

by Jerry R. Mize





# A manual for completing the task of world missions by Jerry R. Mize

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# Foreword

Every generation has its fads. From music, to art, to fashion, to technology, to whatever other trend might emerge, culture helps define each generation.

There are plenty of trends competing for the attention of today's high school and college students. However, one in particular is timely. Many high school and college students today are fascinated with survival living. There are survival shows on TV, and the theme is reflected in movies. Survival adventure represents a world far beyond the campus and community where most teenagers and young adults live.

So why is survival training a timely topic? For Christ followers, the connection is with missions and the challenge of taking the gospel to the world's last frontiers, a challenge Jesus gave moments before His return to heaven. In the passage He's explaining to the disciples how the game plan will change:

"What you'll get is the Holy Spirit. And when the Holy Spirit comes on you, you will be able to be my witnesses in Jerusalem, all over Judea and Samaria, even to the ends of the world" (Acts 1:8, The Message).

In case the term "ends of the world" doesn't capture your attention, consider the verbiage from earlier Bible translations that say "the uttermost parts of the earth." The gospel of Jesus Christ is for every person on this earth. Unfortunately, not every person has even heard the name of Jesus. By some accounts, more than 3,000 people groups have never heard the gospel. Most of these people groups have an uttermost address.

Why is this important? Consider this parallel verse to Acts 1:8:

"This good news of the kingdom will be proclaimed in all the world as a testimony to all nations. And then the end will come" (Matthew 24:14).

Reaching the uttermost parts of the earth is important because God loves and values all of His creation. Everyone deserves to know the Jesus that lives within you.

The North American Mission Board (NAMB), which has the primary assignment in the Southern Baptist Convention for mission education, has designed the *Last Frontier Survival Manual* to cast a vision among current 15- to 22-year-old students about how God can use them to finish the task of world evangelization.

The Last Frontier Survival Manual will not make its participants experts. That will take much more training beyond this course. However, this course will be one of the most creative missions-learning resources ever made available to Southern Baptists with both practical teaching of survival skills and lessons about unreached people groups. The Last Frontier Survival Manual will expose participants to unreached people groups and how God can use today's high school and college students to prepare for missions adventures.

This course is not for every person in your church's high school or collegiate student ministry, or Baptist Collegiate Ministry. Our recommendation is that classes be limited to about 10 participants. You will need at least two participants of each gender. This course also offers an outlet for people in your church who have survival skills but never get to exercise them in ministry. Please remember that this is not a Campcraft course; it's survival training. Participants probably won't be taking a tent and camping stove with them. They will learn how to survive with minimal equipment, using the elements available to them.

















Once your senior high youth or college group, or Baptist Collegiate Ministry launches this eight-week course, please notify your state or national convention's mission education office. Beyond the eight weeks you spend in this course, the real learning takes place when students participate in a survival practicum. Many state and national conventions have camps that could easily host your students' trial run at testing their survival skills. You can find contact information for each state and national Baptist convention by clicking on partners at the top of NAMB's home page (www.namb.net).

Our prayer is that God will use this Last Frontier Survival Manual to capture the hearts of today's students while challenging them to reach the "uttermost parts of the earth."

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Jerry R. Mize was born in Kansas, raised in Michigan, and finished high school in Alabama. He received an associate degree in electronics from Cochise College in Sierra Vista, Ariz. Later he received his Bachelor of Science degree in technology with honors from Jacksonville State University in Alabama. At JSU he earned Distinguished Military Graduate honors. He is currently near completion of his master's degree in management from Webster University.

He is a former sergeant and now a major in the U.S. Army. He has traveled all across the United States from Washington to Florida and Maine to Death Valley, Calif. He has also spent considerable time in Italy, Germany, Puerto Rico, Costa Rica, and Panama. Mr. Mize has served in a special forces unit, a joint special operations unit, a military intelligence unit, in the 1st Armored Division, and with Air Defense Artillery at both Ft. Bliss, Texas, and the Republic of Korea. Currently, he teaches ROTC, military history, and survival at Jacksonville State University in Alabama. Mr. Mize lives with his wife and two daughters at that same location.





# Getting 'Psyched Up' for the Mission



# Main Survival Point:

Students will be challenged to fulfill the Great Commission by taking the gospel to the most unreached areas of the planet. They will be reminded that despite the challenges, a rock-solid faith can be the most important survival tool.

# Mashco-Piro of Peru

The nomadic Mashco-Piro Indians of far eastern Peru have chosen to live in the Amazon jungles since the late 1800s in order to escape enslavement by rubber barons. Population estimates suggest there are between 20 and 800 members of this people group. One of many indigenous Indian people groups in the region called the "Mother of God," observers and government officials know the least about the Mashco-Piro. Because of their isolation, officials fear for their poor immune-defense capacity against disease and infections. This causes concern about interaction with west-erners, even missionaries. Each day, the Mashco-Piro roam in jungles gathering, hunting, and fishing to survive. Because of logging activity in the region, the resources available to the Mashco-Piro are declining. This forces the Mashco-Piro to compete with other tribes for natural resources and often results in violent clashes and death. Consequently, the Peruvian government now is trying to establish a reserve exclusively for the Mashco-Piro. Described by some anthropologists as nearly extinct, the Mashco-Piro have no gospel resources.

How can you help the Mashco-Piro hear the good news of Jesus Christ?

You've been called into a great mission-to take the good news about Jesus to "the ends of the earth." It's the most important mission you'll ever be on. Literally, eternity hangs in the balance. And it's a mission that's getting more challenging every day. More than 3.5 billion people do not have an adequate opportunity to hear the gospel. Physical barriers prevent many, many people around the globe from hearing about Christ. Hidden away from the modern world by dense jungles, vast desserts, and towering mountains, millions of people cannot even recognize the name of Jesus. And unless someone overcomes those barriers, they never will. One day they'll enter a Christ-less eternity, unless ... someone comes.

That's where you come in. For the first time since Jesus gave us the Great Commission more than 2,000 years ago, no place on earth is out of our reach. More people can travel to more places than at any other time in human history. In fact, the only thing that separates some people around the globe from an eternity with God is your will. Will you go where no one else will go? Will you go to places where you have to make your own shelter and clean water? Will you go to places where there are no maps? Will you go?

Over the next eight sessions you'll learn important skills to help you do just that-go where no one else will go. You'll learn to find food when you have none. You'll make clean water out of dirty water. You'll make fire and perform first aid with few supplies. Why? You're not doing it just for survival sake. It's not to prove your toughness or your strength. Quite simply, it's because to reach the whole world with the good news, we have to go to places that we can't get to easily. We'll have to survive in places where we're not used to surviving. If we are going to reach the world for Christ in this generation, these skills are indispensable.

# First things first

Imagine ... you and several others from your church have taken a mission trip to a remote area in a dense jungle. You're trying to find a small village that has never heard about Jesus. You left the nearest urban area five days ago for what you expected would be a three-day hike. You left with plenty of food and water. Now you're out of both. A few hours ago you left a lot of your equipment behind to lighten the load so you could reach your destination more quickly. Now what?

This isn't a far-fetched situation. Every day, fellow believers must depend upon survival skills as they take the gospel "to the ends of the earth." If you take the Great Commission seriously, you too may find yourself in a similar situation. So what do you do first?

Most people believe the key to survival lies "out there somewhere"-in toppling the next obstacle in our path. But it doesn't. For the believer, survival starts with faith. We must believe that God is worthy of our trust. Your primary weapon against all things good and bad is faith in God. Set yourself up for success by ensuring you have a steely resolve to complete your mission by fiercely believing in the God who gave you that mission. This steely resolve will enable you to survive.

# Keeping your head on

Next, you've got to turn your attention to your mental and physical well-being. Your mental and physical energy are valuable resources. You must learn to manage and control them in a crisis or survival situation. To do that, you must prioritize how you respond and how much effort you expend to meet your immediate needs. In this chapter we'll focus on properly prioritizing your actions and staying in the right frame of mind. But here's an overview of the core principles that should be an umbrella over everything you do in a survival situation.

- 1. Respond purposefully and in a measured way rather than out of fear.
- 2. Use the good sense and judgment that God has given you.
- 3. Do as much as possible to survive. If you have enough rope for four traps, make four traps. If you need to kill a squirrel to eat, then kill it. If it takes two hours to make a shelter that will keep you alive, don't settle for lying under a tree.
- 4. Self-doubt leads to destruction.

To remember the basics of survival, use the following acronym: Faith—Know—LLIVE principle.

# F—Faith

God calls us not to walk by sight, but by faith (2 Corinthians 5:6-8). That command doesn't disappear when we find our survival in question. In fact, faith is where you start in those times. Faith, the simple yet profound act of trusting God, embodies the mental attitude you'll need to make it through. Trust that the God who called you to take this journey will give you all you need as you follow Him. Consider this your "faith fuel," your mental preparation that enables you to continue through testing times and get the needed work done. You may be tired, hurt, and even scared. During these times, you must have faith and uncanny resolve that continually reaffirms that you deserve to live; you deserve the chance to complete your mission. You must believe without a doubt that you will accomplish your goals no matter what is thrown before you. Remember the end result. You're taking the gospel to people who may not hear it otherwise. Once you reach your destination and share the gospel, you'll realize that all the trials have been worth it. Internalize both the statements and feelings above and your own statements of affirmation as spiritual motivators, "faith fuels," to get the job done. <u>Remember, strong faith-strong mind-strong body</u>.

Spiritual preparation will lead to mental preparation. Trusting God in the midst of survival situations will give you the positive attitude that's so critical to your success. As your primary weapon, mental agility and mental toughness will keep you strong, allow you to make good and timely decisions, and allow your faith to shine through to others regardless of your circumstances. The need for a positive outlook, a healthy zeal for life, and a sharp, calculating mind cannot be overstated. Let's use football as an example:

Michael Doe is a six-foot, three-inch, 300-pound offensive lineman who plays on a team from the East Coast. Today he is playing in Arizona, and his family stayed behind because his wife just had surgery. Michael's wife is in both physical and mental pain because of the surgery, but it is not life threatening. He loves his wife, but his job requires him to stay with his team and protect the quarterback and running backs. During the trip, he mostly keeps to himself, unlike the happy person he normally is. He looks out the window and listens to his music. He even lost some luggage because he forgot to put his name on the handle. During the game, he starts off well. He successfully protects the quarterback and opens holes for the running backs to get through. At half time, he borrows a teammate's phone (because he left his at the airport) and calls to see how his wife is doing. She is obviously in pain and crying. The conversation ends with her saying, "I wish you were here." During the second half of the game, he misses a few assignments. The running backs don't get the yardage they need, and the team starts to lose. Finally, he misses a block, and his opponent sacks the quarterback, which causes the quarterback to break his hand.

Michael has all the physical abilities he needs. He knows his job, and he's done it before. However, Michael's mental state causes the harm. His actions did not necessarily affect him, but because Michael is part of a team, his actions hurt the potential success of the team. The same applies to you and your teammates during a survival situation. It is natural to be afraid or to miss family, but you must understand that your reaction to those facts is crucial to your group's survival.

Michael may not have recognized the signs of his downfall, but you can. A person whose mental fortitude is low, could:

- Be easily angered.
- Respond unnaturally to stressors.
- Behave indecisively.
- Demonstrate forgetfulness.
- Display an empty stare or hollow eyes.
- Not care about consequences.
- Show continuous tiredness.
- Withdraw.
- Not take on workload or put forth decreased or minimal effort.
- Worry all the time.

These reactions are dangerous, but two other reactions are even more so: fear and panic. These are listed separately because they are crippling factors that cause unnecessary death and injury.

Fear and panic aren't always bad though. They are God-given and can actually help you in a survival situation by: giving you an immune-system boost, providing extra energy (through adrenaline), increasing blood flow to your muscles, constricting your muscles to prepare them for action, heightening your senses, helping you put "tunnel vision" on the problem, making you more creative, and many other benefits.

But if you're not careful, the negative consequences of fear and panic can take over quickly. For example, take a simple bee encounter. You're at a picnic and a bee tries to take a drink out of your favorite soda can. A few tennis swings, a high jump, and a 100-meter dash get you out of the situation. But a few friends around you may be on the ground-knocked over from your escape attempt, and your food may be in your neighbor's seat, but you are safe. Unfortunately, most bee stings happen that way, and your friends might not take kindly to the bumps and bruises or "extra" food. A slow wave to gently shoo the bee away would be the most effective way to avoid being stung. Below is a list of the negative effects of fear and panic that you need to watch for:

- Poor decision-making.
- Indecision.
- Tunnel vision—Your focus on one problem at the expense of other problems arising around you can be bad. (For instance, knocking over your friends to escape the bee.)
- Physical shutdown—You just do nothing, making no decision at all (i.e., letting the bee sting you).
- Loss of equipment—You leave your backpack, gear, and food just to escape.
- Illness—If overtaken by fear, your immune system can turn off, making you more susceptible to getting sick.

Fear and panic can destroy you and your ability to think through problems. To overcome your fears, you'll need to focus on what you're fighting and living for. Faith is essential. God's perfect love casts out all fear (1 John 4:18). If you can place your trust in Christ as you're trying to survive the wilderness, you'll be able to deal with your fear.

In an emergency, expect fear, but set yourself up to overcome it through a strong faith (spiritual), a positive attitude (mental), and survival skills practice (physical). Preparing yourself and practicing your new skills will boost your confidence. To be ready, you should have a clear understanding of the situation you are getting into and its realistic outcome. Keeping expectations realistic decreases undue stress. <u>Remember, strong faith-strong mind-strong body</u>.

# K—Know

Know your abilities and limitations. Don't kid yourself. If you can't climb a mountain, then don't! If you can't swim, then don't! You have limitations. Never try to be a super-hero; it will get you hurt or killed. Remember, however, while you need to understand your limitations, you don't need to accept them. You are never too old to learn or to get in shape. Take lessons in areas that need improvement, and then improve them. TV shows can help you pick up new tricks, but be wary of "sensational survivalists."

Knowing your capabilities and survival techniques is not enough. You also need to know the area where you will be traveling. This knowledge should include: friendly and non-friendly people, local plants, local animals, terrain, and weather. If you can, try to find out about the area from locals who are more familiar with it. A good question to ask a local is always, "What should I be aware of?"

Also, look for new technology that can help you along the way. The easier your travels, the more comfortable your rest and the less exposed to sickness you are. And, ultimately, you'll be able to share the gospel more effectively with more people. Bringing a GPS, a satellite phone, breathable but waterproof materials, and/or portable water purification can greatly increase your mission's chance of success.

# L—Location

If you have a map, GPS, or other location information, know how to use it. Remember, map reading and direction finding are skills you must practice. If you are in a group, make sure others know where you keep your navigation aids and where you are located on them. If you are using GPS, make sure others in the group know how to use it. Your ability to see the terrain around you and relate it to your map is an essential part of staying on course. Try to plot courses that will take you to water/food sources and are passable by you and your group. Use the terrain to your advantage, such as sticking to roads as much as possible. By using basic techniques, you will know your location and prevent yourself from becoming lost. Keeping tabs on your location is an essential survival tool.

# L-Leadership

Someone must lead. The saying "too many chiefs, not enough Indians" is a crucial truth in effective division of labor and unity of purpose when you're on a trek in the wilderness. Effective leaders give purpose, motivation, and direction to those they lead. For example, an effective leader might say, "We have to get over that mountain to get to the village (purpose). John, you lead the way. Carol, you navigate (direction). A hot meal will sure taste good after today's hike (motivation)." Leaders keep the morale of the group up, and they get things done. It is the job of the leader to determine which tasks need to be accomplished and to ensure all are equally engaged. A good leader can keep the group together and on task during tough times. When tough times come, the leader takes the troubles on and directs the team regardless of outcome. A leader knows survival is an action not a circumstance.

If you are alone, this same "take-charge" spirit will push you through the aches and pains of survival. It will give you direction and motivation to accomplish the tasks needed to keep you healthy and always moving forward. Yes, sometimes you have to lead yourself. Uttering commands and tasks to yourself is not an act of lunacy but a focused, determined effort to get tasks done. Take charge of yourself and lead yourself to complete your mission and take the gospel to those who haven't heard it.

# I—Improvise

Your ability to use what is around you creatively is crucial in survival. We are all accustomed to having even the simplest things available on a whim. Convenience stores and restaurants line every corner in the United States. Unfortunately, a disposable lifestyle can equal a loss of improvisation skills. You must regain those skills and begin to see articles as multi-use. A stick is not a stick; it is a spear for food, a fishing tool, a defensive tool, or a cane for balance when crossing a stream. Learn to improvise. Take every day encounters and try alternative solutions. Remember, as your backpack dwindles, your ability to improvise and make replacement pieces becomes crucial.

# V—Value living

## Value yourself

Are you safe? If not, that is your priority. There is no shame in running away or defending yourself against an angry animal if necessary.

Are you hurt? Remedy it to prevent further injury. Other stuff can wait. Your mission will be long. You have to be physically able to make it the entire way; you don't want to end up in an unfamiliar hospital.

# Value Your Stuff

Take what you need—what you really need—with you. The more you try to take with you, the more energy you'll need to carry it. That's energy you may need for something else. Be constantly aware of your equipment, particularly your special equipment such as a map or compass. Develop an inventory list, and look over it after every stop. This practice will help overcome some of the effects of fatigue and ensure nothing gets left behind.

# **E**—**Environment** (terrain, weather, and nature)

**Terrain** is important because it is where you will walk, sleep, and find water and food. It is important because your terrain may limit some of your options. Terrain also will be a factor in determining any special equipment you must have (i.e. climbing gear).

Weather naturally determines if you'll be cold, wet, hot, etc., but most importantly it determines the clothing and shelter you'll need.

**Nature**. Your ability to use your senses to watch the patterns of animals and insects is crucial. You'll need to rely on these "nature citizens" to help you find food, water, and shelter. They already know the locations of many elements of survival. If you are trying to avoid people, you can still watch their movements to find possible survival sources, since the indigenous people are experts of their surroundings.

# What do you pack?

You'll need to take with you as little as possible to cut down on weight and bulk. How should you decide what to take? The simple answer is ... it depends. It depends on the terrain, weather, mission length, animals you expect to encounter, what you know about what lies ahead, and the ministry items you'll need when you arrive.

When packing, also take into consideration your basic survival needs, such as: food, water, shelter, first aid, navigation, signaling, and tools. We will talk about these basics more in-depth in future chapters, but these thoughts will get us started with our packing.

- Food-The big issues are weight (if you are going to carry it in) and bulk (size). Also, consider the tools you might need in order to gather and cook other food if you run out.
- Water-You'll find water much heavier than you expect. Consider weight and bulk for water as well. If you run out of water, know what you need to get it and the tools needed to make it safe.
- **Shelter**–You'll need to consider weight (if you're taking it with you) and make sure it's the right size and type for the weather. (Places like Africa can have temperature changes of 80 degrees or more from morning to night.) If not carried in, know what you need to make your own shelter. (For the purpose of protection, clothing is included in shelter.)
- First aid-You'll have to take into consideration how much you'll need for breaks, burns, abrasions, skin maladies, etc. Consider the weight and bulk that medical supplies will add. Anticipate what you'll need if you run out of materials and need to make improvised splints and bandages.
- **Signaling**-If you get lost, know what you need to get found with things like mirrors, pen flares, bright clothing, fires, etc.

# Strong Faith Strong Mind Strong Body

# Sample packing list (see photos on page 11)

There is no approved packing list because each individual has different needs and abilities. There are many suggestions for basic survival gear. Here, as a general rule, are some things you can/should take.

- □ Multi-tool—This is the new Swiss Army<sup>®</sup> knife. You can usually find them at big chain stores for around \$20. A multi-tool has pliers, knives, a can opener, etc.
- Lighter
- □ Metal match—Metal bar that can be shaved down with a knife. Take the rounded side of the bar and strike it with a knife to put sparks onto the shavings. It's good in all weather and a good backup for starting a fire.
- □ **550 cord**—This is also known as parachute or survival cord. Get the type that has several smaller cords inside an outer sheathing. This gives you multiple binding materials for the price of one. **Hint:** Use it for bootlaces and to tie materials on tents and other items with it. When you need binding material, take out the smaller cords and use; take the sheathing and re-lace your boots.
- □ Wire—Single strand of picture-hanging wire about 30-feet long. This is for food procurement and other uses.
- □ New three-season foldable tents—Beats canvas and wooden poles any day.
- Dehydrated food (high-calorie)—Foods with no water weight can be excellent when you have a sore back. Caution: If you run out of water and eat dehydrated food without water, the food will pull it from you causing cramps and dehydration.
- Simple metal cup and foldable pan—You need something to cook or reconstitute dehydrated food in.
- □ Water backpack—These backpacks can hold up to 100 ounces of water in a pouch, which can be stored either inside your backpack or on your back.
- Sunglasses
- □ Hat—Round ones are best. Hats help protect you from sun and any falling insects or plant parts. As a side benefit, you can boil water in some of them as well.
- Insect repellent
- Sunblock—You don't use this because "momma said so," but because burns are painful, and they can lead to cracked, raw skin that is ripe for infection.
- U Waterproof bags—The zip and locking type of bags can help you keep your stuff dry and bug free.
- One big, clear trash bag—You'll use this for water procurement (to be discussed later).
- □ Water purification—You can either use tablets or a commercial pump. Pump is most convenient, but it's a little on the heavy/bulky side.
- Signaling mirror—Signal a buddy from a distance for help using a mirror. Try to find a lightweight, plastic one.
- **Whistle**—Use a whistle to get help or signal someone. It's a very lightweight solution.
- □ Flashlight—The LED-type flashlight is now the best. No bulb to burn out, and they use less energy. As you might expect, a good flashlight will be heavy.
- **GPS**—These are very useful if you know how to use them. They are now about the size of a cell phone.
- **Compass**—A compass is a handy backup to a GPS when batteries go bad or satellites can't be found.
- Clothing—Bring bright, durable clothes that fit the terrain/weather you'll be in.
- Sleeping bag—You don't necessarily need a sleeping bag unless probable temperature dictates it. Even so, be aware of the weight and space of the bag. You'll have to carry it!
- Backpack—You'll need one as big as you can handle. Do not go cheap with this. Consider stitching, weatherproofing, material, shoulder strapping, adjustability, and comfort when choosing this vital piece of equipment. This is your traveling house. It has everything you need and the weight that comes with that, so the backpack better be comfortable for all the miles it will be on your back.
- □ Machete—This is the best all-around tool you can have. It is on the heavy side, but for chopping, safety, and building a fire, it can't be beat.
- First-Aid Kit—Choose one with this in mind—the most common problems are cuts, bites and stings, and allergic reactions, both from inhalation (allergies) and from the skin (rashes and dermatitis). You may want to consider anti-diarrhea medicine as well.
- □ **Money**—Even in the wilderness, you'll need money. American dollars are accepted just about everywhere. It may be helpful when interacting with others for necessary supplies or even negotiating treatment.
- □ Manual—Find one of the varied survival or plant and animal books pertinent to your location. An all-purpose manual is the U.S. Army Survival Manual FM 21-76.
- □ Ample supply of prescription medicine—Medicines aren't as easy to get throughout the world as they are here. If you take prescription meds, get your max allotment and more. Give an emergency supply to a teammate as well.

