'If you can't make it work in your backyard on a sunny afternoon, you won't be able to get it to work up on the side of a mountain in the dark when it's raining!'

"Put your equipment together as if your life depended upon it —because it just might!"

Proverbs 22:3



1. & 3. Wise peo - ple for - see trou - ble com - ing and a - void it.
2. Water Bot - tle, Cook Pot, Fi - re Start - er, Tarp and Cord-age,



Wise peo - ple for - see trou - ble com - ing and a - void it.
Water Bot - tle, Cook Pot, Fi - re Start - er, Tarp and Cord-age,



B - ut fool - ish peo - ple keep go - ing and s - uf - fer.
A - de - qu - ate Cloth - ing, Bed - ding, Food, Pack, Knife, and Scarf.



B - ut fool - ish peo - ple keep go - ing and s - uf - fer.
A - de - qu - ate Cloth - ing, Bed - ding, Food, Pack, Knife, and Scarf.



Pro-verbs twen-ty - two verse three. Pro-verbs twen-ty - two verse three.
Al - ways keep them in your pack. Be sure to keep them in your pack. Because -

WILDERNESS TRIP ORIENTATION

Below is a list of things to consider and possibly discuss with a group at the beginning of a trip into a natural area. Each item may or may not apply to any particular outing.

1. It is usually best for the group to Stay Together. Definitely don't wander off by yourself. If for whatever reason the group does split up, be sure everyone has a clear understanding about where and when the group will get back together —and stick with the plan!

- Whistle signals work good to help the group stay in touch. Have a signal for 'Here I am/Where are you?' And another for 'Let's get together.' Remember also that three blasts is a recognized distress signal meaning, '*I NEED HELP!!!*'

2. Pay attention to where you're going. Most people get lost because they simply *don't* pay attention. Don't just follow the person in front of you!

- Practice 'Directional Awareness' by always keeping track of:
 - > Where you are,
 - > How you got there
 - > Which way you are going



3. Keep an eye on the Weather. It is nice to know a storm is coming *before* it starts raining!

4. The two most common camp injuries are Cuts and Burns. So be extra careful around fire and when using knives or other sharp edged tools.

5. Find out about any poisonous plants, dangerous animals, local geographic or weather hazards, etc. that you need to look out for.

6. Have an Evacuation Plan in case anyone gets seriously sick or injured.

7. "Pack it in! Pack it out!" —be sure to pack out *all* your trash.

8. "If you don't do it, It doesn't happen!" Everything isn't already set up and arranged for you out in nature. So be willing to do what needs to be done.

- Take care of your own equipment and personal things:
 - > Stay organized, (see 1 Corinthians 14:40)
 - > Keep your things neat, (see John 20:7)

BASIC SKILLS CHECKLIST

(page numbers in parenthesis)

- Memorize the Survival Priorities (4)
- Describe and Practice 'Caretaker Attitude' (6)
- Help build a Debris Hut or group Brush Shelter (8,9)
- Set up and Sleep in a Tarp Shelter (9-10)
- Make a Debris Bed and Sleep on it (9)
- Purify at least 1 quart/liter of Water by Boiling (12)
- Help to make and use a simple Charcoal Filter (12)
- Wash 'Dishes' in the wilds without polluting the water source (13)
- Make and Use a Twig Toothbrush (14)
- Dig and Use a 'Cat Hole' to go to the bathroom in (14)
- Describe and Practice Fire-Safety (14)
- Start a Fire from a small coal using a Tinder Bundle (16-17)
- Maintain a Fire at a relatively constant heat for 45 minutes (15)
- Roast some Root Vegetables on a bed of coals (18)
- Cook 'Survival Stew' over a campfire and Eat it for a meal (18)
- Bake some 'Ash Cakes' on a bed of coals, and Eat them (18)
- Cook some 'Mush' over a campfire and Eat it for a meal (19)
- Parch some Grain over a campfire and Eat it (19)
- Learn 10 Wild Edible Plant in your area (19-21)
- Memorize and Practice the '#1 Most Important Knife Safety Rule' (22)
- Understand and Practice the concept of your 'Blood Bubble' (22)
- Carve a simple Flattened Stick Spatula and use it to Eat a Meal (25)
- Carve and Use a Digging Stick (25)
- Tie and Use a Bowline (26)
- Tie and Use a Sheet Bend (26)
- Tie and Use Two Half-Hitches (27)
- Tie and Use a Square Knot (27)
- Know the 2 main reasons people get Lost (28)
- Set up a Shadow Stick & Determine Directions (29-30)
- Determine the Directions from the Stars (30)
- Describe and Practice 'Directional Awareness' (31)
- Memorize the S.T.O.P. acronym for what to do if you do get Lost (31)
- Put together a Survival Kit and know how to use each item in it (32-35)
- Pack and Go on an Overnight Primitive Campout (37)