# Week One: Preparation

Those are the basics of survival. We'll get more specific in the coming chapters. **Faith, Know, LLIVE** will be guiding principles that'll impact your whole journey. You can't overestimate the importance of faith and your mental fortitude in your time in the wilderness. Knowing how to turn a bag of leaves into a mouthful of water is useless if you don't have the will to go out and do it. This chapter has been your orientation to techniques and principles for each of our major subjects of: food; water; shelter; fire; navigation and terrain recognition; first aid and prevention; and tools, knots, and signaling. We'll discuss those more in-depth in the following chapters. Pay attention and have fun.









11






# Water, Water Everywhere—But None to Drink?



# **Hung-Tum of Laos**

The Hung-Tum people of Laos (an estimated 500 to 800 people in all) are two distinct ethnic groups. Many feel the Hung-Tum will grow to more than 3,500 as Laos has one of the world's highest birthrates. Hung-Tum women have more than seven children on average. Because the Hung-Tum are remote, small, and speak their own languages, little is known about them except that, like many ethnic groups in their region, the Hung-Tum likely practice a mix of ancestor worship and Buddhism, the dominant religion of Laos. Currently, the Hung-Tum do not have the Scripture in their native tongues, and no Hung-Tum audio gospel recordings exist in their Vietic (a derivative of Vietnamese) language. In a southeast Asian nation that is mostly mountainous and heavily forested, they live in three areas. As an inland nation, few people visit the isolated Laos. However, many who have visited describe it as pristine, serene, and charming.

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How can you teach the Hung-Tum of Laos about the one true God?

Why is it important to keep yourself hydrated? About 75 percent of the human body is liquid—more for those of us with "meat on our bones" and less for those who have "high metabolisms." Water and water solutions are responsible for removing waste and maintaining body temperature. Losing about 2.5 percent of your body weight, about two quarts, can decrease your energy by 25 percent, and energy is necessary for survival. We lose body fluids five ways: perspiration, urination, diarrhea, vomiting, and respiration (breathing). To keep yourself hydrated, make sure you consume at least a gallon or more of water every day. This is a *minimum* requirement. In hotter areas, drink more. (We will talk about dehydration effects in chapter 6.)

# What not to drink

Before we talk about cool ways of finding water and making it safe, let's discuss liquids that we "just say no" to:

- Alcohol—Different cultures may expect you to drink—or at least sip—an alcoholic beverage, so be prepared. However, alcohol, particularly in a survival situation, is a "no-no." Alcohol dehydrates and impairs judgment anytime. The more dehydrated you become, the quicker and more detrimental the affects of the alcohol.
- Seawater—The high salt content causes your body to actually use water to expel the seawater at a rate of two to one. That means every cup you drink takes two from your body to process it. (You can turn seawater to water. We'll learn more about that later in the chapter.)
- **Urine**—Old tales aside, drinking urine is bad. Urine is waste, and the body expels it for a reason. Like seawater, urine can become drinkable water. Urine does have its uses though, and we'll explore that later.
- **Blood**—No matter what you've seen in the movies, drinking blood is not good either. You may have viewed a scene of a cowboy alone in the middle of the southwest, sky ablaze, burnt skin, and peeling lips. Finally, the horse dies from exhaustion and the cowboy drinks its blood to survive. He may have survived, but not because the blood rehydrated him. Blood is actually a food-type substance, and your body must use water to digest it. It does you no good for hydration purposes. The biggest problem with blood is the possibility of contracting blood-borne diseases. Remember that AIDS started as an animal-to-human-contact disease.
- Stagnate/Contaminated Water—Sounds pretty stupid to drink nasty water, huh? Well, when you are thirsty, you might be tempted to make some bad decisions. Unfiltered and unpurified water can carry organisms and microorganisms that bring disease, diarrhea, and even death. Generally, clear, fast rivers have a decreased chance of carrying microorganisms, but they still have a significant chance all the same. Remember that your drinking pool is a fish's toilet.

# Two important rules for drinking water

When it comes to the drinking water you find in nature, it's important to observe these two rules:

- 1. Rainwater collected in containers you know are clean is usually safe for drinking. Purify all other sources of water.
- 2. If you are going to boil water for purification, you must let it boil at least 10 minutes to kill microorganisms.

You may have heard that drinking from the top of a quickly moving stream is safe. That is a myth. It slightly decreases the possibility of ingesting microorganisms but only slightly.

# Finding water

It's common sense to look for streams, lakes, and rivers when you need water, but what if you don't have any of those around? What in nature can provide water with just a little effort? If you watch nature's citizens (animals and bugs) and analyze the terrain a bit, you can find areas of water or moisture to make water, such as:

- Wet spots in streambeds—Wet spots are usually darker than the area around them. Dig up the spot to reveal possible water. (It will be dirty.) Use rags to soak up the water, and squeeze it into a container such as a bottle or a can.
- **Base of green vegetation**—Vegetation needs water. Because of gravity, you usually can find water at the base or lower sections of a water-bearing plant.
- **Rock formations**—Look for water pools in cracks and crevices. Some rocks have holes in them from the physical weathering processes.

- Snow and Ice (Ice is best.)—Many of us have eaten snow and not gotten sick, but keep a few things in mind before you go munching on your homemade snow cone. First, ingesting snow and ice will decrease your body temperature. Melt it first, or even boil it to help warm you up. Second, remember that just because it's white doesn't mean it's pure. Chances are a rodent or other animal has been there before you, so purify it first.
- Insects—Insects need water to live as well. Follow insects and swarms as an indication of possible locations of water.
- Notches—Wood, with all its unique formations, often has unique places that can hold water. Sop the water up or siphon it out to purify it.
- **Green vine**—High water-content vines often grow up trees. Look for a darker vine that reaches far up into the tree. Close to the ground, cut a good notch at an angle out of it. Let gravity work as the water drops fall into your can. You should purify this, but it is a low-risk source.
- **Bamboo (Cane)**—This is actually a grass. Bamboo usually has water in its lower and upper portions. Look for old/cracked bamboo since water can fill those cracks. Again, purify this water because bugs and other critters can invade this plant. You can even boil it in the cane itself, which we will discuss shortly. To get water from bamboo:
  - » Pull down the top of the bamboo.
  - » Bend without breaking the bamboo, and tie it down.
  - » Cut off the tip, and put a drip can underneath it.
  - » Wait overnight.
  - » Purify and enjoy.
- You can also get water by cutting out sections of large bamboo to create a cup. Make sure to cut just below a segment for maximum volume. Stick the cup into the ground to catch rainwater. The water may be bitter, and you will want to watch for insects and other creepy crawlies that may get into the cup. Purify this water.
- **Banana or plantain stumps**—To retrieve water from banana and plantain trees, cut the trunks about a foot from the ground. Hollow out the stump and wait. In a few minutes, the roots will pool water into the stump. The first few fill ups might be a little bitter, but it will soon taste better. It will take longer for the stumps to fill the longer you use them. The usefulness of these stumps is about four to five days. This also works for sugar cane.
- **Dew**—Ever walk through a field in the morning and get your feet all wet? You can use that annoyance to add to your water supply. Tie extra clothing to your legs and walk in the grass in the early morning before the sun is fully up. Ring out the moisture and repeat as many times as needed or available. Boil and enjoy.
- **Stagnate**—This type of water, such as swamps or overgrown ponds, is non-flowing and generally scummy. Filter and purify. Be extra careful because stagnate water has a longer time to incubate microorganisms and other harmful animals and insects that can cause diseases, which we will discuss later. However, water is water and by using the sun and some plastic, we can filter it into drinkable water. We will talk more about solar stills later.
- **Contaminated**—Oily water, sewage, urine, etc. can be filtered through the ground and precipitated onto a condensing bag to get water. There is also the solar-still method we will cover. Basically, if you find water, you can extract it and make it safe.

# How to make stills

Stills use solar energy to create a greenhouse effect that causes plants to release water vapor, which then condenses on plastic, making water droplets. *Warning: Use only non-poisonous plant material.* The poison from plants that cause dermatitis and other problems can end up in your water. You can make two types of stills: **Above around** 

• **Tree bag (a.k.a. transpiration bag)**—Trees breathe! Well kind of. Water vapor is a byproduct of a tree's process of turning CO<sub>2</sub> into O<sub>2</sub>, called transpiration (similar to when we release water vapor from our lungs through respiration). To make a tree bag:

- » Find a low-lying, leafy branch (the leafier the better) at about shoulder level that will be exposed to the maximum amount of sun throughout the day.
- » Take as big of a bag as possible, and place it over those leafy branches.
- » Place a small rock in the bottom of the bag. (Be careful not to puncture or rip the bag, which would lessen or ruin the greenhouse effect.)
- » Tightly secure the opening around the branches with cordage (rope, vine, etc.) so no vapor escapes.
- » Tie a rope on the branch (not the bag because it will rip) just above the bag. Pull down the branch and anchor it to the ground. This allows the condensation to run down to the rock at the bottom of the bag and not out of the opening.
- » You should see the leaves "sweat" on the bag within a few minutes. You will get decent amounts of water down by your rock (depending upon how "leafy" your plant/tree is and how much sun it gets).
- » Untie your still when you get a cupful and empty it for purification. Purification may seem a little too cautious, but remember there are all types of insects and animals in trees. If you need a shortcut for immediate hydration, this has a lower risk for contamination. Still look for bugs, etc. in your water.
- » This method is good for three days, after which you might damage the vegetation and make it inefficient.



- **Vegetation bag**—This is similar to the tree bag. Gather up the wettest *non-poisonous* plant material you can find. Stick it in a bag, put it on a slope, and wait for the condensation to gather. This method will produce the *most* water of the still methods. To create a vegetation bag:
  - » Gather as much green or wet plant material as possible. (Morning grasses with dew are best.) Exclude sticks to keep from puncturing the bag.
  - » Fill about two-thirds of your bag with the vegetation.
  - » Place a rock just smaller than a baseball near the opening.
  - » Ensure the bag is plump with air. If it is not, gather the opening together and blow into it. This helps create the greenhouse effect.
  - » Tie the end securely with a slipknot that will allow you to open the bag and use it over and over. (More on knots in chapter 8.) You have only a limited supply, so treat everything you own like gold.
  - » Lay the bag on a moderately angled slope in a sunny area. The opening should face up but on the downhill side of the slope.
  - » The rock will help condensation stay in droplets and help the bag stay in place
  - » Watch the condensation build and roll down the sides toward the rock.
  - » When a cupful is reached, untie the bag and drain. If you have a straw or similar device, use that to drain the water by tying it in the knot when you start the process.
  - » Use several times and replace vegetation when it becomes less productive.



# Below ground

- **Vegetation**—This is similar to the above methods, but you can use it when you have a ripped plastic bag or a sheet of plastic. Let the ground do most of the work, and use the plastic to condense the vapor.
  - » Dig a funnel-shaped hole in the ground in a sunny but wet area, such as a streambed if possible.
  - » Make the hole about 2 feet deep and 3 feet wide if you have enough plastic. If not, keep the two-thirds rule, according to the plastic you have.
  - » In the bottom of the hole, dig down and place whatever container you have to catch water and push it down securely.
  - » Gather green or wet plant material.
  - » Place the green material in the funnel and not in your container.
  - » Do not overfill it.
  - » If you have a hose or tube, place one end in the cup and the other out of the hole.
  - » Place the plastic over the opening, ensuring that no vegetation touches the plastic. (Vegetation that touches makes the water on the plastic run back along itself to the bottom and not into your can.)
  - » Anchor the plastic along the edges of the funnel with the dirt you dug up at first.
  - » Ensure there are no openings or holes in the plastic since that would allow the vapor to escape.
  - » Place a small rock gently in the middle of the plastic.
  - » The depression of the plastic by the rock should point a few inches down into your container.
  - » The sun will cause the vapor to rise to the plastic, condense, run down to the point the rock makes, and drip into the cup.
  - » Use the tube to drink if you're in an emergency, otherwise remove and purify. This is a low threat for contaminated water.
  - » Use until the vegetation is unproductive, and replace the foliage for continuous use.



- **Seepage**—This is a variation of the vegetation still. Construct this in the same way as you would the vegetation still, but instead of foliage, use contaminated water.
  - » After construction, dig a small trench about 6 inches deep around the plastic but not touching it.
  - » Pour the liquid to the outside of the plastic into the trough but not on the plastic itself.
  - » The liquid will filter and seep into the still.
  - » The sun will cause the vapor to rise to the plastic, condense, run down to the point the rock makes, and drip into the cup.
  - » Use the tube to drink if in an emergency, otherwise remove and purify.
  - » Use continuously.

# How to prepare drinking water

Now that you have water, you must treat it to make it drinkable. How many times have you seen "purify" so far as we've discussed water? Purifying water is extremely important for your short-term and long-term health. First, let's review one of our rules about water: Water should *never* be assumed to be safe for consumption unless it comes from the clouds and into your mouth or a container you know is clean. Why is this so important? Here are some possible diseases and other things you can catch if you don't filter and purify your water:

- Cholera—leg cramps, watery diarrhea, vomiting
- Typhoid—constipation, headache, fever, bleeding in bowels
- Giardia—causes explosive, watery diarrhea and severe cramps for a week or more
- Cryptosporidium—same as Giardia except longer and harder symptoms—no cure but time
- Dysentery—bloody stool, cramps
- Hepatitis—diarrhea, stomach pain—can be spread person to person
- Flukes—small creatures living in mostly stagnant water that get into the blood and cause blood-borne diseases
- Leeches—These pierce the skin to drain blood from the host, and skin breakage of any type could lead to infection. Leeches can latch on the back of the throat if swallowed. They will also cause a point of penetration in your throat leaving it open to infection. Leeches aren't stationary; they will feed and move to another spot causing multiple sources of possible infection.

Scared yet? We will now discuss ways to remove all these "nasties" from your water to make it safe as well as how to minimize risk when purifying isn't an option.

# How to make water drinkable (filtering and purification)

Survival Fact: Boiling suitably clean water for 10 minutes is the best purification method. Survival Myth: Filtering through clothing such as a handkerchief cleans water.

## **Filtering basics**

If the water is cloudy, muddy, stagnant, or smells bad, filter it through a water-filtration device before you boil it. You can buy commercial filters or make your own. For those new to water-filtration devices, here's how they work.

Water filters are usually a porous rock incased in a pump. That's right, your filter actually works by forcing water through a rock with holes too small for all those microorganisms to fit through. Good water passes through; "nasties" stay. Essentially, a hose is placed in the water. The handle is pulled back sucking water into the body of the filter. When the handle is pushed forward, the water is forced through the rock and out a hose on the other side. In many circumstances, companies add special chemical compounds to the rock to help kill microorganisms.

Understand that the basic water filtration devices we will be discussing here only strain debris and small organisms. It will make water more palatable. These filtration devices *do not purify water*; you must *purify the water after filtration*. If filtration is the only method available, wait 45 minutes after filtration, restrain if needed to get the clearest water, and take your chances.

# Building your own filter

# What you'll need

To build a filter, begin by gathering the basic materials needed for any filter. Make sure you have something clean to collect the water once it passes through your filter, or you'll ruin the positive effects of the filter. After numerous uses these filters will clog up, which means they'll not only stop filtering but will actually contaminate the water. Change out filter materials when you see a visible decrease in the clarity of the filtered water or you notice a bad smell.

These materials should be placed in order (from the biggest on top to the smallest on the bottom), using cloth to help separate the layers when possible. These can be in repeating layers of three. Each layer of material should be 2 to 3 inches or more in order to be effective.

Water Tip:

Non-commercial, gravity-based water filtration devices only make water more palatable and strain debris and small organisms. These filtration devices do not purify water; you must purify water after filtration.

- Crushed rock—Takes out bigger contaminates, such as leeches, leaves, sticks, etc.
- Sand—Sand acts as finer filtration for those smaller things, such as small bugs and vegetation pieces.
- **Charcoal**—Just like in your aquarium, charcoal helps with smell and palatability, and it can soak up some chemicals. (Charcoal is a main ingredient in chemical suits used when handling chemicals throughout industry and the military.) Get charcoal from previous forest fires or your own fire.
- Cloth—This can help keep layers intact and is a good filter in its own right.

#### Basic water-filtering systems you can make

You know what they are made out of; now let's figure out how to make them. We will talk about the Tripod, Tube, Hollow Log, Bamboo Pole, Pants Leg, and the Bottle methods of filtering:

- **Tripod**—Like the name suggests, a tripod filter has three sticks tied at the top. It's about as tall as you are and spreads out at the bottom with cloth tied at three positions. Put each of the three filtering elements discussed above on top of the three pieces of cloth. Finally, pour water through. The container at the bottom should collect the now decently filtered water. Repeat as necessary. Remember that although the cloth helps to strain we want to keep the filtering items as clean as possible. We can change out those items without disassembling the tripod; the cloth is what holds it together.
- **Tube / Hollow log / Bamboo pole / Pants leg**—These are simply different methods of building various structures to house the layers of three filtering materials. These usually hang from a tree or a tripod.
  - Tube / Hollow log—Build up the layers within the hollow log (or tube). In this method, you must have or make a cap for the end of these to keep the material from coming out. That cap must have a way of letting the water pass through as well. It may be a securely tied piece of cloth.
  - » **Bamboo pole**—The naturally-segmented bamboo provides a good container for storing your layers of three. You can punch holes to allow leakage in the bottom of each segment. Water may have a slightly bitter taste the first couple of run-throughs.
  - » **Pants leg**—If you can part with a pair of pants, you can simply cut off a leg, tie the bottom, add your layers of three, and tie the top to a branch or tripod. Add water, and filter away.
- **Plastic bottle**—This is the same as the methods just mentioned, but this neat technique has some variation as well. These days you can find garbage just about anywhere, either from storms or plain callousness, or you may have a bottle with you that you can't use to hold water. Regardless the plastic bottle is a good technique:
  - » Take a two-liter bottle and cut the top third off. This will become your filter.
  - » Keep the cap on the bottle
  - » Start with cloth on bottom (cap end)
  - » Add in the layers of the three filtering materials (in order) with cloth in between. Work your way up to the cut end and the gravel-sized rocks.
  - » Loosen but do not remove the cap.
  - » Place the filter, cap down, into the two-thirds of the bottle remaining.
  - » Pour water.
  - » Repeat as necessary until you have decent water for boiling.



**Remember:** The water will never be crystal clear. There will be some sediment in the water. We are straining out organisms and unwanted plant material. Boiling will remove the microorganisms.

# Purifying your water

You've made the water as clean as you can, but you know it's not safe to drink. How do you purify it? You have one of two choices: boil the water to kill any organisms or use chemicals to do the same. Boiling is preferable and is the most effective. Remember, the end result is to get drinking water as clean as possible, so we can hydrate our bodies, boost our energy levels, and get us going on our mission.

# Boiling

You can use a couple of neat tricks to get that water bubbling with steam.

- **Bamboo**—You can put seasoned bamboo near (so it will boil) but not in a fire. The heat generated will eventually boil the water. Make sure to remove any lining inside the bamboo. Water may taste bitter the first couple of times.
- **Hat**—If you have a wide-brimmed hat without holes in it, you can put heated rocks in your water-filled hat until the water boils.
- **Cup**—You could just make it easy and bring a cup you can heat up and boil water in.
- Aluminum—Aluminum is lightweight and foldable. A decent-sized piece of aluminum should have the thickness and feel of a good paper plate and be large enough to bend into a bowl shape. Mold it into a bowl shape and boil the water. Unbend it and cook on it later.



Plastic Bottle Filter

# Chemicals

Don't just scoop up the water and throw chemicals in it. Leeches and the like can still be in the water. Properly filter the water, and then use the chemicals.

- Purification tablets (iodine or calcium hypochlorite tablets)—Use as directed.
- **Iodine**—10 drops per canteen
- **Bleach**—Two drops per canteen

## After purification:

As a rule, let water stand 30 minutes after purification to ensure there aren't any floaties. You'll also want to give the chemicals enough time to work.

Water is extremely important to your survival. Do not be in a rush for hydration at the expense of safety or, as you have seen, the consequences can dehydrate you further. A little work in the area of water will pay off greatly.






# Home Sweet ... Hut?



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# **Baras of Indonesia**

In a nation of more than 13,000 islands stretching wider than the continental United States, it would not be difficult to overlook the Baras people of Indonesia. Located in two villages in West Sulawesi, like most Indonesians, they are Muslim. Because there are only an estimated 300 Baras, some observers fear their language may soon be extinct. There are a small number of Baras Christians, but no known evangelicals and no intentional church planting effort. Missiologists know little about the Baras and welcome additional survey work among this people group.

How could God use you to study the Baras people and develop a strategy for taking the good news to them?

The weather will ultimately determine how much you need to make shelter your priority. As in any situation, set your priorities according to your most important needs. Pretend it's 50 degrees outside and dark clouds are rolling in. You are hungry, and you have blisters. You won't die of starvation right then, and blisters are nature's bandages. You better get covered and warm quickly, or you won't last the night. In those moments, you have no greater priority than shelter!

Your environment and what materials you have will determine the type of shelter you make. The biggest considerations are:

- How much time do I have to make it?
- What weather do I need to prepare for?
- What temperature do I need to prepare for?
- Most importantly, what materials do I have to make it? (You can't make a cabin in an hour with a pocketknife and a few limbs.)

# **Cricket Thermometer**

Trying to see how cold it is or if the temperature is changing for the worse to determine the type of shelter to build? The "Cricket Thermometer" can help. Crickets are cold blooded, meaning their surrounding temperature dictates their movement. If you can hear a cricket chirping, you can tell the temperature. Count chirps for 15 seconds and add 40 to get an approximate temperature in Fahrenheit.

Source: Library of Congress Web site

# An ideal shelter will:

- Help you conserve fuel (energy). A place to rest and stay warm ultimately saves you energy. Shivering can wear you down, as you expend crucial energy and rob yourself of the bodily repair processes that happen while you sleep.
- Enable clothing and equipment to dry.
- Enable you to cook from inside the shelter as long as the fire is controlled. You want to enjoy the fire, not be a part of it. Make sure you have adequate ventilation, and be careful of carbon monoxide buildup.
- Protect you from insects.
- Protect you from animals.
- Protect you from underlying dampness. (You'll need 18 inches of insulation under you.)
- Protect you from precipitation.
- Have a sturdy framework and tight lashings, so it stays intact. Survival tip: Get lashings wet, and make your shelter. The lashings will dry, shrink, and tighten the joints, making them stronger.
- Protect you against wind.
- Give you mental relaxation and a feeling of security.
- Give you a feeling of accomplishment.

# Preparing a shelter location

An ideal shelter must take into consideration proper site selection, comfort, tools, proper site preparation, drainage, ground considerations, and safety:

# Proper site selection

When considering site selection, use WWARMM Water as a guide.

- **W**—Wood Source—Wood is an essential survival ingredient. Try not to waste time with excessive traveling to get wood. You will need a lot of it, so build your shelter in an area close to this precious resource.
- **W**—Wind Direction—Know which direction the wind is blowing and put the back of the shelter against it, keeping the wind from blowing straight into an opening.
- A—Angular—If you are trying to be found, realize that straight lines in nature don't usually exist and will draw the human eye to it. Your shelter sticking out will also help you find it when you return from hunting or gathering water. Angles tie together better as well.

- **R**—Reflective—If you want to be found, make your shelter with bright colors. For warmth, reflection gives the fire's heat something to bounce off of and onto you.
- M—Masked—Use the terrain to block the wind.
- **M**—Minimal—You have limited resources to build and make a fire. Do you want to waste resources on big and spacey or just big enough and low to the ground? Remember that the bigger a shelter, the harder to warm and keep warm. Think of making a shelter like either being in a sleeping bag or being in a cabin. It's easier to heat up a sleeping bag than a cabin.
- Water—Locate your shelter near water sources to prevent long trips and wasted energy. However, don't get too near the water source. You don't want to become part of the water source through potential flooding or animals that inhabit it.
  - » Do not set up in a canyon, flash-flood area, or any area where gravel or rock is exposed due to running water—whether the water is present or not. Storms miles away usually drain and gather strength as they come into ravines and such. You may never see the storm that sends water cascading down onto you.
  - » You like to drink water; so do animals. Animals of all kinds are coming to watering holes— including the animals that prey on them. Pick a place that is minutes, not seconds, from your water and food sources.
  - » If you are trying to stay warm, the movement of the air, the cooler nature of the air temperature around the water, and the soaking mist in those locations will all lead to making you colder and harder to get warm.

## Important shelter considerations

Before building a shelter, consider your own comfort and the tools needed to build it.

#### Comfort

The shelter must be large enough and level enough to lie down comfortably. Rest in a stressful situation helps to reduce your stress level. You need to get as much sleep as possible to maintain your strength and mental sharpness. You have only a few hours of rest a night, and insects, cold weather, nature sounds, and discomfort will awaken you throughout the night. Maximize that time by minimizing your discomfort through building a comfortable shelter. Do this by having a proper fire, clothing, bedding, and the right type of shelter to begin with.

Bedding is probably the most important aspect because the ground will pull your body heat down into it, making you cold. Also bedding "smoothes" out the bumps and irregularities of the ground.

# Survival Tip:

The Behind Scoop. It sounds weird, but it can really help you get comfortable. Your body is not straight. When you lay down what part of your body is impacted most? Your behind. Scooping out a small trough where your hindquarters can fit helps to take the pressure off of there and off of your back. Comfortable means restful.

## Tools

Do you have the tools to build a proper shelter? If not, improvise. You can make tools from materials in the area or with materials from your survival kit. (We'll discuss this later in chapter 8.) Improvise and use what nature gives you, including rocks for pounding, broken and sharp rocks for cutting and chopping, vine for lashing, and big-leafed plants or trees for roofing. If you work against nature, your shelter will fail, and you will have wasted precious time and energy.

#### Preparing a possible shelter site

Before you can build a shelter, you have to prepare your site well. Improper site preparation can destroy all the positive effects of your shelter. Here are a few tips for proper site preparation:

• Make sure your site is free of insects, reptiles, and poisonous plants.

- Remove old material down to soil level if possible.
- If it's not possible to remove material, attempt a controlled burn of the area you will sleep on. You want to eliminate anything, plant or animal, that can harm you.
- Gather materials for the shelter you need first. By gathering beforehand, you may find a shortage in a material, which will cause you to make a different shelter.

Also, take into consideration your site's drainage, the ground, and safety before you start building.

## Drainage

You must also make a path for water to go around you, or it will come inside your shelter. The easiest thing is to remember *not* to build in a place that looks like water goes through it, such as streams, pools, and washes. Here are a few things to look for:

- If you see a long line of exposed rocks that seem like the dirt has been washed off them, you probably are in a wash or flash-flood area.
- Canyons are flash-flood areas. Do not build a shelter in a canyon or any place with walls that you can't get out of in two minutes.
- Make a slight trough about 6 inches wide by 6 to 12 inches deep at the outline of your shelter starting uphill until your trough comes together at the bottom. Continue digging the trough downhill about another 6 feet, so the water runs away from you.
- If you make a shelter with a 550 cord or any lashings, water will run down the cordage and into your tent. Tie a small stick that is about a quarter of a pencil long into the cordage running to your tent. Place it about 6 inches from your shelter. The water will run down the cord and onto the stick, which will drop onto the ground and not into your shelter.

#### Ground

It is extremely hot at ground level in the desert, but you can create a shelter in this environment that is up to 30 degrees cooler by going only 2 feet underground (see belowground desert shelter options later in the chapter). To the other extreme, cold or damp ground will pull the heat away from you or simply keep you wet, which can lead to fungal infections. It is essential to get off the ground by using an elevated bed, like the swamp bed, to stay dry or by building 18 inches of dry material underneath you to stay warm and dry.

## Safety

When building around trees, be aware of limbs, pinecones, and other gravity-induced hazards. Try to use hardwood trees, which will most likely have fewer falling limbs. However, you have to shelter where you can.

# How to build a shelter

So far, we have discussed why we need a shelter and where to put it. The fun part is building the shelter though. Let me reiterate that shelters are built to suit the terrain, weather, available time, and available resources. The following are different types of shelters and how to make them according to terrain, weather, time, and resources:

## Materials needed

There are many materials that go into making a shelter. These materials depend on what you have available or can make from nature. Some of these are:

• **Poncho**—An Army poncho has a hood in the middle of a rectangular, waterproof sheet. This sheet also has grommets (metal rings) on the corners and the middle of each edge. (I always carry two despite the weight.) Ponchos can be stretched or shaped into different positions according to the shelter built.

# Survival Tip:

To increase the size that you can fit into a poncho or material-sided shelter, use cordage to pull the sides out. Condensation builds up in material shelters. When you touch this condensation, it will roll or drip onto you and soak your clothing, making for a cold and miserable time. If using a poncho, pull the hood out a foot or so with the face opening down (so you don't let water in), thereby increasing the size of what you can get into your shelter.

# Week Three: Shelter

If you don't have a hood, try using line attachments without holes. If you want to tie a rope to a piece of material, but there is no hole to do so, you can use a rock to make the attachment. Take a small pebble, about the size of a marble, and place it inside the material. Gather the material up from the outside and pinch it behind the rock. Tie your rope where the pinch is, and the material is now attached.



- Tarp—A tarp is a plain, waterproof sheet of varying sizes. A tarp may have grommets as well. You can use it in the same way as a poncho.
- **Emergency blanket**—This is usually a thin plastic sheet with silver on one side (or maybe both) and highvisibility orange (usually) on the other. You can use this temporarily for shelter, but it tears easily. Don't use it in constructing a shelter, but rather as a sheltering blanket.
- **Thatching**—You may not be able to use a poncho or tarp as a shelter, so you'll need to make your own covering using thatching. Take a piece of wood to use as a beam or ridgepole and run skinnier poles at about a 45-degree angle down and away from your beam. These are your ribs. If your angle is too



shallow, water won't shed and it'll drip on you. If the angle is too steep you won't have enough cover. Weave green vine or rope (try to keep the rope for more important stuff) or other lashing material through the ribs you just laid from the beam. Space these out so you can weave thatching such as leaves and branches into them. Try to find the big leaves on small branches, such as palm and elephant-ear-type plants. Start at the bottom, and make rows with the leaves pointing to the ground and the branches weaved upward toward the beam. Create a shinglelike effect with leaves overlapping those below them. Keep this as tight as possible. Once you've finished, go inside your shelter and look out. Any hole you see looking outside means water can get inside. Go out and thatch that area.

• **Bamboo**—Bamboo is nature's hardware store. There are many uses for bamboo, and that's great for survival. Construct your beam with a piece of wood. Split and hollow out big bamboo. Lay the split bamboo across like ribs with the cut part up. Then place bamboo pieces with the cut side down resting on two with the cut facing up. This works like Spanish tile. Finally, take one piece of cut bamboo and place it as a cap on top of the beam. This drip stick will help keep water from running inside of your shelter and dripping down on you.

# **Survival Tip:**

The thicker you build the walls of your shelter, the more insulating it becomes. A shelter is like a big coat. If you make a shelter out of a windbreaker, it's okay, but that doesn't keep the cold out. If you have a thick coat with insulation, you'll retain more heat.

# **Types of shelters**

## The "Hooch"

This popular method is for sleeping only. The genius of the structure is that it's low to the ground. Wind in your tent means a cold night for you, so a low shelter is good. Also rain with wind will blow inside your shelter, so low again is good. But you don't want to be sucking in plastic all night either. How do you get low and comfortable?

When you make shapes and angles like a roof with the material you are using, you essentially shrink the area of protection that material can provide. Take a handkerchief or a single-ply paper towel and lay it flat. Now trace the outline, pinch the middle, and begin to lift. Watch how you start to lose precious covered space. You want space for comfort and to store your stuff. You also want to keep the wind out, thereby keeping the rain out. You also want the shelter small, so it's easy to heat. The solution—the Hooch:

- Use a poncho (tarp) or two. They will snap together. (Two is probably best.)
- Dig a 6-inch trench where the back will be (uphill and into the wind)
- Lay down the backside of the poncho just in the trench and stake down the holes. This keeps the air out.
- Tie and stake down the other two corners. Prop those corners up with 2-foot-long sticks or to trees that will keep them off the ground
- Use rope to pull up the hoods of the ponchos, or use the rock method discussed on page 28 to tie the ponchos to a tree. (It's like puffing it up.)
- If you don't have branches to tie to, take 3-foot sticks and push up through the hood holes and into the hoods to push them out.
- Finish building a trench around your Hooch, as well as down and away from the opening.
- Insulate the ground. You now have a homemade dome tent.
- Move in.

The length of the shelter must be (and therefore your material must be) at least a foot longer than you are tall. This ensures that your body is covered when you lie inside. The height of the beam or the rope pulling it tight should be just taller than you when you are sitting underneath it.

# Lean-To

The "Lean-To" is the simplest and probably the most commonly known shelter. It is simply a single-sided shelter with its "back" against the wind. Be warned that this is the coldest shelter this chapter will discuss, since there's only one side. This fair-weather shelter is meant to keep mist and light rain off you. You can use any of the techniques and materials we've already discussed to make a side for the Lean-To. Your material should be at least a foot longer than you are tall (so your body is covered when you lie inside). Here's how you make the structure:

- Tie a rope or beam between two trees that are about a foot to 6 feet taller than your material.
- Tie the tarp or poncho as tightly as possible to your support rope or beam.
- Remember to use a drip stick (see page 28) to stop water from running down your ropes and into your shelter.
- If you are using wood or bamboo as your support beam, make sure that the beam will not break under the pressure and weight of the material you will place on it.
- Securely fasten the beam (or rope) to the trees, so it won't slip and fall, which will cause the rest of the shelter to fall in on you.
- You can use plastic or any other waterproof sheet, but you must securely fasten it to the ground. Otherwise, a good gust of wind will take your shelter for a kite and fly it.
- You can use the thatching method here as well; thatching is time-consuming however.
- To increase interior space with tarp, attach a rope to the backside of the shelter, pull it out just a bit, and tie it off.





# Field-Expedient Lean-To and Fire Reflector

You make this the same way you'd make a regular Lean-To. The difference is that you build a rock wall (out of non-porous, non-river rocks or logs) on the side opposite to the material of the Lean-To. (Making a V-shaped wall will improve it even more.) A fire-reflector wall significantly adds to the warmth you get from your fire. A fire radiates in 360 degrees; you get only about 20 percent of the heat from the fire. Putting up a rock wall will take the heat and reflect it back toward you.

# Tarp Tent

The name says it all. This is a tent (with two sides) made out of a poncho. You can use any technique to build the walls. The poncho or tarp should be pulled up in the middle to prevent both sagging and possible waterdripping areas (like our belowground still). A tent offers more protection than a Lean To, and it keeps most water out.

- Tie a ridgepole (beam) to two trees, or simply tie the middle of your material to two trees.
- If you've used a ridgepole (beam), drape the material over the beam.
- Stake the sides down to prevent your shelter from blowing out.
- Make sure to build it with a side against the wind.
- Tie the middle to a branch to ensure that it stays up instead of sags. You can also take a Y-shaped branch and prop up the ends of the beam or rope to push it up. This will stabilize the shelter, especially during high wind.
- Pull out the sides to increase your area inside.
- Consider building a trench to funnel the water away from you.

# Tarp Tent with A-Frame

This is the same as the poncho tent, except where trees aren't available for support, you will use sticks inside or outside to keep the sides out and the middle up. In a sense, you're framing your tent.

## Three-Pole Tarp Tepee

This is used mainly when a parachute or large tarp is available. This shelter is a little more involved and generally won't be used in a survival situation because of the size and the fact larger amounts of tarp usually aren't available. If you have the resources, this is how to build a Three-Pole Tarp Tepee.

- Tie at least three long poles (a little bit longer than your material) together.
- Spread out the poles until you have a good base, or until the material starts to leave a gap at the bottom of the meeting sides when wrapped around the poles.

- As you wrap your tarp around, the two flaps should overlap.
- Tie the inner flap to a pole in the structure.
- Tie the other flap to a pole that is slightly longer than the others you have used.
- Lock the top of the pole in to where the others are tied and move the bottom of the stick to open and close the door.
- You may want to put a fire in your tepee. That's possible, but use dry wood and have plenty of ventilation
- **Caution:** Fires in confined spaces without ventilation can lead to carbon monoxide poisoning and death. Furthermore fires in confined space have a high probability of catching your shelter on fire.

#### **One-Pole Tarp Tepee**

This is the same concept as the Three-Pole Tarp Tepee, except you only will use a center pole to hold it up. Stake down the bottom of the material all around the pole to use as anchors to keep the center pole in place. The pole can fall over on you if not staked down properly or when soil gets wet and loose. Drive stakes deep enough to ensure you don't get the short or long end of the stick.

## No-Pole Tarp Tepee

This is the same as the one-pole version, except you must use rope attached to an overhanging branch to pull the middle up. You won't have to worry about the pole falling on you, but make sure to choose a sturdy limb that can support the weight of your tepee.

#### **Tree-Trench Snow Shelter**

As the name implies, you need a tree for this one. When snow builds up, use the wonders of God's creation to your advantage. Most low-lying, branched trees have space around their trunks where snow doesn't accumulate as much. Pine and fir trees work the best. Their needles stay on all year. (Deciduous trees lose their leaves and offer no overhead protection.)

- Find a fir (preferable) or a pine tree.
- Dig out a pit around the base of the tree but within the overhang of the low branches.
- Dig about armpit deep.
- Insulation is extremely important, so build up the bottom with branches and leaves.
- For greater protection and warmth, find big branches to place over the top of the trench.
- You can also build a fire in this one (covered in a later chapter).

#### **Beach Shade Shelter**

Exposure to sun can be bad for your skin. Blistered and cracked skin can lead to infection. Most beach environments will be a mixture of heat compounded by high humidity. Going below ground instead of staying above offers insulation benefits. It both keeps the sun off you and reduces the heat by as much as 30 degrees. If you are stuck surviving in a beach scenario, you must be able to find wood to make this shelter. You'll also need something to dig with. The other techniques work to help keep the sun off you, but this method will get you cooler as well. Make your beach shelter like this:

- Gather logs that are at least 3 feet longer than you are wide.
- Find a good, sandy place that already may have some shade. Make sure it is not wet or it doesn't get wet because it is below the water table.
- Dig a U-shaped trench in a north/south direction. The bottom of the U is toward the sun. This minimizes direct sunlight on your shelter and the sun getting in through your entrance.
- Make sure it is comfortable and allows your entire body to be inside.
- Build up the sand around your U shape while you are digging. The bottom of the U represents where your head will be.
- Place the logs from one side of the U to the other to make a top over the trench, all the way to the head.
- Leave an opening to crawl into.
- Cover the logs with sand, but keep the opening accessible.
- Place some bedding of leaves or other material in the bottom for comfort and insulation.

# **Belowground Desert Shelter**

Desert shelters work the same way as the beach shelter. In the desert, however, you probably won't have a supply of wood to make your shelter. Construct the Belowground Desert Shelter the same as you would the beach shelter, but use tarps or ponchos instead of logs.

- After you've constructed the U-shaped trenches, put one poncho down like the row of logs before.
- Use the sand to anchor the poncho in place. The sand should be piled at least a foot high on the first poncho.
- Next, create a second layer by putting the second poncho on and securing it as well. Make sure you have at least a foot in between both tarps/ponchos.
- Because the sun hits the first poncho and heats it up, it allows the second poncho to stop most of the rest of the energy.
- The "dead" space between the two ponchos acts like a double-pane window, which is an energy-efficient tool used in housing. This method will also keep you around 30 degrees cooler, similar to the Beach Shelter.

# Hard Desert Shelter

Desert areas aren't always sandy. To create the Hard Desert shelter, use the same methodology as the belowground version, except use rocks or other stackable materials.

- Clear away rocks and pebbles in an area where you plan on building the shelter.
- Make a mound or pillar about 2 feet tall at each of the four corners of your tarp.
- Stretch out the material, place a corner on each pillar, and either secure it with a rock or tie and stake it outside of your pillar. (It is kind of like putting a mattress cover on your bed.)
- Do the same with the next layer, making sure you have about 12 inches in between layers.
- This shelter can take around 20 degrees away from the heat around you. It does, however, allow wind in.
- If enough rock material is available and you have the energy, you can build up the rocks to create insulating sides, which you can then put your double layer on.

## Single Shelter / Debris Hut / Fallen Tree

These are all based on the same idea with a few variations. The premise is to use a fallen tree or a ridgepole that is a few feet longer than you are and put tarp or tree material on it to make a shelter. All of these are designed for one person. It is important that your shelter be a few feet longer than you. Your feet will not go all the way to the end, and you still want your head in the shelter a foot or so in order to protect you. Here are the three with noted differences:

## • The Single Shelter

- » Place a piece of wood a few feet longer than you on a tree and tie it securely or place it on a stump. Make sure the pole is sturdy and not rotted.
- » Put the tarp over the pole in a triangle shape with the wide part toward the stump.
- » Make the top a little wider than your shoulders, so you can move in and out fairly easily.
- » Anchor the sides to the ground.
- » Place insulating material in the bottom.
- » If you have extra material at the opening, drape it over the stump to help in weatherproofing.
- » Attempt to build up a barrier at the opening that you can open and close or quickly rebuild to help keep wind and rain out.
- » Dig a trench around the entire shelter (between you and the tree) so any water may drain out.
#### • The Debris Hut

- » You'll use the same setup as Single Shelter, but instead of using a tarp you will use material you find in the wilderness.
- » The object is to make a cocoon that you can snugly fit into.
- » On the pole, take several sticks and branches and make ribs down the sides that widen out at the bottom to allow you to lie comfortably
- » Place branches with many small limbs on those branches you attached to the pole. This will hold debris.



- » Place debris such as pine straw (for warmth) and leaves (as big as possible to keep out water) on those branches. The thicker the debris covering is, the warmer and drier it will be as well.
- » Place more branches with limbs on to hold the debris in place.
- » Insulate the ground well. (Pine straw is best or Spanish moss.)
- » As in the other shelters, dig a trench to keep water from seeping into the structure.
- » Block the entry. (A backpack and debris work well.)
- » This is the warmest shelter you can make without tools.

**Note:** You can start with the Single Shelter and then add on to it making a Debris Shelter as well, but you will need to put a few ribs in so it doesn't collapse in on you. Doing this will make it very warm and very dry.

• Fallen Tree—Use a tree that has fallen in any of the methods we've already discussed. It just cuts down on the amount of work you have to do on the structure.

#### Swamp Bed

The ground can often be wet and full of creepy crawlies. It is best to elevate your structure when it is so. The "Swamp Bed" is actually less of a shelter and more of a sleeping arrangement. You can use poles or trees for support, but whatever you use, it must support your weight and not crack under pressure (just like you). To create this shelter:

- Cut four support poles using existing trees in the ground (or ones you will place in the ground) to a
  height that will keep you up off the ground and dry according to any geographical differences (tide,
  predicted weather, etc.).
- Poles with elbows work well, as the crosspieces are laid into the elbows and won't need to be excessively tied for strength.
- Securely place the poles (or combination of tree, etc.) into the ground in the outlined corners of a bed you can fit on. Attempt to pound any cut poles first—only dig if you can't pound them in. Pounding the poles dramatically adds strength to the structure. Bamboo is hollow and is a good strong source that pounds in relatively easy.
- Cut poles are long enough and sturdy enough to be securely tied to at the ends.
- Tie or place crosspieces onto the ends.
- Cut poles for the long pieces that are long enough and sturdy enough to hold your weight.
- Place and secure the long pieces on top of the smaller end pieces and the support poles.
- Place crosspieces across the long pieces and secure.
- Line the crosspieces with big leaves to help hold your insulating layer in place. This insulating layer should be enough to allow you to lie comfortably.
- Remember this offers you no protection from the elements.
- If you want to put a shelter over the top of this, you can use any of the techniques we've already discussed by simply tying more poles or longer poles for the supports

#### Hammock

A hammock can also be an effective form of shelter that will get you up off of the ground. Many pirate movies show scenes of bundled canvas hanging and swinging with the waves. If you have material strong enough, you can make a hammock.

- Find two sturdy trees.
- Either:
  - » Bunch and tie the ends of sturdy material, so the ends will not slip off.
    - 1. Tie off between two trees that are farther apart than you are.
    - 2. Hammock will be tight and may hurt your shoulders.

#### OR

»

- Tie corners around tree with a spacing stick.
  - 1. Tie one corner and wrap around the tree so it won't slip.
  - 2. Tie the other corner.
  - 3. Place a 2- to 3-foot stick between the ropes to space out the ties. This will help relieve the pressure on your shoulders.
  - 4. The material must be able to withstand the pressure of your weight, or it will rip.
  - 5. This is like a modern hammock with ropes running through the wood spacers.

Those are your shelter options, from quick to warm and more. Imagination is crucial in building shelters (as well as survival in general). Never settle for the first shelter you build. Constantly improve your shelter during your entire stay. Make improvements according to what you feel as you stay in your shelter and to upcoming weather changes. If your improvements include tearing down and starting over—do it!



# I Have Created Fire!!



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# Yagnobi of Tajikistan

With a name that means "ice river," it should come as no surprise that the estimated 12,000 Yagnobi people of Tajikistan face tough winters. But the Yagnob Valley is not without its warmth. Its "firey caves" of coal deposits have been burning for many millennia. Beyond the physical presence of the "firey caves," the heat source may have been the inspiration for belief in an eternal flame as practiced in Zoroastrianism. Today, the predominant religion in the region is Islam. Many of the Yagnob's neighbors hold them in contempt for being latecomers to Islam (Sunni) and fear that the Yagnobi retain some Zorastrianistic beliefs. Still, even with no map, some Yagnobis have left their cloistered valley and community to make the Islamic pilgrimage to Mecca in Saudi Arabia for the Haj.

Living in tiny huts with rugs of goatskin on their stone floor, the Yagnobis hunker down in their homes wrapped in goatskins and sitting around fires as they wait for the annual winter snows to melt. Similarly, the Yagnobi are waiting for something else, a messenger who can bring them good news of a spiritual eternal flame–God's Holy Spirit.

How can you fan the gospel flame among the Yagnobis and help them learn about the heartwarming good news of Jesus Christ?

#### Why is fire important?

Sounds like an easy question, right? Fire keeps us warm and cooks food! Of course, you are right. Keeping warm, cooking food, and boiling water to make it safe are logical reasons that we need fire, but it has unconventional purposes as well. It can provide an important psychological boost for us. The simple act of making a fire is a significant accomplishment that boosts your morale. Plus, having fire-especially at night-keeps the "boogeyman" away. Fear of the unknown or the prospect of some evil just beyond your reach can paralyze your mind and therefore your body. Sleep is an essential element to the repair of your body and mind. If you are unable to relax and rest, your survival plight is compounded. Fire alleviates that fear by expanding the area you can see and have some control over. Fire also helps with tool making. You may not have tools at hand to make weapons, but by burning the ends of a stick and rubbing it on a rock to sharpen it, you can make a weapon.

#### How can fire be harmful?

- Smoke and light produced from fires can be detected-a problem if you need to keep hidden.
- Fire can cause other fires that can destroy essential equipment.
- It can produce carbon monoxide that can poison you in shelters.
- It can catch you on fire.

#### **Basic fire principles**

To make fire, you must learn two principles: what it takes to make fire and what it takes to build a fire.

#### What makes fire?

To make a fire, you need to understand the "Fire Triangle" concept. The "Fire Triangle" is a combination of three elements needed to make fire: oxygen, heat, and fuel. If any one of these does not exist, fire does not exist. You need the oxygen in the air to burn in a fire. You need heat to get air hot enough to ignite. You need fuel to give off the gases that will mix with oxygen to a point where the heat will produce a sustainable flame.

#### Heat + Fuel = Gas. Gas + Oxygen + Heat = Sustainable Flame.

The only way to learn the correct amount of each of these elements is trial and error. Wet wood as a fuel source is hard to burn. It produces small amounts of flame and heat and larger amounts of smoke. However, it will burn longer. Dry wood produces large flames and a lot of heat. It also gives off less smoke. However, you will need more and more bundles to sustain this quickly burning fire. Below are some positives and negatives of each type of wood:

#### Using wet wood

Positives

- Longer burn time means fewer trips to gather wood.
- It produces more smoke to get found during the day (signal) or help with flying bugs

#### Negatives

- Wet wood produces less heat.
- Wet wood takes longer to start burning.
- The smoke can create carbon monoxide and can kill you.

#### Using dry wood

Positives

- Dry wood burns hotter.
- It catches on fire quickly.
- It means a much smaller chance of carbon monoxide poisoning.
- The fire burns brighter, which may enable you to be found or see at night.

#### Negative

• Dry wood burns fuel quickly. You'll need more wood sooner (and you'll have to gather it yourself).

#### What's needed to build a fire

You need three types of materials to build a fire: tinder, kindling, and fuel. When you use the three materials in the correct order, you can quickly build a fire. If you miss a step, you will be trying to build your fire for a long time. Generally speaking, a log will not be a good choice with which to start a fire. Start with small material that catches fire very quickly, and work your way up until you are at a sustainable level with the logs. The three types of materials are listed below, including what they are and what they look like.

#### Tinder

Tinder is dry material that catches on fire with small amounts of heat, whether from friction or an ignition source like a spark. The tinder must be thoroughly dry to be sure that it can be ignited. Tinder includes things like pulverized leaves or lint. **Examples:** charred cloth, lint, dry moss, dry bark, grass, leaves, crushed pine needles, cattail (fuzz), wood shavings, pitch wood and pine needles, cotton, steel wool (needs 2-D batteries), gasoline, oil, and magnesium shaving.

#### Kindling

Kindling should be just as dry as tinder but a bit bigger. As you add kindling, your fire's heat increases, making it hot enough to eventually burn bigger things. Kindling can be toothpick-sized up to the size of a big pencil, like the souvenir ones at an amusement park. **Examples:** split wood, foam padding, and fuzz stick.

#### Fuel

Also called sustaining fuel, this material burns slower, and therefore sustains the fire for a longer time. (This allows you to do other things instead of constantly putting wood on the fire.) Choose moderately wet or damp wood that will burn without burning up quickly. Fuel must already have a good heat source to start burning. Sticks a few inches thick to wood the size of logs fall into this category. **Examples:** tree limbs, deadwood, logs, split logs, cow chips, moss, twisted grass (grass bundles tied tight to restrict air flow), coal, and fish and animal oils.

#### Fire methodology

You now have the basics of what it takes to build a fire. Once you understand what it takes to create fire, you can begin to quickly make and sustain fire in any circumstance. Before you start building the fire, here are a few items you'll want to consider before deciding on a particular fire-starting method.

- Time—How much time do you have to make the fire and gather materials?
- Tools—Do you have the tools to get the wood you need?
- Terrain—How will the area where you're at (terrain and climate) help or hurt your attempts at making a fire?
- Suitability—Make a fire suitable for your needs. (Don't make a bonfire if all you need is a small cooking fire.)
  - » Site selection and preparation:
  - » Is it protected from the wind?
  - » Is it safe and suitable in relation to your shelter?
  - » Will it direct heat in the direction you want?
  - » Does it have a supply of wood or other fuel available close by?

If you are in an overgrown area or if a lot of plant debris covers the ground, you will want to clear it off to keep the fire from spreading. Clear off a three-foot circle down to soil if possible or at least to where the ground would not burn easily.

#### Survival Tip:

Do not use river rock or porous rock that holds moisture for a fire. Expanding gases (steam) from within the rock will need to escape and cause the rock to explode. Exploding rocks can cause injury, as they become projectiles and produce "mini-grenades."

#### Igniting your fire

After you gather fuel for your fire, you now need an ignition source to get the material to release its gasses, mix with the air, and ignite. The ignition or heat source can come in many different fashions. All of the following methods are geared toward getting a small fire of tinder going, so it can be transported to a fire you are laying nearby (see Fire Laying section later in this chapter). We will discuss two types of heat/ignition sources to get the fire going: the old and new.

#### Old methods

- Flint and steel—Strike a piece of flint or another sharp rock against steel with carbon in it to create sparks. (Stainless steel does not work.)
- Fire Plow—You may have seen this method in the Tom Hanks' movie *Castaway*. You need softwood (found from coniferous trees, like pine and fir) to use as a base with a groove big enough to fit your rub stick. Your rub stick should be hardwood and about 12 to 18 inches long. You also need pulverized tinder to make this work. Before you start lighting the fire, prepare a "fire lay" nearby. This is how the Fire Plow method works:
  - » Place one end of your base on your leg while in the kneeling position or on another surface to create at least a 45-degree angle.
  - » Place the other end on the ground.
  - » At the bottom end, place some tinder in a leaf or other easily lit expedient surface.
  - » Place some pulverized tinder in the groove of your base.
  - » Wrap your hand with cloth or other protective material and place it at the top of the rub stick.
  - » Place your rub stick in the groove, and use the stick to rub in the groove with small strokes to create friction (heat).
  - » Add tinder as needed.
  - » Once tinder smolders and falls into the tinder at the base, blow on it to increase the combustible gas mixture, and heat it until you get a flame.
  - » Place more tinder in the groove until you get a good flame.
  - » Transport flame quickly to the fire pit you've already made.
  - » If the tinder catches fire on the base and not in the pile of pulverized tinder at the bottom, go with it. Put tinder on the base and blow until you get a flame. Then quickly transport it to your fire.
- Bow and Drill—The quintessential understanding of fire making for most, the Bow and Drill method is relatively difficult if you don't practice it. Once you know how to use this method, you can create a fire in under a minute. To do this, you'll need: a softwood board for the base, a carved stick to use as a "drill," a cup, and a bow (stick and string). Put the tinder in a funnel cut in the softwood board and put the drill down into the hole. The cup allows you to hold the drill upright and down into the base without burning your hand. Wrap the bowstring, from your already-made bow, around the drill, and pull the bow back and forth, rotating the drill in the hole (causing friction and heat). Let's break it down:
  - » Find a softwood board. A plank about an inch thick is ideal, if possible.
  - » Find a place at the middle edge of the board about an inch in where you will carve a funnel shape.
  - » Carve out a funnel into the board until you create a hole just smaller than a pencil.
  - » Underneath the funnel at the very edge, make an upside-down "V cut" until you reach the bottom of the funnel.
  - » Make a "drill" from hardwood, about an inch in diameter and a foot long. One end of the drill will need to have a blunt point to it, so it fits into the funnel of the softwood board.
  - » Round the other end of the drill, which will go into the cup you will hold.
  - » Find a cup, simply a rock or piece of wood with a depression in it, to hold the drill. This will protect your hand from heat and keep the drill from popping out when using the bow.
  - » Make a bow out of any green, flexible stick about 18 inches to 2 feet long.
  - » Tie a sturdy string to each end, so there is no slack in the line.

## Survival Tip:

Cordage that is braided or woven together works well for the bowstring, as this "catches" the wood and helps to prevent the drill from slipping during movement.

- » Place a good bit of kindling on the ground, and place a small stick next to it.
- » Place your softwood board over the stick so the kindling and the funnel are on the exposed, high side.
- » Place a foot on the low end of the board to hold it in place.
- » Place the drill into the bowstring and wrap the string around once.
- » Put some tinder into the funnel.
- » Place the blunt side of the drill into the funnel and the rounded side into the cup.
- » Rotate the stick back and forth while pressing downward enough to keep the drill in place.
- » If you hear a squeaking sound, you are doing it right—that is friction.
- » Continue until smoking tinder falls into your tinder wad underneath or creates smoke on your board.
- » Blow the smoking tinder and add tinder until you produce a flame. Long breaths of air work best. Look away and take a breath, then return to the smoke, and blow hard enough to increase the embers but not enough to blow them away.
- » Continue until you get a flame, add tinder, and move to your fire.

#### **Survival Tip:**

Smoke is carbon monoxide, and you will pass out if you inhale it in a large enough amount. Looking away and taking a breath then blowing on the embers will keep you safe. Better yet, try to position your-self so that the wind will blow the smoke away from you whenever you handle a fire.

#### New methods

- Matches—They make waterproof ones, or you can put regular matches in a watertight container, such as a pill bottle.
- Lighter—Even if it runs out of gas, you still have an ignition source.
- Magnesium stick/Metal match—This is a block of magnesium metal you shave into small pieces and then pile together with some tinder. Strike the steel bar to create sparks and watch the magnesium flare to life. This is a great all-weather tool.



- Batteries
  - » Steel wool—Connect steel wool to the ends of 2D batteries that are connected, and the steel wool will spark and glow. Blow on it and put on other tinder to start your fire.
  - » Wire—Using any battery, connect two wires to opposing terminals. When touched together the wires create sparks that can catch dry tinder on fire or make it start to smoke. Make sure wire has an insulated coating so you don't electrocute yourself.

- Convex glass—Burned ants as a kid? It's not the nicest thing to do, but it would have been good practice for survival. Focus curved glass (eyeglasses, magnifying glass, or other material) so that as the sun hits it, it will focus a beam onto tinder. Wait for the smoke, and blow until you get a flame.
- Convex can—With a glass, you focus light through it; with a can, you reflect the light to focus it. Make sure to make the bottom of a can nice and shiny by using sand to "polish" it. Set tinder at the base of the can where the light will be focused. If the sun is strong enough, it can create enough heat to start the material smoking.

#### Types of Fires and Uses

There are several methods for laying a fire, each of which has advantages. The terrain, weather, and materials available will determine which fire to use. Practice laying fires (not just starting them) in order to be prepared no matter which method you may need. Below are some basic techniques and tips for different situations:

#### Терее

As you may guess, this one is wide at the base and narrow at the top. This is the common, all-purpose method of laying a fire. Take tinder and place it in a fire ring. Build a small tepee with small kindling. Continue to lay slightly larger kindling around the tepee. Do this about three to four times. Once you transport your burning tinder, put it on the tinder in the middle. Each layer should "catch" as the fire gets hotter. The specialty of this method is that it is self-feeding because the wood will fall in on itself. It also helps to keep all the wood and coals together. Place fuel (bigger pieces of wood) on the fire in successively bigger sizes as the fire gets hotter.

#### Shelter

Remember the One-man Shelter? This is the same thing, except you push a stick in the ground at a 45-degree angle pointing into the wind. Lay kindling down the sides as you did for ribs in the shelter. Place tinder inside the shelter down toward the point. Light the tinder and continue to add bigger and bigger kindling until you have a decent fire. This method helps to blockwind on the one side and allow air on the other.

#### Platform

This is more of a method of keeping a fire going than making it. Use this particularly when there is snow and maybe even a swamp. Your goal is to make and maintain a fire in snow without melting the snow and thereby extinguishing or preventing you from starting your fire. Use two layers of wet or green logs. Build one layer on the snow and the other on top of that layer at a 90-degree angle. The platform should be about a foot thick or better to keep it from burning through or heating up below it. You can now use a fire-producing method of your choice to create a fire on top of it. You are insulating the fire from the ground so it can stay lit.

#### Pyramid or log cabin

This method will lead to longer-lasting fire that provides moderate to low warmth.

- » Lay a few logs at the base.
- » Lay smaller logs, both in diameter and length, on top of the base logs and at a right angle to them.
- » Continue making layers a few levels up.
- » On the top level, place or create a fire using a method of your choice.
- » This will sustain your fire overnight by burning slowly through the smaller layers to the bigger ones. The logs will still burn, but as the diameter increases, they will burn more slowly.

#### Dakota Fire Hole

This does not necessarily provide warmth, but it is a great method for cooking, and it stays lit in high winds. Dig a hole a few feet down, making the hole big enough to build a fire within. Then, make a connecting hole a few feet away for air to flow into. You can dry clothes and cook food over the fire. This also works if you don't want your fire to be seen.

#### Trench

Create an X in the ground a few feet each way and about 6 inches deep. Use your favorite method for creating fire in the middle of the X. This method will get more air to your fire.

If time allows, construct a firewall using logs or rocks. This will help to reflect or direct the heat where you want it. A fire reflector will also reduce sparks flying out onto the ground around you reducing forest-fire hazards. However, you will need enough wind to keep the fire burning and to keep yourself from asphyxiation.

Those are the basics of starting and maintaining a fire, as well as its uses. Fire is usually needed, so be on the lookout for items that nature provides during your travels, or better yet, bring a few of these things along to ensure you are prepared. Fire keeps you safe on the inside by boiling water, providing heat, and cooking food. Fire keeps you safe on the outside by keeping wildlife and the "boogey man" away.

As we wrap up this chapter, here are a few reminders to help with fires along the way:

- Before you leave, ask locals about tips and techniques they use to make fire.
- Try to cover dried wood to keep it dry.
- Adding some sunscreens and insect repellent can increase the flammability of your tinder.
- Keep wet wood next to your fire to help dry it out.
- Wood picked up off the ground is usually either rotten or very wet.
- Watch your fire. If you are leaving for good, make sure it is completely out. If you are leaving for a while, try to "bank" (cover the logs up so they smolder and don't burn up) the fire so you can restart it upon return.
- Be on the lookout for fire-building materials along the way.



# Supersize That #3 Squirrel Burger Please!



# Ik of Uganda

In the mountainous region of northeast Uganda, an estimated 6,500 to 10,000 lk people, also called Teuso, have a precarious existence. Traditionally the lk people group have been hunters and gatherers. In recent years they have become survivors due to violence, famine, and relocation. Surrounding them are people groups who routinely raid the lk and steal their cattle. Consequently, the lk rarely own cattle and cluster in small villages with protective walls to keep out invaders. Recent visitors to the region reported deprivation among the lk and evidence of social injustice suffered by them. The lk seemingly have chosen an isolated existence in the mountains as their best path for survival.

Despite—or perhaps because of—their hardships, the Ik have been open to the gospel. An estimated 100 Ik are Christ followers. Still, they do not have the Bible, the "JESUS" film or gospel recordings in their primary language.

How can the gospel be fully expressed among people who are isolated and oppressed?

# **Disclaimer:**

As discussed in our first chapter, survival is serious stuff and can sometimes seem brutal. You need food. Manna from the sky is not an everyday occurrence, but God still provides. He has given us food sources to keep us alive. The act of gathering food is messy; that is just the way it is. You have a mission to perform, and God has given you all you need to make it. Be as humane as possible, but get over your preconceptions and sensibilities. You must survive.

## **Finding food**

Food is what gives you your energy for physical exertion. People have lived for about a month without any substantial food. However, they often saw things and had full conversations with themselves. Food is important. It is not as important as water, but you do need it to be active and mobile in your survival effort. The simple ingestion of food can cause dehydration, as your body needs water to break down and digest what you've eaten. Make sure you drink as you eat. If water is scarce, eat minimally until you get more water, as dehydration leads to mental decline and system shutdown.

Finding food is only beneficial if you take the time to acquire and prepare it properly. Uncooked food can produce the same problems discussed in the earlier lesson on water. You must properly cook food to remove blood-borne and other diseases, as well as microorganisms. Many animals have disease-borne bugs on them. Ever heard of the Bubonic Plague? Cuts on your skin, the inability to properly wash your hands, an already depressed immune system from poor nutrition, and other problems are avenues for disaster. Poor sanitation can be mitigated with some smarts, such as using a stick or skewer to handle raw animals until you can cook them. Do all you can to keep safe when handling your food.

A knife is indispensable when preparing traps and food for cooking. If no knife is available, take rocks (usually metamorphic or igneous) and break them into sharp pieces. (We will cover this more in chapter 8.)

There are too many plants and animals to name in this chapter, so purchase a reputable edible plant book to review for your area. Talk with locals about what is plentiful and easily acquired in the wilderness. When in the wild, watch the animals around you to lead you to sources of food and water.

Survival Tips: Not all plants that animals eat are safe for humans. It is a good indication of what you may try, but many animals have specialized mechanisms that allow them to digest the food they eat.

Use hardwoods, such as hickory, to cook in a direct flame. Wood with sap, such as pine, will stick to food and cause it to taste horrible. From here on, we will discuss land and air animals, traps and snares, water-borne food and traps, insects and worms, and wrap it up with plants (no pun intended).

#### Procurement of land/air animals

Plants are usually all around us, so why can't we simply live off of them? Plants are good because they usually hydrate as you eat them. There are plenty in most circumstances and can certainly fill you. Unfortunately, you won't always find edible plants. Plants don't contain protein, but animals do. You still need a balanced diet in a survival situation, just as you do at home. Animals also provide the best food source, pound for pound. Furthermore, you need to do everything you can to survive, including making traps, gathering plants and seeds, etc. This means you should not rely on a single food source.

When choosing an animal as your food source, concentrate primarily on smaller animals. Small animals are easier to catch, more plentiful, and less dangerous. In a survival situation, the most important thing isn't the ability to catch animals, but the willingness to eat things you would normally feel "icky" about eating. Squirrels, snakes, crows, and other non-traditional foods are still food and should be considered for nourishment. Remember, your health is important, not your sensibilities.

#### Survival Tip:

Like water, some animals can be eaten raw. Like water, if not made safe, you can catch diseases or maladies that will make you miserable or even kill you. Cook your food the best way you can so you remain as healthy as possible.

## Catching food

To eat meat, you must first find it then catch it. You can use a variety of techniques that date back thousands of years to get food. We will discuss making a noose, which is used in most traps or snares to catch and hold animals. Then we will discuss the techniques themselves. The practices of food procurement are:

#### Hunting

The average person has little to no skills in hunting animals these days. Hunting takes practice, knowledge, improvisation, and creativity. We will discuss weapons in another chapter, but take time to think about what you want to kill. Once you realize what you want to hunt, the weapon or method needed becomes more apparent. Hunting has advantages and disadvantages, and the method you choose should take them into consideration.

#### <u>Advantages</u>

• You are close by to ensure a catch.

#### <u>Disadvantages</u>

- Animals have good sight and smell, which makes it tough for you to hide.
- Hooves, horns, and tusks hurt. Hunting at close range or hand to hoof or paw poses danger.
- When you are hunting, you aren't tending to other needs like fire and water.

There are basically three ways to hunt, and all have their advantages and disadvantages as well:

#### Blind hunting, stalking, and flushing

- Blind, or still-hunting, involves hiding behind objects or in trees in an area you think an animal will approach. Wait with whatever weapon you have, and kill the animal once it gets close. Baiting an area improves your chances of catching an animal. You'll want to exercise caution. The animals you catch may fight back, so choose an animal you can kill with one swift blow. The disadvantage to this method is that you have to wait awhile to catch your lunch.
- Stalking is actively looking for an animal, much like lions do in the nature shows. You find and kill your food. This method is primarily used when you want to follow signs of animals such as droppings, paths, bed-down areas (places where animals sleep), or tracks and attempt a surprise attack. The same cautions apply here as well.
- Flushing uses others to move an animal into a trap or into an area you have set up as a kill zone. Using
  natural obstacles helps to funnel the animal to your kill zone. Set up sticks and rocks to force a creature
  toward you, or use natural canal-like terrain such as a dry streambed with high sides. This method puts
  the animals on alert and can force them to your kill zone, but because they are on the alert, they probably won't stop for anyone or anything.

#### Traps and snares

Traps and snares are mechanisms that close around part of an animal and either strangle it, hold it in place until you can kill it, or set off a mechanism that will kill it. These mechanisms vary from simple to complex, so remember that your objective is to get food, not to show how well you can make a trap. Keep in mind:

- What you are hunting, what type of animals they are, where they are likely to be, and what hazards they pose.
- How much time you have.
- What material you have to catch them.
- That you need to handle your trap gently and tread lightly upon the area you set it in. Most animals have a good sense of smell, and the more you handle your traps, the more of your scent you leave.
- That you need to be familiar with the habits of the animals you hunt.
- That you need to look for trails and signs. Nests in trees, partially eaten acorns or other foods, scratch marks, and prints are signs that suggest you should set up a trap or snare in an area.
- That the more traps and snares you set, the more likely you are to catch something.

• That hooves, horns, and tusks hurt. Hunting at close range or hand to hoof or paw is dangerous, so make a trap you don't have to stay near.

Here are the advantages and disadvantages of using traps and snares:

#### <u>Advantages</u>

- You are distant, so your smell won't interfere with getting the animal.
- You are free to do other things while your traps work by themselves.

#### **Disadvantages**

• You can't personally ensure a catch.

We will discuss a few traps and snares. Practice them, and create your own variations of each. Practice makes perfect. The types of traps and snares we'll talk about are: noose, Simple Snare, Drag Noose Snare, Twitch Up Snare, Squirrel Pole, Ojibwa Bird Pole, Paiute Deadfall, Figure 4 Deadfall, Bottle Trap, and Bow Trap.

#### Making a noose

First things first. You must know how to make a noose in order to snare and hold things. The preferred material is usually a single strand of bendable picture-hanging wire. Picture-hanging wire is strong and will stay in place. If wire isn't available, 550 cord works well for most applications. To make a 550 cord hold a shape, soak it in very muddy water before making your snare. As the noose dries, it may retain its shape (you'll understand why keeping shape might be important in a bit). Here are two methods to try when making a noose:





- Pass Through—Take your material and tie or twist a loop in one end, then pass the opposite end through it.
- Loop in a loop—Place your wire so it makes a loop, bring it around to the top again, and tie it off. When pulled, it will tighten where it crosses around the object.

#### Simple Snare

As the name implies, it is a snare and quite simple. Find a good location to place a snare (usually around a burrow hole). Place a stick about a foot away that will not pull out or one that is already there. Tie your noose to the stick and loop it over the hole. Make your noose big enough for the animal's head to pass through but smaller than its shoulders. As the creature comes out of the hole, the noose will tighten at the shoulders; cause the animal to panic, hopefully strangling it. Note that this snare can sometimes allow the animal to back out and escape.

#### Drag Noose

The Drag Noose Snare should be pulled behind an animal to choke it or to snap its neck once the stick the noose is tied to gets caught. The drag noose relies on a trail or other animal patterns to make it effective:

- 1. Find a trail or signs of animal crossing.
- 2. Place two Y-shaped sticks that are taller and just a bit wider than the intended target. The Y sticks should face each other with the arms pointing up.
- 3. Find a sturdy stick about 18 inches long, and tie a noose onto it.
- 4. Hang that sturdy stick across the Y sticks and allow the noose to hang close to the ground. Make sure the head of your prey can pass through the noose but not its shoulders.
- 5. Create a funnel with sticks on both sides that get increasingly bigger as you move away from the snare. These sticks should be pushed into the ground, preventing the intended creature from passing through them. Creating the funnel increases the probability of the animal coming into your snare.
- 6. Wait.
- 7. Once the animal is snared, the sound of the stick the noose catches on will cause it to panic and the noose will tighten. This will eventually kill the animal. The stick may also get stuck as the creature is running. Once the stick stops, the inertia of the animal continues and may break its neck.
- 8. Approach the animal carefully and make sure it is dead with a solid blow to the head.



Twitch-Up Snare

#### **Twitch-Up Snare**

This is what everyone imagines when envisioning a snare. How many comedies have you seen where a guy steps in a loop and before you know it, he's upside down? This, as well as the Treadle-Spring Snare (which this book won't cover, but you can discover on your own), spring into action and hold an animal off the ground. The Twitch-Up Snare is relatively easy to build, but it requires patience to make it work. In a nutshell, you'll need two sticks opposing each other-one in the ground and one tied to both a sapling and to a noose. The two sticks will barely hook onto each other. When an animal pulls the noose, it will pull the stick off of the one in the ground, releasing the tension and pulling your animal into the air. Here are the steps:

1. Find a sapling about an inch or two thick along an animal trail or an area with a lot of animal activity.

- 2. Find a sturdy stick that 1) you can drive into the ground and 2) has a smaller branch coming out of it near the thicker end.
- 3. Trim the smaller branch coming from the stick (that will be your "hook") down to about an inch (see photo). This stick will anchor into the ground.
- 4. Find another stick that is 1) a bit smaller that the first and 2) also has a branch coming from it. Trim the smaller branch down. This will tie to the sapling and the noose (see photo).

- 5. Tie a 550 cord to the sapling and to the end of the stick that doesn't go into the ground. Tie the stick at the end, away from the base of the smaller branch. Make sure you can pull the rope down about 3 feet or more without too much or too little tension (too much will launch your animal across the woods, too little and it might not spring properly or hold the animal off the ground).
- 6. Tie a noose onto the lower end of the stick that is tied to the sapling (see photo).
- 7. Pound the stake just off to the side of the middle of the trail.
- 8. Standing to the side of the snare, pull the rope down with one hand, and barely attach the stick underneath the notch at the stake.
- 9. Slowly let go, putting tension on the noose stick. Be prepared for it to slip off, so don't lean over it. Stay to the side.
- 10. Reattach as necessary until it barely stays on.
- 11. Ensure your noose is on the trail.
- 12. When an animal passes through the noose and gets stuck, it will pull the sticks apart and be pulled upwards.
- 13. Ensure the animal is dead by applying a forceful blow to the head.
- 14. To improve your chances, set up a funnel on both sides just like the Drag Noose Snare.





#### **Squirrel Pole**

The Squirrel Pole can be your best meat-producing snare. It requires wire though or, at least, nooses that retain their shape. As with any trap or snare, site selection is important, so look for nests in trees and food pieces on the ground. If you wake up early enough, sit in an area before sunrise within the first hour of daylight, so you can discover where the most animal activity is located. Keep still so you can observe how nature runs, but don't fall asleep. To make this snare, or set of snares, you need a pole about 8 feet long. Set the pole against a tree at a steep angle that an animal might prefer to scramble down rather than the tree. Place numerous nooses on the

# Week Five: Food

tree, tie them underneath the pole, and loop each noose back to the top. Tying underneath and looping allows a snared animal to hang from the pole without climbing back onto it for a possible get away. Alternate which way you come up from under the pole to maximize the chance of catching a weaving animal. Let a dead animal hang for an hour or so to entice other animals to check out what is going on and get caught as well.

#### Ojibwa Bird Pole

Named after Native American people (also called Chippewa), this is a snare meant for birds. This fairly simple snare requires a slender rope (550 cord guts), a small perch stick, a rock, and a small tree. The tree should be "topped," making the perch its only "branch." A rope with a snare and a knot tied in it passes through the tree or a stick you have drilled and attached to the tree. That rope is attached to a baseball-sized rock that dangles several feet down but has at least three more feet to drop. A knot in the line close to the noose will help wedge the stick into the hole. You need the perch to fall away, so don't wedge the stick into the tree. Let the knot do the work instead. Set the noose on top of the perch stick. Once a bird lands on the precarious perch, it falls, releasing the rock and pulling the noose around its feet and into your tree. Ensure the bird is dead, and get ready to clean it.





#### Paiute Deadfall

Named after Native American people as well, this trap uses a leverage system. Place a heavy rock about the size of a ream of paper or a bit bigger at one end of a lever system. Use a vertical stick to hold the lever up, and tie a string attached to a different small stick around the vertical stick. To hold the string stick in place and prevent it from unwinding, wedge a long, small bait stick under the rock and on the string stick. Keep the bait stick close to the rock, and make sure it has food on it. When an animal tries to take the food, the stick will slip out and release the string stick, thereby releasing the lever and allowing the rock to fall down. Here it is step by step:

- 1. Find a fairly flat rock a bit longer than the size of a ream of paper that weighs about 10 pounds.
- 2. Find a stick that is slightly shorter than your rock and about three-fourths of an inch thick. This is your vertical stick.
- 3. Find another stick that is about three-fourths the size of the vertical stick and half-an-inch thick. This is your lever stick.
- 4. Find yet another skinny stick about three-fourths as long as your rock. This is the bait stick.
- 5. Chew or mash some food into the end of the bait stick. (You want the animal to work at it to pull the stick away-not leave with a free lunch.)
- 6. Get some 550 cord about 12 inches long.
- 7. Find a half-inch thick stick about 3 inches long
- 8. The half-inch stick and 550 cord will be the string stick. Tie them together.
- 9. Tie the string stick to the lever stick end.
- 10. Place the vertical stick at one end of your rock.
- 11. Lift the end of the rock.
- 12. Place the very end of the non-tied side of your lever stick on top of the vertical stick with about 1 inch or so hanging.
- 13. Place the rock on this hanging part.
- 14. While holding these in place, wrap the string stick around the middle of the vertical stick.
- 15. Place the non-food end of the bait stick on the side of the stick trying to unwrap itself back around the vertical stick.
- 16. When viewed from the side, the mechanism should look like the number "4."
- 17. Wedge the bait stick lightly under the rock.
- 18. Slowly let go.
- 19. Re-wedge as needed.
- 20. Wait and retrieve when tripped.

#### Figure 4 Deadfall

This trap runs along the same principle as the Paiute Deadfall, except without the string. This trap requires three sticks; the vertical stick that holds everything up, the lever stick that holds the deadfall up, and the bait stick that is the trigger mechanism. If you have ever played with Lincoln Logs<sup>®</sup>, then you have a good idea how this will fit.

- 1. Take a stick about a foot long and cut a straight 45-degree angle off the top. This is your vertical stick.
- 2. Cut a square section in the stick about halfway down and only halfway through it.
- 3. Take another foot-long stick, and cut one end narrowly so you can put mashed food into it. This is your bait stick.
- 4. Cut a square notch that will fit and match the cut in the vertical stick half way down.
- 5. About an inch in from the uncut end of the stick, notch out another square halfway through the wood, but leave a bit of a lip as you cut the end that is toward the non-pointy part of the stick.
- 6. For your lever stick, cut a stick that will run from the end of the bait stick to about 2 inches past the top of the vertical stick. Cut one end at about a 45-degree angle and match it to the end of the bait stick, so it fits and catches underneath the lip you made.
- 7. About three-fourths of the way up the lever stick, notch out an angle that fits the top of your vertical stick.
- 8. Place all of the sticks together, making a "4" pattern (just as is typed here).
- 9. Lay your deadfall on the lip of the lever stick at the apex of the 4.
- 10. Wait and watch.

#### **Bottle Trap**

You can eat things like scorpions and other creepy crawlies, and a bottle trap is a good way to get them as well as small animals. To make a Bottle Trap, scoop out a hole in the ground in the shape of a bottle where the bottom is bigger than the top. Place a heavy rock or logs across the top, covering the entire hole but leaving enough room for your soon-to-be food to squeeze into and fall down. The "roof" keeps your food from having enough space to crawl back out. Bait this if possible, but it may very well work without bait.

#### **Bow Trap**

This is effective against bigger animals, such as a pig or small deer. A bow trap uses a trip line to release a trigger that causes the bow to fire its arrow or spear.

- 1. Make a simple bow out of 550 cord and a sapling.
- 2. Along the side of a trail or other high-use area, drive two sturdy stakes firmly into the ground about a foot apart and leave a few feet of the stakes exposed.
- 3. Place two more stakes firmly in the ground a few inches apart. Make sure they are centered behind the bigger two stakes and back as far as the pull of your bow. Leave about 6 inches of these stakes exposed.
- 4. Place one more sturdy stake centered and a few inches behind the 6-inch stakes, also leaving 6 inches exposed.
- 5. Make your bow.
- 6. Tie your bow to the stakes so that the stakes are on the inside of the bow and the outside of the bow is horizontal to the trail.
- 7. Make an arrow (or more like a spear) for your bow.
- 8. Tie 550 cord to the end of a stick that is as long as the distance between the 6-inch stakes and the single 6-inch stake. (This cord will run around to the game trail and be tied off, serving as the trip wire.)
- 9. Caution: Tie the 550 cord across the trail and run it back to the trap before you set up the mechanism. Serious injury can occur if you set off the trap prematurely.
- 10. Place a routing stake one foot to the side of the 6-inch stakes.
- 11. Route your trip wire from the tree around this stake. This will ensure that the trigger is pulled away correctly.
- 12. Place a sturdy stick across the two 6-inch stakes on the side away from the trail. Hold in place or tie it if possible.
- 13. Place a sturdy 4-inch stick centered, behind, and perpendicular to this horizontal stick.
- 14. Pull the bow back, catch the string on top of the 4-inch piece, and hold the string in place.
- 15. Place the trigger stick with the trip wire at the bottom of the 4-inch stick and against the 6-inch stake.
- 16. Gently release and remake as necessary.

#### Survival Tip:

If you are using green wood for bows, remember that it tends to bend out of shape over time. Recheck your traps daily to ensure they work properly. Surgical tubing is lightweight and strong–an excellent choice for many of your tension-bearing mechanisms.

#### Finding/catching food in the water

Fish are an excellent source of protein, and in certain situations, they are plentiful. Fish also contain beneficial oils that can energize a weakened body. Before discussing how to catch fish and other water creatures, you need to consider the edibility of different fish.

Edibility of fish is important. Do not eat fish that seems spoiled. For the most part, fish are edible, but cook them to ensure no parasites or other organisms exist. Always cook freshwater fish and those caught within a few miles of the coastline, as the organisms that live in freshwater often attach themselves to fish in these areas when they are flushed into the ocean. You can eat deep-sea fish raw if they do not have poisonous flesh, as parasites and other organisms do not live in pure, salty ocean water. Here are some, but not all, of the saltwater fish with poisonous flesh and some details about their appearance.

- Thorn Fish (thorn on top of its head, small mouth, and single spine longer and trailing on top of its dorsal fin)
- Trigger Fish (mouth marking the trail under and behind its small fins)

- Puffer Fish (puffs out like a balloon)
- Porcupine Fish (same as puffer, but with spines)
- Jack (rounded top of a head with a flat mouth at the very bottom)
- Oil fish (short, long row of dorsal fins)
- Cowfish (big eyes, appendage hanging forward of the eyes, and tail near as big as its body)
- Red Snapper (Red Snapper has poisonous flesh sporadically. They are poisonous because of the toxins they naturally build in their flesh. Generally, they don't build up enough, but at odd times, in certain places, they can become poisonous.)

#### How do I find fish?

How do I get fish without my bass boat, my depth finder, and my carbon composite fishing rod? Well, people have been doing it for centuries. Long before technology, people understood fish habits and exploited them with what they had on hand. Here are some helpful, low-tech methods:

- Fishing hooks—Before we get into fishing, let's discuss how to make a hook.
  - » Gorge hooks—This is a carved piece of wood that is pointy on both sides. The fish sucks in the hook, which gets stuck.
  - » Thorn hooks—Tie a line to a thorn or a small group of thorns to make a treble hook.
  - » Wood elbow hooks—Whittle down the elbows of small limbs to make a hook.
  - » Wire/safety pin hooks—Bend sturdy wire to make an effective hook.
- Trot line –Firmly push two long sticks into a pond or slow stream. Tie a line between the two sticks. Attach a few lines with hooks and bait if possible to the main line. Make sure the hooks just barely rest on the bottom.
- Fishing pole—Pole, line, hook, bait, and find a suspected hiding place for a fish. Hold the pole to feel for bites.
- Weir trap—Use a weir trap primarily for turtles or catfish. Place sticks into the ground near the shore and
  make an open 2-foot by 2-foot box, placing the opening toward the water. Next, place sticks straight
  up and down in the ground making a funnel that extends out into the water a few feet past the original
  box. Continue putting the sticks into the ground and into the box. Leave an opening just big enough
  for a fish or turtle to enter. Bait the inside of the trap, and check it regularly. This trap can also work in a
  stream with the opening pointed upstream, working much like the basket trap.
- Tide trap—This traps the fish when the tide goes out. Just above the low tide mark, make a crescentshaped trap about 6 feet across (or longer if you have the material) with rocks. The tails should run toward shore. When the tide comes in, so do the fish. As it goes out, the trap blocks the fish. Make sure you are nearby to procure them. This uses the same principle as hunting tidal pools. Tidal pools are exposed in rock as the tide goes out, catching the creatures.
- Nets—Making nets can be impractical, and you might not have enough material or time to make them. The smart survivor, however, can purchase a gill net that has the weight and the bulk of a softball. Use this net to actively cast for fish, lay it on the bottom of the body of water, and retrieve it on occasion, or use the sweep-to-shore method. With the sweep-to-shore method, walk out at an angle and then turn into the shore, driving fish before you that eventually get caught in your net.
- Light strike—Light attracts fish. Shine a flashlight or torch at night, and the fish will investigate. As the fish swim toward you, use a heavy but slender stick or even the non-sharp side of a machete to strike into the water and knock out a fish or two.
- Frogs—You can find frogs along the shores of most freshwater areas. Be careful. You'll need frogs not toads. Toads are usually poisonous, display a warty, dry skin, and are found inland. Frogs are smooth and wet. Be sure to stay away from bright-colored frogs and frogs that live in trees (they tend to be poisonous). You can catch frogs with a long stick and a bit of stealth.
- Shellfish—In many locations, you can find ample shellfish such as mussels, clams, and oysters. Remember, these are filter feeders. If you eat them raw, you are eating all the junk they have filtered out of the water. Baking or steaming is best. Boiling works as well. You can find many shellfish adhering to pillars and rocks at the waterline.

#### Fishing tips

Fish are creatures of habit, which gives us a few tricks to find and catch them rather than just hope. Here are some of the tricks to fishing.

- Fish don't feed when the water is turbulent and dirty.
- Light attracts fish at night and during the day.
- Fish feed prior to storms.
- Fish hang out in shaded areas, the slower parts of streams, and in below-water shelters such as logs.
- A few plants can be used to "poison" the water, causing fish to rise up. Common plants to use are Black Walnut husks and Green Butternut husks, crushed and thrown into the water.
- Ask natives about their fishing techniques.

## **Preparing animal foods**

You've caught and killed your squirrel or your fish, but how do you turn it into your squirrel burger or your "fishwich"? You can use differing methods, but generally any method that does not puncture or cut the innards of an animal is okay. Many animals have disease-borne insects in their coats. Try to singe the hair off small animals and cook them for a bit in their own skin prior to handling them. Also, prepare animals as quickly as you can after killing them. This will prevent their body fluids from infiltrating the meat and keep it from rotting. This is how to skin what you've caught:

- Birds—Cut off the head and let the blood drain. Boil the bird in water to loosen feathers and kill off some bugs living there. Pluck the feathers. Remove the innards. Cook as desired.
- Frogs-Remove innards if desired. Insert a stick into its mouth, and put it onto a fire. Cook until done.
- Snakes –After killing a snake, approach the head with the sole of your shoe to ensure you don't get struck from a stunned snake or accidentally hit its fangs. Step on the head. Cut the neck at least 6 inches behind the end of the head to avoid any poison. Cut a slit down the stomach. Grab the skin and peel downward. Cook over a fire. Keep the innards for catching other animals.
- Fish—Cook fish quickly, since they don't take long to spoil. If a fish's eyes have sunken in or it smells even worse than a normal fish, it could be spoiled. Do not eat spoiled fish, even if you cook it. Fish can be wrapped in leaves and cooked in their skin. Cooking a fish within its skin is a good cooking method that retains much of its beneficial oils. Otherwise scale, gut, and either skewer over a fire or wrap it inside of big leaves or a clay ball. When the clay ball hardens, generally your fish is done. (You can tell a fish is done when the meat will flakes off the bone.) You can also boil your fish. The fish makes a good stock for soup. Watch out for small bones. Also, remember to save extra parts and pieces for bait.
- Animals—There are two basic ways to prepare animals: the small-animal method and then the everything-else method.
  - » Small-animal method
- Burn small game first to kill any harmful organisms.
- After burning, you can usually pull the skin off the meat.
- Cut open the stomach and carefully remove the innards.
- Continue to cook.
- If you want to skin your animal, such as a squirrel, first cut a slit across the back from one side of the ribs across the spine to the other rib side. Insert two fingers in each side and pull apart. Cook.
  - » Everything-else method
- Cut the throat of the animal and allow it to bleed out.
- Lay the animal on its back or hang it from its feet.
- Make an incision at the bottom of the chest and turn the knife, making the blade face out. (This keeps you from cutting organs and getting hair in the meat.)
- Cut up to and around the base of the head.
- Cut down to the hooves or paws.

- If the animal has a scent gland, such as a deer, carefully remove the glands. If you cut a scent gland, it will travel into and ruin the meat.
- Cut around the reproductive organs and remove.
- Cut around the anus.
- Take out the innards starting with the intestines. Be careful. Try not to rupture them inside the animal. Wash out the cavity if you do.
- Continue to skin the animal by peeling off the hide and cutting anything away that connects it to the carcass.
- Cut bigger sections away for easier handling and cooking.
- Cook thoroughly.

#### **Preserving meat**

The easiest way to preserve meat is to smoke it. Make a small hardwood fire with a good amount of smoke and a small amount of heat. Cut the meat into strips. Enclose the fire in a small hut-like structure or a hole dug in the ground and covered to retain much of the smoke. Place the meat inside. After a day or so, the meat will have meat consistency of beef jerky, turning a darker color and hardening. One day of smoking equals one week of preservation. Two days will equal two weeks and maybe more.

## Survival Tip:

Keep parts, pieces, and innards of your caught animals for bait to catch more animals. You can sharpen animal bones to make spear points, knives, and other survival materials. You can also use tendons from large animals to make cordage.

#### Preparing insects/worms

Nearly everywhere you go, you can find creepy crawlies. Insects and worms are high protein foods and should be a part of your diet in a survival situation. Try to roast insects before eating them, but you can eat them raw. Some insects, however, might not be safe to eat. Possible unsafe insects are those that have:

- Stingers
- Poison
- Fine hair
- Spines
- Bright coloring
- The likelihood of carrying diseases or are known disease carriers (leeches, ticks, etc.)

You can find worms and insects by turning over logs and brushing away debris. You can also find worms at night and when it rains. You can "clean" worms by leaving them in clean water for 10 to 15 minutes. They will essentially flush themselves clean. You can eat worms raw. You can find scorpions in deserts, jungles, tropical and subtropical forests, and warm temperate areas-nearly everywhere. Roast them and separate the stinger before eating.

## **Eating plants**

Plants are everywhere, and these valuable resources can meet most, if not all, of your food needs. Plants also don't have horns and teeth (unlike many animals), and they can be readily picked, prepared, and eaten. You can also cook edible plants that taste too bitter to eat. You may be able to remove the bitterness by boiling them a few times or roasting them. Procuring plants, however, does have a couple of disadvantages. Plants can be hard to identify, they can be poisonous, and they can even cause death. Ask locals about some of the abundant edible plants in order to prepare for your journeys. **Caution**—Avoid poison. Eat only plants you can positively identify. Hemlock has been used as a poison for centuries. Hemlock also looks like a wild carrot or wild parsnip, which you can eat. When in doubt, or if you find an abundant source you want to try, use the Universal Edibility Test (below)—or just leave it alone.

**Caution**—Avoid water-borne parasites. Plants growing in water can contain harmful organisms that we discussed previously in the water chapter (see page 19). Boil or cook these plants to ensure they are safe.

#### Avoid plants that:

- Are spoiled or overly ripened.
- Have a bitter or soapy taste. (Sometimes this can be removed after a few times of boiling.)
- Smell like almonds, but aren't almonds (cyanide).
- Have spines, fine hairs, or thorns (ouch).
- Are spoiled or have mildew or fungus.
- Are mushrooms.
- You have had a reaction to already, such as a burning or itching sensation.
- Have milky or discolored sap.
- Smell extremely bad or acidic.
- Are beans, bulbs, or are seeds inside pods. (I know green beans are safe, but this is just a good warning).
- Look like wild carrots.
- Are grain heads with pink, purplish, or black spurs.
- Have a three-leaved growth pattern. (We will discuss this in chapter 6—"leaves of three let it be").

The best way to see if a plant is edible is trying the Universal Edibility Test.

#### Universal Edibility Test (UET)

Ingesting unknown foods can have extreme effects on your body-even death. The Universal Edibility Test (UET) is a time-tested way of discerning whether plants are edible. The disadvantage of this test is that you only can try one part of one plant prepared one way at a time. Each trial of the UET takes 24 hours.

For example, pretend you've found a bunch of grassy shoots that smell like onions growing out of the ground. You pull one out, and it looks like a small wild onion. You want to be sure though, so between the shoot and the bulb, you try the bulb. (That's two types you can try.) Between frying, roasting, boiling, sun drying, or eating it raw (a total of five ways), you try it raw. It takes you 24 hours to do the test. You had two parts to try and five different methods, meaning you had 10 possibilities at 24 hours each. Testing each option just to discover if the wild onion was edible would take you 10 days.

It stands to reason then, that you should find an abundant plant to try to maximize your efforts. Once you find a suitable method and plant part, you can stop testing and eat it just that way. This does not mean that you can prepare the plant a different way or try a different part that you haven't tested yet. At the same time, just because one part of the plant or a specific method isn't suitable doesn't mean the whole plant is bad; try all parts. Here is the Universal Edibility Test:

- 1. Test only one part of one plant at a time.
- 2. Take the plant apart-leaves, stems, roots, buds, fruits, and flowers.
- 3. Smell the plant, checking for an extremely bad or acidic odor. This is just an indicator. If the odor is bad, consider trying another part first.
- 4. Do not eat for eight hours before starting the test. This allows any old food to pass, and it ensures your body is reacting to what you're trying.
- 5. Ingest nothing during the test except purified water.
- 6. During the eight hours you aren't eating, check to see if you are allergic to the plant part. Put a piece in the crook of your elbow or hold it on your wrist for about 15 minutes. If you have a reaction such as burning, itching, dizziness, vomiting, reddening, swelling, or numbness (hereafter simply referred to as a reaction) then this plant is poisonous. Wash the area and try something else.

- 7. Once again, ingest nothing during the test except purified water and the plant part you are testing.
- 8. Select the one part of the one plant you test and prepare it for eating.
- 9. Touch a pinch of that same part to the outside of your lip. Check for a reaction for a few minutes.
- 10. If no reaction, put some on your tongue for 15 minutes and look for a reaction. Do not swallow.
- 11. If no reaction, chew a pinch and keep it in your mouth for 15 minutes. Do not swallow. Check for reactions.
- 12. If no reaction, swallow the food.
- 13. Wait eight hours.
- 14. If you break out, feel dizzy, unnatural itching, burning, or numbness, then induce vomiting and drink lots of water to help thin out any poisons.
- 15. If all seems well, then try a quarter of a cup of the one part of the one plant you prepared that one way. Wait eight hours to see how that food is digested
- 16. If all is still well, assume that one part of that one plant prepared that one way is safe.

Using the UET and the list of plants to avoid (on page 56) above will probably cancel out some edible plants, however it will certainly cancel out plants that will make you sick or even kill you.

This chapter is only the beginning of a volume of knowledge available to you. Read as much as you can and ask natives what is out there for you to live off of. A little effort and the willingness to try will give you the edge in surviving.






# I Think I Might Have Broken My Liver!!

# Main Survival Point:

The student will be able to manage personal injuries, particularly sprains, fractures, wounds, and burns (or frostbite, depending upon the season). The student will also be able to solve problems of personal hygiene and provide for personal daily needs in survival situations.

# Bible Memory Verse: "But when He heard this, He said, 'Those who are well don't need a doctor, but the sick do'" (Matthew 9:12).

# **Buka-Khwe of Southern Africa**

Believed by some to be the oldest culture on earth, the Bushmen people groups of southern Africa live in Botswana, Namibia, South Africa, Zambia, and Zimbabwe. The Buka-Khwe are among those recognized Bushmen of southern Africa. Like many Bushmen people groups, their numbers are small. The are an estimated 200 in Zambia 800 in Botswana. The Buka-Khwe have a simple but well-organized social structure. Women are gatherers, and men are hunters. Unlike many African people groups, the Buka-Khwe have no superior tribal leader, and their decisions are made by discussion and consensus. While to the outside world their culture may appear chauvinistic, women have a high status in the culture.

Encroachment due to development, wars, and natural disasters has narrowed the habitats of the Buka-Khwe. One response in Botswana has been to create a Buka-Khwe-owned and managed tourist resort where outsiders can come and experience a semblance of their lifestyle. This degree of entrepreneurism is very different from their traditional nomadic lifestyle. However, many observers feel that this entrepreneurial approach may be the Buka-Kwhe's best opportunity for survival as a distinct people group since they now have a reduced access to land.

The Buka-Kwhe practice ancestor worship that includes mixes of shamanism and animism. They perform intense, ecstatic, and trance-inducing dances as they plead with the spirit world for healing. Witch doctors typically lead these practices.

Despite being accessible and long studied, no Bible or gospel recordings exist in the Buka-Khwe native language.

How can you bring the gospel to the Buka-Khwe of southern Africa in a way that honors their core culture and strengthens their communities?



Always seek a medical professional to instruct you on life-saving techniques. CPR certification is a must to help others in medical emergencies. The information given here is from training received by the author. The author is not a medical professional, although the information is gathered from his training by professionals. Use these techniques at your own risk and verify the information with your medical professional.

The ability to prevent accidents, illnesses, and other maladies is an important tool in first aid because you can stop further incidents before they happen. With some know-how and effort you can minimize risks to you and your teammates on your travels. In this chapter you'll learn what you can do at your campsite and along the trail to prevent you from getting hurt or sick. If you encounter problems, you will learn the basic information to get you on your way to help and recovery. You'll also learn the hazards of plants, how to prevent those hazards, and basic first-aid principles to apply when infected by hazardous plants.

#### Survival Term: Vector—the means by which diseases are carried, i.e. fleas, ticks, snails, leeches, etc.

#### Prevention

You can do a few things to prevent injury, such as choosing a good camp site, using personal protective measures, and practicing good sanitation, both within the camp and personally.

#### Choosing a campsite

Choose the best site you can, away from those things that bite and away from areas that can make you sick or cause skin conditions:

- Rodents—Animals carry disease. Stay away from places with signs of rodent activity. Keep your site clean and away from latrines and food areas.
- Stray Pets—This may seem a little weird, but it happens more than you think. Stray pets are common and • plentiful in third-world countries. You are in a foreign country, and you might look for a comfort as you would at home by adopting a local pet. Don't take in strays. They can lead to fleas, ticks, and other insects that can pass disease on to you. Dogs and other animals in most places you will travel are not taken care of like your pets at home.
- Insects—Don't keep standing water around where insects can breed. Attempt to clear or burn them off • the ground. Also, don't make camp near standing water, like swamps and stagnate ponds, if possible. (They are bug-breeding centers.) Insects kill more people than all other animals combined.

#### Personal protective measures

- Immunizations—Keep all of your immunizations current. (Go to www.imb.org/medinfo for a list of immunizations needed for the country where you are going.)
- Deet—This is a strong repellent against bugs. It can melt plastic in some cases. Don't be surprised if, after you apply Deet, it feels warm.
- Permethrin—Apply this bug repellent for your clothes, sleeping bag, tent, etc.
- Proper wear of clothing—Keep your sleeves down but open for ventilation. Keep your pants outside of • your boots.
- Chemoprophylaxis—These are pills to guard against bug effects.
- Bug spray—Bring whatever type you use. Be sure to spray around all potential entry points for bugs.
- Suntan/insect repellent combo—This is an excellent choice to kill "two bugs with one shot" (pun intended).

#### Sanitation

Sanitation is highly important when it comes to preventing injuries.

- Food and water—Keep both covered and away from your bed.
- Trash—Keep all your parts and pieces wrapped up and away from your bed as well. Food waste should be either used (if needed) or buried where it can decompose on its own away from your site. Pack in and pack out anything that is not natural.
- Latrines—Build or use the "bathroom" a good distance away from your site. Attempt to use a cat hole that is several feet deep and bury it when done. (If you want to find out about your health, you actually can inspect your feces for worms.) Resist the urge to urinate just outside your tent; it will attract animals and smell bad after a while.
- Utensils—Wash any utensils you use, including pots and pans, immediately. Wash them downstream from your location if you are close to water. Washing helps keep bugs and animals away.

#### Personal sanitation

You have to take care of your body as well.

- Cleanliness
  - » Clean clothes—Try to keep your clothes clean. This will cut down on rashes and skin problems, and they will stay "fluffy" for insulation in colder climates.
  - » Care of feet—Your feet will be sweaty and beat up. Change your socks frequently and use foot powder if you have it. To avoid blisters, keep your shoes tied tight. Also, take off and air dry your feet at every opportunity.
  - » Dry foot gear—Keep your shoes dry to avoid fungal growth.
  - » Bathe and Shave—Try to shower using purified water. In fairly clear water, you can attempt to bathe. Try to use soap that is eco-friendly. Be aware though, organisms that can penetrate the orifices of your body and cause problems often live in water, as well as leeches and other such things. Shaving helps keep bugs out of hidden areas. If no water is available for bathing, a sun bath might help. Strip down and lay out in the sun for 15 minutes or so. This will help you to dry you out and prevent fungal growth.
  - » Teeth—Even if you have no toothbrush or paste, you can still use a small hardwood branch to scrape your teeth. Removing plaque and food pieces from the teeth lessens the chances of bad bacteria in the mouth.
  - » Hand washing—After preparing meals or handling food, garbage, or going to the bathroom, it is extremely important to wash your hands or use a sanitizer if possible. Many stomach viruses start from unclean hands or latrines.

#### Survival Tip:

Most shoes loosen as you walk. To avoid blisters, retie your shoes after the first mile when you start walking for the day and then every hour after that (at a minimum).

#### Prevention and remedies for poisonous plants

First, you need to know how plants can poison you. Remember CIA: Plans can poison you through contact, ingestion, and absorption or inhalation.

- Contact: Touching poisonous plants can causes outer-skin irritation or dermatitis.
- Ingestion: Eating a poisonous plant will obviously cause problems.
- Absorption or inhalation: This refers to plant poison entering the blood stream, either through the skin or through the lungs when inhaled.

# Week Six: First Aid & Prevention

#### Humans and plant poisoning

Here are a few things to remember about poisoning from plants:

- Plant poisoning ranges from minor irritation to death.
- Every person has a different level of resistance or sensitivity. Some people may be more sensitive to a particular plant.
- The stage of growth may make a plant poisonous or nonpoisonous and different than it was during another growth stage.
- Plants look alike, and may confuse you.
- As we discussed with the Universal Edibility Test (on page 56), some plants have both edible and poisonous parts.

To keep healthy in survival situations, follow Mom's advice:

- Take the shot.
- Wash your hands.
- Don't take stuff from strangers.
- Use the Deet/Permethrin.

#### **Contact Dermatitis**

Contact Dermatitis (CD) is a nuisance and is detrimental to your mission. You will become preoccupied with CD's symptoms, and it will detract from you physically and emotionally. Here are a few things to note about CD:

- It is the most common skin condition in the field.
- It is the oil from the plants that causes CD.
- CD oils don't just get on your body. They can get everywhere. You can get CD from sleeping on your pack.
- Don't scrape or scratch the itch, since it will spread the infection.
- Smoke from burning a CD plant can be just as harmful as the oil.
- CD oils tend to stick better when you are wet or sweaty.
- Keep your hands away from your eyes. CD and your eyes are a bad combination that may require hospitalization.
- Take care of CD as soon as you notice symptoms, which include burning, itching, swelling, reddening, and even blisters. These symptoms may develop anywhere from hours to days after contact with the CD oil.

#### **CD** Remedies

- Remove CD oils as soon as detected with soap and water.
- If soap and water aren't available, lightly rub dry sand or dirt repeatedly on the area.
- **Caution:** Blisters can easily burst when you rub sand on them. This will cause the CD to get into the blister and under the skin. Be careful.
- Use an ointment.

Poisonous plants that cause Contact Dermatitis are:

- Cowhage
- Poison Ivy
- Poison Oak
- Poison Sumac
- Rengas Tree
- Trumpet Vine

# Survival Tip: "Leaves of three, let it be." The common CD-causing plants usually have a three-leaf pattern, meaning the three leaves radiate from the stem at the same point.

#### Injury—Treating excessive bleeding

If a team member is losing blood from a wound, you must control the bleeding. We will discuss three types of bandaging designed to stop serious bleeding. Use these types in order, incrementally, until the bleeding stops. The three levels are field dressing, pressure dressing, and tourniquet. The tourniquet should be your last desperate attempt to stop the bleeding. Remember, if you use a tourniquet, the victim will most likely lose the limb below the bandage. Do not attempt to put a tourniquet on anything other than a limb. (Note that the head is not a limb.)

#### How to stop bleeding

#### 1. Expose the wound.

- 1. Remove clothing from the wounded area by cutting it carefully away with scissors (preferred) or knife. If you don't have those, tear, push, and/or lift the injured person's clothing.
- 2. If the clothing is sticking to the wound or the blood is dried into the clothing and the wound, cut around where it is stuck. **Do not remove stuck clothing!** You may tear away more flesh or aggravate blood loss.
- 3. Expose the entire wound to see the extent of the injury, and check for additional wounds around the area.
- 4. Do not remove large or deep objects from the wound. This can cause rapid blood loss or can further damage internal tissues.
- 5. Look for both entry and exit wounds.

Survival Term: Field dressing—a military term for a sterilized gauze bandage with material attached to wrap around a wound. Common gauze found in a medical kit, along with a handkerchief, strip of clothing, or tape to wrap around the gauze to hold it in place, is nearly the same. If you don't have the military-type dressing, apply the steps using the gauze and wrapping material you have with you.

#### 2. Apply a field dressing.

- 6. Use the injured person's bandaging. If you get separated, you will be without yours if you need it for someone else.
  - » If no field dressing or sterilized gauze/bandage is available, improvise a dressing and bandage using the cleanest cloth available.
  - » If an impaled object is sticking out of the wound, stabilize the object with bulky dressing made from the cleanest material available. Then apply a bandage over or around the dressing that stabilized the object.
- 7. Open the package/gauze.
- 8. Remove the field dressing/gauze.
- 9. Don't touch the sterilized side that will go on the wound.
- 10. Hold the field dressing above the exposed wound with the white side of the dressing material toward the wound.
- 11. Place the dressing (white side) on the wound.
- 12. Place one hand on top of the dressing to hold it in place. (You don't want to cause the wound to become worse or cause pain for the injured person.) If possible, let the injured person hold the dressing in place while you finish it.
- 13. Center the handkerchief on top of the gauze.

#### Survival Tip:

You may use tape instead of a handkerchief, but it may stick to the skin or hair and cause damage. Also tape can't be loosened to allow proper blood flow without most likely losing the bandage and causing further injury. Also, be careful not to accidentally make a tourniquet with your tape.

- 14. Wrap one of the tails around the gauze on the injury with your free hand. (Keep the gauze from moving with the other hand.) As you wrap, cover one of the exposed sides above or below the wound so the gauze is fully covered. By covering the entire gauze, you keep foreign objects from getting in.
- 15. Wrap the other bandage around the injured limb in the opposite direction and on the opposite side. Leave enough to be tied.
- 16. Tie the tails into a nonslip knot over the outer edge of the dressing, not over the wound itself. The bandage should be tight enough to keep the dressing from slipping but not tight enough to interfere with blood circulation. You should be able to fit two fingers under the knot snugly.
- 17. Check the circulation below the bandage. These signs indicate trouble:
  - » no pulse
  - » cool to the touch
  - » numbness
  - » bluish skin tint
- 18. To allow more circulation, loosen and retie the tails without moving the dressing.
- 19. Recheck the circulation feeling for the pulse. If circulation is not restored, get help and evacuate to a medical facility.
- 20. If circulation is fine, apply direct pressure over the dressing with your hand for five to 10 minutes.
- 21. Elevate the limb above the heart unless you suspect a fracture.

#### 3. Apply a pressure dressing.

- 22. If blood continues to flow, apply a pressure dressing (do so only to an arm or leg though).
- 23. Place a wad of cloth material directly over the field dressing and wound.
- 24. Fold a handkerchief or other material over the wad and place it tightly around the limb.
- 25. Tie the ends of the handkerchief in a nonslip knot directly over the wound.
- 26. You should be able to fit your finger snuggly under the knot.
- 27. Check the circulation below the pressure dressing as before with the same cautions.
- 28. Apply manual pressure five to 10 minutes
- 29. If the wound continues to bleed out, apply a tourniquet.

#### 4. Apply a tourniquet (Use only as a last resort!)

Note that when a limb is severed, there is no need to apply bandages first. You *must* control the bleeding. A tourniquet is designed to turn off an artery, so place it on the part of a limb where it will be effective. The hands and feet are not acceptable areas to use a tourniquet. Once more, remember that a tourniquet is a last resort only. The loss of blood must be severe enough that it would cause death if a tourniquet is not applied. The part of the limb below the tourniquet may need to be amputated when the injured person reaches a medical facility.

#### Materials needed for a tourniquet

- Tourniquet band
  - » Fold a handkerchief or other strong, pliable material into a cravat at least two inches wide.
  - » Do not use 550 cord, rope, wire or shoestrings for a tourniquet band because they could slice through the skin.
- Stick to tighten the tourniquet. A half-inch by 4- to 6-inch stick will do.
- You may need additional securing material to secure the stick.
- Padding, if not already applied through bandages.

#### Where to place the tourniquet

- Select a site that is a few inches above the edge of the wound or amputation site.
- Do not apply a tourniquet over a joint or a fracture site.

#### Applying a tourniquet

First, let's look at applying a tourniquet when there are no bandages already applied.

- Place padding around the limb where the tourniquet will be applied in order to protect the skin from being pinched and twisted when the band is tightened.
  - » Smoothing the injured person's shirt sleeve or trouser leg over the tourniquet site is sufficient.
- Place the tourniquet material around the tourniquet site.
- Tie the folded handkerchief in a half knot (like first part of tying a shoestring).
- Place the stick on top of the half knot.
- Tie a full knot that will not come undone over the stick.
- Twist the stick until the tourniquet is tight and the bright red bleeding has stopped.
  - » Generally, darker blood is from a vein and may continue to ooze even after the tourniquet has been properly applied.
  - » There should be no pulse below the tourniquet.
- Wrap the tails of the handkerchief around the end of the stick to keep it from untwisting. Tie the tails under the limb in a nonslip knot.

#### Dressing a tourniquet site

Protect the site from contamination by applying a basic dressing over it. Do not cover the tourniquet.

#### Using the existing dressing.

- Place the stick on top of the half knot of the pressure dressing.
- Tie a full knot that will not come undone over the stick.
- Twist the stick until the tourniquet is tight and the bright-red bleeding has stopped.
  - » Generally, darker blood is from a vein and may continue to ooze even after the tourniquet has been properly applied.
  - » There should be no pulse below the tourniquet.
- Wrap the tails of the handkerchief around the end of the stick to keep it from untwisting. Tie the tails under the limb in a nonslip knot.
- Use additional materials to tie if you run out of material from the pressure dressing

**Caution:** If you undo a tourniquet, the sudden drop in blood volume can cause shock. If you want to attempt to save the limb by letting blood flow back, you must do so slowly. Currently, it usually isn't recommended you try this. The loss of blood is of greater concern.

#### Survival Tip:

Israeli Tourniquet—Fold your handkerchief to make your tourniquet band. Fold it in half and then place it around your bleeding limb. Pass the tails under and through the loop. Pull the tails to slow the blood flow. This may be an alternative to bleeding limbs that you want to control the blood flow in order to potentially save the limb. This is also field expedient if you are by yourself and need a quick tourniquet.

#### Document the tourniquet

You may have to go for help, and the injured person may pass out. You need to let others know there is a tourniquet on the casualty and when you put it there.

• Mark the person's forehead in mud, blood, or marker with a "T" to tell them there is a tourniquet. Include the date and time you applied it.

• If that is not a possibility, write the information on a piece of paper and place it under their shirt at the chest. When examining the casualty, they will see it.

You must stop the bleeding. Know the basics to get yourself or your friend home alive. Even if it means they may have to have an amputation. They are still alive.

#### Injury—Breathing

If choking, restore breathing by:

- Inspecting and attempting to remove any blocking material with a finger sweep. **Caution:** the casualty may bite. Block the mouth and sweep.
- If that fails, move behind the casualty.
- Attempt to dislodge the blockage with a few solid blows to the back between the shoulders.
- If still unable to restore breathing, conduct the Heimlich Maneuver:
  - » From behind the casualty, reach underneath his or her arms.
  - » Place one hand in a fist.
  - » Place your fist thumb first under the ribcage.
  - » Place the other hand behind the first.
  - » Pull/thrust upward quickly and forcefully.

#### Injury—Treating exposure to cold

Cold injuries can even occur in traditional jungle areas. High altitudes associated with the mountains near jungles can pose a cold-weather problem. Cold injuries include trench foot, chilblain, and hypothermia, which can occur even when the temperature is above freezing.

#### Preventing cold-related injuries

Cold can be a deadly enemy, so protect yourself through preventive measures. Use the buddy system, since you can often detect the early signs and symptoms of cold injury on another person instead of yourself. If some one develops a cold-related injury, you must be ready to recognize the problem and provide proper treatment.

Here are a few things to note regarding cold-related injuries.

- Wear appropriate clothing—Dress in layers so you can add or subtract them according to activity and temperature. Do not get wet with perspiration. It will chill you eventually, and it is hard to recover from.
- Repeat injuries—If you have had a cold-weather injury before, you will be more susceptible to getting another. Use extra caution.
- Dehydration—Yes, you can get dehydrated in the cold–even more so because most cold weather areas are dry and pull moisture from you (as in the desert).
- Antiperspirant on feet—To help with cold feet, Immersion Foot, and other problems associated with wet feet, use antiperspirant to help control moisture and sweating.

Detect Chilblain and Immersion Foot before it leads to severe distress. Chilblain is swelling and redness in the toes and feet due to cold exposure. The capillaries have ruptured and swelling occurs. Symptoms include tingling, pain, and itching. Continued exposure can lead to frostbite. Immersion Foot, also known as Trench Foot, is extended exposure to cold weather and moisture. Reddening, cracking, and purple or white skin indicate it's time to get dry and get warm. Unchecked Immersion Foot can lead to Gangrene.

To recover from Chilblain or Immersion Foot, you have to warm the area and keep it dry. The armpits or abdomen of someone else is a good way to gradually get warmer. Ingesting warm liquids can also help bring the core temperature back up. Do not heat rapidly or stick the affected area in warm water in order to heat up. Lack of sensation may not allow casualties to know they are burning their feet.

#### Frostbite

Simply put, frostbite is flesh exposed to freezing temperatures. It usually occurs on the feet, toes, nose, ears, chin, cheeks, forehead, fingers, hands, and wrists. Here are a few symptoms of frostbite:

- Reddish (in light-skinned individuals) or grayish (in dark-skinned individuals) areas on exposed skin.
- A whitening of the affected area.
- You go from tingling to numb.

As of this point, you can recover, but complete freezing of tissue can mean the loss of appendages. The symptoms of this are:

- Waxy yellow to pale skin.
- No feeling.
- Hard flesh (feels wooden to the touch).
- Black to red-violet colors and blisters.

Treatment of Frostbite:

- Seek shelter.
- Remove jewelry that could become tourniquets, such as rings.
- Loosen tight clothing.
- Gradually warm the casualty.
  - » Do not expose to high heat. Casualties have no sensation and could burn themselves.
  - » Do not rub, massage, or soak the frostbitten area.
  - » Ingest warm drinks.
- Take care not to re-expose the frostbitten injury.
- Get to a medical facility as soon as possible.

#### Hypothermia

Hypothermia occurs when the whole body's core temperature drops to dangerous levels. Hypothermia is dangerous, and the casualty needs medical assistance. Here are symptoms of hypothermia, in order of increasing danger:

- Apathetic, lethargic behavior
- Pale, cold skin
- Fruity breath odor
- Shivering
- Stop shivering
- Ice-cold skin
- Breathing slow and shallow
- Hard to find pulse
- Glassed over eyes
- Confusion
- Unconsciousness
- Death

Here's how to treat casualties with hypothermia. Do so in order of affliction, and try to evacuate them as soon as possible.

- Find shelter.
- Get the person in a sleeping bag or dry clothing.
- Cover the person to get warm.
- Give the person warm, non-alcoholic fluid.
- Watch the affected person's breathing and perform mouth-to-mouth resuscitation if breathing starts to fade to five breaths or less a minute.
- Apply more body heat if the person isn't getting warmer.
  - » Use buddy aid—Get into the same sleeping bag as the affected person, then cover him or her.
- Evacuate the injured person to a medical treatment facility as soon as possible-even if you cannot detect respiration or a heartbeat.

# Injury—Overexposure to heat

Elevated activity, stifling heat, oppressive humidity-hot weather can drain you quickly. It is important to keep up your fluid intake and work at a responsible rate. Watch your teammates for signs of falling prey to the heat. Here are a few facts about heat injuries:

- Try to drink a gallon of water a day and increase that level if any of the heat-injury symptoms appear.
- Water toxicity—In the rush to drink water for hydration purposes, don't overdo it and drink too much water. Monitor you intake and watch your symptoms.
- Acclimatization—Try to arrive at your destination earlier than your mission requires. By spending time in an area, your body adjusts to the needs it has. Throwing yourself into a new area puts your system into overload, and it may not adjust well.
- Alcohol/caffeine—As discussed in chapter two, these dehydrate you and aren't good choices.
- Diet/energy pills—These dehydrate the body as well.
- Wear appropriate clothing—Clothing is your best sun block. Wear clothes loosely for ventilation, but unroll your sleeves. Wearing a wet t-shirt helps keep cooling sweat against your body.
- Work/rest cycle—Don't overdo it. Work at a pace you can maintain. Your goal is to take the gospel to people who've never heard it, and you can't do that in a hospital (unless you happen to meet people from that people group in hospital).
- Repeat injuries—As with cold injuries, you are more likely to become a heat casualty if you were one before.

Types of heat-induced injuries

- Heat cramps
- Heat exhaustion
- Heat stroke

#### Heat cramps

- Symptoms:
  - » Painful cramping of the larger muscle groups
- Treatment:
  - » Shade
  - » Rest
  - » Hydration
  - » Massage

#### Heat exhaustion

- Symptoms:
  - » Profuse sweating
  - » Confusion
  - » Headache
  - » Nausea/light-headed/vomitting

- » Tingling
- » Elevated temperature of 99-104 degrees Fahrenheit
- Treatment:
  - » Shade
  - » Loosen clothing
  - » Hydrate with cold water and/or sports drink
  - » Take the person to a medical facility before it gets worse

#### Heat stroke

- Symptoms:
  - » Red skin
  - » Loss of bodily functions/coordination
  - » High temperature
  - » Stop sweating
  - » Confusion or lack of response

Note: Heat stroke can result in organ damage (brain damage, kidney failure, liver failure).

#### Treatment:

- » Get to a medical facility immediately.
- » Lower the body temperature as fast as possible!
- Take all clothes off.
- Apply cool water.
- Fan the injured person.
- Place ice packs between the legs, under the armpits, back of the neck and throat in order to cool the blood down.
- Keep cooling efforts up until the temperature gets back to 101-102 degrees Fahrenheit.
  - Immerse the person in 60-degree (Fahrenheit) water or so if the other methods don't bring down the temperature. There is a risk of shock with immersion.

## Injuries—Fixing broken, sprained, and dislocated bones

What is the difference between breaks, sprains, and dislocations? A fracture is simply a break in a bone. Breaks are serious because they can cause further injury by cutting arteries and other tissue. Mishandling of breaks can cause permanent disability and even death. Breaks are either open (penetrates the skin) or closed (don't penetrate the skin). They are also either simple (one break) or compound (multiple breaks). Dislocations and sprains are injuries to joints, which are treated as though they were fractures.

**Warning**—Do not reset breaks. Instead, splint them in place. Bones are sharp, and pushing or pulling bones back into place is like pushing a knife into your muscles, arteries, and other tissue. You can cause massive bleeding and death.

## **Splinting basics**

Broken, sprained, and dislocated bones can all cause excruciating pain. Reduce the pain by splinting the area, which immobilizes movement and decreases pressure on the area. You may have to treat a wound first if it is an open wound or if a wound is present with the injury.

These are the basics of splinting.

- Use solid materials to keep the injury from bending.
- Use padding to protect against rubbing and for comfort.
- Tie bandanas above and below the suspected area, not on it.
- Check circulation to ensure you didn't accidently apply a tourniquet (capillary fill).
- Wrap, elevate, and apply cold then hot applications to initially help with swelling, promote healing, and keep foreign matter out of any wound.
- Immobilize the area if you believe continuing your mission will cause further injury.

## How to put on a splint

First, you'll want to prepare the injured person.

- 30. Put the injured person at ease. Tell him or her, in a reassuring voice, that it will be OK. (This helps to prevent shock, and you need a coherent patient to tell you what hurts, etc.)
- 31. Tell the injured person that you are taking care of him or her, and explain what you are doing.
- 32. If you must leave the injured person to locate materials needed to make a splint, tell him or her that you will return quickly.
- 33. Search the person gently for the fracture and others.
- 34. Loosen clothing
  - » Do not remove boots unless there is actual bleeding from the foot. The boot is a natural splint and can help to keep down swelling.
- 35. Remove jewelry
  - » Rings or other jewelry can become tourniquets. Tell the casualty if you are removing items, and put them in his or her pocket.
- 36. Dress any open wounds, as discussed previously.

**Caution:** Do not attempt to push the bone back under the skin. Cover exposed bone with a dressing. Do not attempt to straighten or realign the injured limb either.

Once you have prepared the injured person, gather splinting materials.

- Gather tree branches, poles, boards, sticks, or other objects you can use to immobilize the fracture.
- Get blankets, jackets, extra clothing, etc. to use as padding.
- Get tying materials, such as bandanas, wide belts, etc. Do not use wire, string, 550 cord, or similar cording, since these can potentially cut into the skin or interfere with circulation.

After you've gathered the materials, it's time to make a splint.

- 1. Put the splint on where the injury lies.
- 2. Insert a bandana or material tie:
  - » Push the folded bandanas under the natural folds and curves of the body, so you don't disturb the limb.
  - » Gently see-saw the material until it is in position. Place at least one or two tying materials if possible above and below the break.
- 3. Position the wooden sticks.
  - » Place one stick on each side of the injury.
  - » When possible, position the sticks to immobilize both the joint above the fracture and the joint below the fracture.
  - » Make sure the ends of the sticks are not pressing against the armpit or groin, or you may cut off the circulation of major arteries.
- 4. Apply padding
  - » Place padding between the sticks and the injured appendage.
  - » Place extra padding at bony or sensitive areas such as the elbow, wrist, knee, ankle, groin, or armpit. Comfort is everything when tending to broken, sprained, or dislocated bones.
- 5. Secure the sticks to the limb.
  - » Wrap the bandanas around the sticks and immobilize the injury.
  - » Tie the tails of each bandana in a nonslip knot to the outside of the injured limb.
  - » The bandana should be tight enough to hold the sticks securely in place but not tight enough to interfere with blood circulation.
- 6. Check circulation
- 7. Loosen and retie if needed.

# Broken bones

Signs of broken bones

- Odd-angled limbs
- Bone poking through the skin
- Pain
- Hard to move a limb
- Tenderness
- Swelling
- Length of a limb seems shorter
- Bruising
- Massive injury to an arm or leg
- "Snapping" or breaking sound heard or felt when injured

**Caution:** If you suspect an injury, don't move the bone to see if there is popping or grinding, etc. The casualty will tell you how bad it hurts. Touch to feel for abnormalities, but do not move it.

How to make an arm sling (for hurt or broken arms)

- Fold a bandana from one end to another.
- Tie together the two ends, on the long side.
- Slip over your head with the point down.
- Insert the arm, ensuring the elbow rests at the point.
- Adjust so that the neck slightly supports the arm.
- Tie another folded bandana around the body and the arm to help stabilize it.

#### Sprains

Sprains can hurt, but they cause no serious problems to your mission unless they are accompanied by a large amount of swelling. Continue to walk on sprains, or they will swell and become immobile. If time permits, use the memory aid RICE Heat to help you know what to do: Rest, ICE, Elevate, Heat. Applying ice and elevating the injury will help to slow the swelling. Heat will help bring the swelling down by promoting circulation. If needed, splint a sprain to stop further injury.

## Dislocations

Dislocations are extremely painful and have caused people to pass out. Most dislocations are upper body. Seek medical attention to "pop' joints back into place. For field expediency or if you notice that you have circulation problems because of the dislocation, you may want to have a friend put it back in place. Or attempt to realign the dislocation while others hold you down. For dislocations, do not try anything fancy. You want to pull the limb straight out and allow it to fall back naturally where it belongs. Here are the steps:

- Relax the injured person as much as possible. He or she is going to pull against you, but the procedure is easier the more relaxed the person is.
- Lay them on their back for two reasons:
  - » It helps to keep the casualty from passing out.
  - » It provides better, more stable control.
- Take the person's hand palm-to-palm and thumb-to-thumb, so your hand wraps behind his or her thumb.
- Brace against the person's ribcage with your feet.
- Quickly and firmly pull out and release back into the socket.

**Caution:** Use this procedure only when no medical attention is available. Always seek medical assistance for medical matters.

There are many ways to get hurt, but most are preventable with thorough planning and deliberate execution. Taking classes such as CPR are a good start to being survival-smart. Also, consider a crossover class in plants, which will teach you about good plants for food and medicine and how to avoid the bad ones. Sometimes though, things just happen. Be proactive when you get injured and get it fixed so you can move on. No pain is worth death, so even though you know the hurt is there, you still have to continue on. You will heal; you will get better.






# Haven't I Seen That Tree Before?

# Main Survival Point:

Students will learn how to use a map, compass, and the terrain for directional support. They will also learn to find a general direction when none of those things are available. Finally, students will also learn to anticipate weather using cloud formations. Bible Memory Verse: "The Lord is my rock, my fortress, and my deliverer, my God, my mountain where I seek refuge, my shield and the horn of my salvation, my stronghold" (Psalm 18:2).

# Zargar of India

There may be no more majestic place on the planet than the Himalayan Mountains. Underneath that beauty though is a land that lends itself to a tough existence. Long winters make life difficult for people like the Zargars. This people group is a subgroup of the Kashmiri people and they speak the Kashmiri language. Located in an area of land disputed between India and Pakistan, the Zargars are Sikhs. Originating from the Punjab region of India, Sikhs are monotheistic and demand sole allegiance to One Immortal Being and ten Gurus. They tolerate no allegiance to any other religion. Fortunately, the 1,400 to 17,000 Zargar people have some Christian resources available in their native Kashmiri language.

How can you help Zargars learn about God's love for them and the sacrifice of His Son, Jesus, on their behalf? How might a church for the Zargar people be different from yours?

So you think you know where you are, but you know you've seen that rock before. In this section, you'll learn how to use terrain and nature to help ensure you are on the right path and what you see on your map is what is around you.

Navigating in a foreign place can be daunting. Roads are always the best networks, but at times pavement turns to rock, rock to dirt, and dirt to broken leaves for trails. You must have a sense of where you are and where you are going. By plotting the course, you can use things like "handrails." Handrails are linear terrain features such as streams, telephone lines, and long rock formations that parallel your course (kind of like walking down the stairs and holding on to the handrail). Not only is heading in the right direction important, but so is knowing how far you must travel. Keeping pace and verifying your location with known points ensures you know how far you've gone and how far you still need to go.

# Survival Tip:

Make sure everyone in your group knows where all navigation aids are kept. If someone gets hurt, the others will still know where to find these crucial items. Always check to make sure you have these items after every stop.

# Knowing where you are and where you're going

# Tools for the road

- Map/GPS—A map is essential. Even when traveling on roads, you can become disoriented easily. Know how to use both your map and your GPS. (But remember, batteries die and some places may have a weak signal or no signal.)
- Compass—Having a compass is useless-unless you know how to use it.

## Compass

When the compass is held flat (on a non-metallic surface), the magnetic needle will always point to magnetic North. The graduated dial, orienting arrow, and sighting line will help you find which way to go. There are 360 degrees on the graduated dial of the compass. The numbers on the dial show the number of degrees from North. North is 0 or 360 degrees. East is 90 degrees. South is 180 degrees, and West is 270 degrees.

A bearing is the degree reading or direction from your position to another object or location. To get a bearing, hold the compass level in front of you. Point the sighting line toward the object. Turn the dial until the orienting arrow and magnetic needle are lined up. The bearing to your object is now the degree reading indicated at the sighting line.

When marking legs of your trip from one point to another, align your map and compass to the North. To get your bearing, center the compass on your current position. Keep the map and compass pointing North. Note where the line of the leg of your trip passes through the compass and mark the direction in degrees.

To get the distance as well as your bearing, place your compass on the map so that the long side of the base is on a line from your present location to where you are going. Hold the



compass steady and rotate the dial so that the "N" is pointed to North on the map. Your bearing is read on the dial at the sighting line. Note the number of inches or centimeters on the side of the base. Convert the distance you must travel by using the scale on your map.

Pick up your compass and hold it in a horizontal position. Pivot until the orienting arrow is aligned with the magnetic needle. The compass sighting line now points in the direction you need to travel.

Look up and sight an object straight ahead, such as a tree or cliff. Then forget the compass and walk to the object. When you arrive at the object, look at the compass, align the magnetic needle and orienting arrow, pick out another object straight ahead, and walk toward it. Repeat until you reach your destination.

Always orientate the map and compass to the North when figuring out the compass degree where you need to travel (called your azimuth).

If you feel lost, you can go back the way you came and start over. You just go 180 degrees opposite your original location. If you were traveling at a 90-degree azimuth and become disoriented, you would follow a 270-degree azimuth to go back the way you came.

# **Compass Exercises**

To practice using your compass, find an open area where you have some room to travel in all directions.

#### Exercise 1:

In the center of the area, place a quarter or another marker on the ground. Go five paces East, then five paces North, then five paces West, and five paces South. You should arrive back at your marker.

#### Exercise 2:

Place a marker on the ground. Go 20 paces traveling at 270 degrees, then travel 20 paces at 360 degrees, next travel 20 paces at 90 degrees, and finally travel 20 paces at 180 degrees. You should arrive back at your marker.

#### Exercise 3:

Place a marker at your starting point. Take the following bearings and travel the distance stated.

- 1. Take a bearing of 230 degrees and go 17 paces.
- 2. Take a bearing of 186 degrees and go 16 paces.
- 3. Take a bearing of 100 degrees and go 32 paces.
- 4. Take a bearing of 248 degrees and go 18 paces.
- 5. Take a bearing of 360 degrees and go 29 paces.
- 6. Take a bearing of 294 degrees and go 24 paces.
- 7. Take a bearing of 342 degrees and go 26 paces.
- 8. Take a bearing of 120 degrees and go 15 paces.
- 9. Take a bearing of 140 degrees and go 15 paces.

Place a marker where you are standing. This is your ending point. Go back to your starting point and do the exercise again. You should arrive at your marked ending point.

## Keeping track of your pace count

You need to know how far you have traveled. To help figure this out, count how many steps you take on average in 100 meters. (Meters will be the best measurement, since most countries in the world are on the metric system.) Measure out a 100-meter course. Walk down the course starting with your right foot and count each time your left foot touches the ground. When you get to the end, that number is your pace count. Be carefulyour pace count will increase as you get tired or as you walk over difficult terrain. Figure out a number for each of these. If you are really good at this, you can figure out your running pace count. Do the same, but take up a slight jog. This will help when you are in a hurry but want to stay on track. Pace count varies by individual. Be as accurate as possible. If you are off by three steps every 100 meters, and you are traveling 10 kilometers that day, you would be off by 300 meters (3 x 10 x 10). That's a lot! Survival Term: Azimuth—an angle in which a traveler will be moving between control points.

# Survival Tip:

Distance Rule of 3—When judging distances, estimate how far you believe an object is, multiply by three, and you'll be closer to the truth.

## Using the terrain around you as a guide

This takes a bit of expertise, but it can work well if you understand it and if you have good terrain.

- Be familiar with the lay of the land by studying your map ahead of time to learn what prominent features you'll encounter.
- Orientate your map to north using your compass.
- Find your location.
- Find where you want to go.
- Study your trip.
- Bypass the cliffs, streams, swamps, and other land formations you cannot travel across. Then adjust your course.
- Draw a line from where you are and where you want to go. These are your first "control points."
- Find other control points. These are easily recognized and defined areas once you see them. Examples include recognizable hills, rivers, towns, etc. Each leg of your trip should go from one control point to another.
- Measure out the legs of your course.
- Get the compass directions (azimuth) you must travel to those legs.
- Know the terrain along those legs as well. These features are steering marks; they help "to steer" you in the right direction.
- Start your trip using one of three orientating strategies:
  - » Dead Reckoning—Move from point to point, staying on a set of compass direction (azimuth). Rely nearly completely on your compass.
  - » Terrain association—Move in a direction using terrain as steering points or handrails to your control points. Use your map for reference, turning it in the direction you are traveling. Use your compass to make sure you are generally pointed the right way.
  - » Thumbing—This is essentially the same as Dead Reckoning. Fold your map and put your thumb on your start point. With your thumb as your reference point, trace where you come from. This keeps you centered on where you are going instead of searching all over the map.

# Survival Tip:

- Never Eat Soggy Waffles
- Never Eat Sour Watermelons
- North East South West.

Using one of these sayings, you can find the cardinal directions by going in a clockwise direction around a circle.

In all three methods, always know your direction and keep your pace.

# Finding your direction without a compass

Your batteries are dead, and that last river crossing seems to have carried your compass with it. Never fear! You can use a variety of methods to figure out where each direction is. You can use the sun and the stars. These methods give general cardinal directions only, not actual degree azimuths. When you have gotten to this point, you are using terrain association coupled with the basic sense of where N S E W are.

# **Survival Tip:**

The sun rises in the east and sets in the west. If you are in the Northern Hemisphere, the sun will always be to your south. So if you are facing the sun and it rises on your left (the east) and sets to your right (the west), north must be behind you. In 15 seconds, you just figured out the cardinal directions.

# Using the sun

The earth's relationship to the sun can help you to determine direction. Remember:

- The sun always rises in the east and sets in the west.
- The rising and setting of the sun is not exactly due east or due west.
- There are seasonal variations.

# **Using shadows**

With practice, you can use shadows to determine both direction and time of day. Shadows will move in the opposite direction of the sun. In the Northern Hemisphere, shadows move from west to east, and will point north at noon. In the Southern Hemisphere, shadows point south at noon. Shadow methods used for direction finding are the Shadow-Tip Method and the Watch Method.

#### Shadow-tip method

- Find a fairly straight, one-meter-long (three-foot) stick.
- Find a flat, level spot without debris where you can see a definitive shadow.
- Push the stick into the ground.
- Mark the shadow with a small stick or rock.
- Because the sun rises in the east no matter where you are in the world, this first shadow represents west.
- Wait about 15 minutes. The longer you wait the more accurate the results. An hour wait is plenty.
- Mark the next shadow the same way as the first. You now have east.
- Draw a straight line from the first to the second mark and a little bit beyond.
- Put your left foot on the first mark (west) and your right on the second (east). You are now pointing north, so south must be behind you.
- This method works the same in either hemisphere.

#### Watch method

You can also determine direction using a watch. An analog watch with hands is preferable, but if you have a digital watch, you can trace or imagine how the hands would be on your watch.

- In the Northern Hemisphere:
  - » Hold the watch horizontal to the ground and point the hour hand at the sun.
  - » Divide in half the angle between the hour hand and the 12. This gives you the north-south line.
- In the Southern Hemisphere:
  - » Point the 12 on your watch at the sun.
  - » Divide in half the angle made between the 12 and the current hour hand. That's the north-south line.

# Determining direction by the stars

The night sky has guided man for as long as he has looked up at it. You can find general direction using the stars and constellations. Your location in the Northern or Southern Hemisphere determines which constellation you use to determine your north or south direction.

## The northern sky

In the northern hemisphere, use Polaris—the North Star, which is the most due north of any star in the sky, as your guide.

- Find the Big Dipper (Ursa Major)—The Big Dipper is one of the most, if not the most, known constellation in the northern hemisphere. Find the cup/bucket/spoon/ladle portion of the dipper. You'll find the North Star in the direction water would flow out of it. Another possible method is to take the last two stars in the cup and get the distance between them. Measure three to five times out on that same line, and you will find the North Star.
- Find Cassiopeia—Cassiopeia is named the queen, as this constellation resembles a queen's crown. Cassiopeia boxes in the North Star with the Big Dipper opposite.

## The southern sky

In the southern hemisphere, use the Coal Sac—The Void of Stars.

- Find the Southern Cross—The Southern Cross is one of the most known constellations in the southern hemisphere. The middle of the cross will point down to an area that is dark and without stars.
- Find the Pointer Stars—The pointer stars, when bisected, point down to the Coal Sac. The Pointer Stars and Southern Cross point downward together to the Coal Sac, which is south.

# Getting where you're going-tips for the journey

You've probably heard the saying, "It's not the destination but the journey." Well, it's about both. You've just learned how to get to where you're going and what to do if you're lost-that's the destination aspect so to speak. But how about the journey itself? How do we travel safely and efficiently so we arrive alive and in good health?

Here are some tips:

- Use game trails and streams for clear and fast movement when possible.
- Traveling through the wilderness or "breaking bush" requires great concentration, survival knowledge, common sense, and judgment. Where your mind leads, your body will follow.
- Be calm, self-confident, and patient. Think through problems and attack them deliberately.
- Pick the easiest and safest route, even if it is the longest.
- Go around obstacles instead of fighting through or climbing over them. This will save energy, both physical and emotional.
- Avoid steep slopes.
- Go around gullies and canyons. Once inside them, there is no guarantee you can climb out. Also, a flash flood might hit you, and you'll never see a warning drop of rain.
- Avoid swamps.
- The shortest distance between two points is a straight line. Follow a straight line heading when possible and/or practical.
- Travel ridges are there to help through the ups and downs of normal hilly travel, and they give you decent vantage points to determine where you are in regards to your surroundings.
- In case of storm or fog, make camp.
- Stop early enough to make camp.
- Use probing poles when crossing streams.
- Cross streams at a 45-degree angle downstream and use a pole on the upstream side.
- Construct and use a raft when possible or needed.

- Travel rivers only during daylight, and stay close to the shore.
- Use knotted rope as a safety line while crossing streams, rivers, and gorges.

# Trail discipline

- Don't bunch up when traveling in a group.
- Have a good pack that will enable you to move quickly if necessary.
- Set and maintain a steady pace.
- Adjust your pace to the slowest person.
- If you get lost, be calm and evaluate the situation.
- Be safety conscious (i.e. keep cutting tools covered, etc.).
- Use caution when crossing roads or streams.
- Use caution when approaching water holes.
- Always check for your important items before moving on.

# Survival Tip:

How much daylight is left? If you need to know how much longer you'll have daylight, take your middle three fingers and hold them out. Trace the spaces of your three fingers from the horizon to the sun. The number of times you can do that from the sun to the horizon is about how many hours you have.

# Anticipating weather

Since you're unlikely to bring along a meteorologist with you, you'll need to know at least the basics of weather to determine when bad weather is coming. In this section, you'll learn to identify the clouds by shape, color, and even by the emotions those clouds illicit from you.

Don't worry too much about memorizing the scientific names. Instead, focus on remembering the shape, color, and possible weather forecast associated with each.

Remember that your priorities change based upon the weather you will face. Included in the following descriptions are emotions that the cloud formations tend to bring out in people. If you think in these terms and rely on your instincts, you will have a decent chance of predicting weather at least a few hours out.



**Cirrus** clouds are high, wispy clouds several miles up. Looking at them may give you a sense of wonder and freedom. Cirrus clouds indicate good weather. However, if you are in a cold climate, the wind seems to be strengthening, and more of these clouds are coming, they could mean a snowstorm is on its way.

# Week Seven: Navigation & Terrain Recognition



**Stratus** clouds are low, moderately dark clouds. Looking at these clouds might give you a sad feeling or seem to drain your energy. Stratus clouds mean rain or mist is at hand.



**Cumulus** clouds are middle to low clouds. They look "heavier" than Cirrus clouds, but they are white and fluffy. Cumulus clouds are happy and playful clouds, giving viewers a sense of grandeur. They are also fairweather clouds. If Cumulus clouds start to build upwardespecially around mid/late afternoon-and turn darker, rain is on the way.



**Nimbus** clouds are middle to low rain clouds. These clouds usually go as far as you can see with no distinct shape. They are simply all over. Nimbus clouds make you want to get a cup of hot chocolate or read a book. Seeing these clouds approach signals rain that will last for extended periods of time.



**Cirrostratus** clouds are high clouds that have gathered some water but aren't "angry" enough or low enough to rain. Cirrostratus clouds are darker and a bit thicker than Cirrus clouds. They still mean good weather.

# Week Seven: Navigation & Terrain Recognition



**Cirrocumulus** clouds are small, puffy, high clouds that are usually defined in ribbons or waves. They aren't as big or puffy as Cumulus clouds. Cirrocumulus clouds have more water than Cirrus and retain their streaks or "banding." Often quite beautiful, these clouds still signify good weather.



**Cumulonimbus** clouds are angry clouds-big, dark, and ominous. You can often see lightning lighting up these clouds. Cumulonimbus clouds are dangerous. They bring storms that range from strong wind and heavy rain to lightning.

You now have an indication of when bad weather is approaching or good weather is staying. Knowing this can help you manage your time for things other than building shelters. When the weather changes, your priorities change, and your shelter can be the difference between life and death when it comes to exposure and hypothermia.



# So Easy a Caveman Can Make It!



# **Kurds of Turkey**

Of all the world's people groups, the largest identified people group without a homeland is the Kurds. Known in the Bible as the Medes, as in the law of the Medes and the Persians, this ancient people group numbers more than 25 million with people living primarily in Iraq, Iran, and Turkey. These overlapping areas of Kurdish population are often referred to as Kurdistan. An estimated 8.2 million Sunni Muslim Kurds live in southeastern Turkey. The territory that the Kurds inhabit there is mountainous and rugged with little water available to them and much susceptibility to disease. Temperatures can range from -22 to 104 degrees Fahrenheit. Living primarily in small villages of about 2,000 people, with little access to education or health care, the Kurds farm and raise cattle and goats. The Kurds have faced much persecution in recent years, particularly following the first Gulf War. In Turkey, it is illegal for them to speak in Kurdish.

How can you take the gospel to the Sunni Muslims of Northern Turkey?

In survival situations, you may need to make any number of tools or equipment from materials around you to survive. Examples of tools and equipment that could make your life much easier are ropes, rucksacks, clothes, nets, axes, hammers, and many others.

# Cordage

Having rope or rope-like material is important, particularly when it comes to building shelters, traps, and tools. You can find a variety of materials to make cordage for different lengths and strengths. Use these materials to create cordage:

Rope—(or shoelaces, 550 cord, etc.) Hopefully, you already have this on hand, and if you need to make it stronger, you can weave pieces together. If you need more rope, you can untwist some ropes to make multiple thinner ones. Don't forget that 550 cord gives you seven strands inside the shell of the rope. Those

# Survival Tip:

Tie your boots with 550 cord, and weave it into different pieces of equipment, like your pack or the handle on your knife. If you need it, you will already have a supply.

strands are made up of three smaller strands twisted together, giving you potentially 21 lashing ropes for all of your survival needs.

- Vine—Green vine is pliable and found in most forests. It is extremely strong, and you can use it almost exactly as you would a rope. Simply pull it down when you find it.
- Plants—You can twist plants together to make pieces of rope. Also, a variety of trees have inner bark pliable enough to use for cordage. These trees include: elm, hickory, white oak, and cedar. Look for fibrous bark on trees. To be suitable, they should be green and pliable. Take a few pieces, and tie a knot with them. If they don't break, they should be good for survival use.
- Clothing—In dire circumstances, you can cut up clothing and twist or braid the cloth to make it stronger. Remember, however, that once cut, your clothing won't magically grow back together.
- Sinew—In a survival situation, you should use every part available of any animal you kill. The sinew, or the fibrous tissue like our hamstrings, runs down the legs of most animals. After you kill an animal, remove the sinew and dry it. Pound the sinew until the fibers separate. Take those fibers and wet them slightly wet. Weave or twist them together.
- Hide—Earlier, in the food section of this guide, there was no discussion of tanning animal hides because the process was lengthy and probably not worth the effort. However, for lashing material, the hides can come in handy. There is no tanning involved in doing so. Simply get all the fleshy material off the hide.

# **Survival Tip:**

Use material that is wet to create a secure lashing. The material will shrink as it dries, thus shrink creating a tighter bond. Let the hide dry completely and don't worry about the hair. Cut the hide into strips about a half-inch wide. If you want a long piece, cut circularly from the middle out. For lashings, soak your hide for a few hours and then wrap whatever you need secured. As the hide dries, it will shrink into a tight hold.

# Knots

You can make hundreds of knots for thousands of uses. In survival, focus on two types of knots: those that come apart and those that don't. Read about and know the knots in this chapter. You'll need a trained instructor to show you different knots—especially knots used in climbing or other life-and-death situations. These knots are not meant to hold up to extreme pressure.

- The overhand knot—This is as simple as it gets. It's the knot you tie before you make the bows when tying your shoes.
- **The square knot**—This is a good, all-purpose knot that will stay put. Tie it by completing two overhand knots but in differing order. For instance: right over left, then left over right.

- The slipknot—You might not find this knot in most knot books, but it is a useful knot. Rope is a precious resource. If you tie a permanent knot, you may have to cut your rope to get the knot out, meaning you will lose a length of rope. The slipknot is an incomplete overhand knot. Instead of pulling both strands through, leave one in a bow. To strengthen the knot, tie another slipknot in it. The tension will keep the knots together. When you need your rope, pull on the end until the loop is out, hence you retrieve your complete rope.
- **Frapping**—This is more a method than a knot. Use frapping when you need to tightly lash multiple things–like poles. Tie several loops around the poles. Then tie the ropes together between the poles to squeeze the ropes together and lock the poles in place.



# **Creating Tools**

Although they've evolved through the years, tools have been around throughout all of history. In a survival situation, you'll need to think simple to fully understand what tools can do and how they are made with limited resources. Tools serve two purposes: to get food and prepare it, and to provide safety against threats. You can make many tools using simply what nature provides.

## Clubs

Clubs essentially extend your immediate area of defense. They also multiply the force of your blow on an object. The great thing is that all that damage is taken by a stick and not by your hand. Clubs, by definition, are to be held, not thrown. There are three types of clubs: simple, weighted, and sling:







#### Simple club

A simple club is a stick long enough and thick enough to inflict serious damage. Choose a stick that is 18 to 24-inches long and a few inches in diameter. It is basic but effective. The benefits are: it's plentiful, it absorbs the damage for you, and it gets you out of immediate danger.

#### Weighted club

This is simply a stick weighted with a rock. It has the same characteristics as a club, but the extra weight allows it to increases damage. Depending on which type of rock you choose, you could potentially use this club for chopping or other means.

There are three basic methods for joining a rock to a stick and getting it to stay attached. The methods are the Split-Handle technique, the Forked-Branch technique, and the Wrapped-Handle technique (not shown).

- » Split Handle—Tie a piece of rope around a split club (stick) about 6 inches below where you expect the rock will go. (Tying the rope prevents the handle from splitting all the way down.) Insert the rock. Pinch the ends of the branch and tightly tie them in a crossover pattern. Secure the rock in place, so it does not slip.
- » Forked Branch—This is a similar technique, except the split is a fork in the branch. Set your rock in this crook, squeeze the limbs together, and tie them. Use the same crossover pattern to hold the rock in place.

» Wrapped Handle—This technique assumes you have a flexible club that, when shaved down, can "flap" over the rock and be tied down. Shave down one side of the stick. Place the rock on the shaved side and pull the flap over. Securely tie the bottom of the flap to the club and make sure your rock will not come loose.

#### Sling club

This is a stick and a rock with a string-like a mace. The string or rope allows you to whip the rock down onto an object, increasing damage. This centrifugal force multiplies your club's lethal effects. The string should be about three-fourths the length of the club, and the rock should be about baseballsize. Caution: Ensure the rock is secure. A sling club that can kill an animal can also kill the human who made it.

#### Spears

Spears are simple poles with a sharp point. If you are unable to make a point on your spear, you can always use bone, metal, or other sharp objects. Spears are good for throwing as well, but you must be close to your prey to hit it. Bamboo and any hardwood that can hold a point are good choices to use for spears. Softwoods generally don't make points, or they won't retain points for long.

When making a specialized spear, such as for fishing, make sure to use the correct tip. Fishing requires a barb on the point, so the fish doesn't get off, which means you lose your dinner. Remember, fish like light and shiny things. If you can



put something shiny in the water to attract fish, you can spear them. See the picture below of the bamboo spear with a washer and some colored string attached to it. By pulling on the string, you lure fish in for the kill.





#### Bow and arrow

These are generally ineffective because most people can't build a bow powerful enough to inflict damage. Bows may be good for fishing, however.

#### Bows

You can make a bow by shaving down the sides of a 3-to 6-foot piece of hardwood, such as hickory. Shave down the sides only on the inside, the part that will face you. Leave the outside of the piece untouched. Don't shave the middle piece of about a foot, but shave both ends, making the bow thinner the farther to the ends you go. Once you shave it down, put your string on. You can also use multiple saplings tied together.

Survival Tip: String bows when you are ready to use them, and unstring when you are not. These bows will warp under continual strain.

To properly string a bow, place the string at one end of the bow. Straddle the bow with the string to the outside. Pull the bow around using one leg to anchor the bottom and the other to be the bending bar. As you pull the end over, attach the other end of the string.

#### Arrows

The arrow may be the hardest to make. Use a straight stick with a point. Add fletching, like plastic or feathers, to help keep the arrow stable.



#### Bola

A bola is three rocks attached to strings that are tied together. Use an overhand knot to tie all three at once. Take two fingers and place them in the strings. Whirl the rocks a few times around your head and toss it at a small animal. You may be able to trip the animal, or knock it out with the rocks. Ensure the rocks are secure or you may be injured.

## Edged tools

You need edged tools for many things, from cooking to creating shelters and more. You can find some naturally occurring edged rocks like flint. Also many rocks, when broken, will reveal at least one edged side.

## Knives

Knives are basic, and they have three basic functions:

- puncturing
- slashing
- chopping and cutting

A knife is also an invaluable tool used to construct other survival items. You can make knives from nearly any hard object. We will discuss how to make a knife from stone and bone.

#### Stone

To make a stone knife, simply drop or hit the stone with another stone, and see if sharp flakes come off. Using this method eliminates possible injury while chipping, but it can also leave you with small pieces of rock that you can't turn into a knife. It will take practice to get proficient. To make a stone knife the old-fashioned way:

- Find a rock you believe can be chipped into a sharp object.
- Find a chipping tool and a flaking tool. A chipping tool is a light, blunt-edged tool used to break off small pieces of stone. A flaking tool is a pointed tool used to break off thin, flattened pieces of stone. You can make a chipping tool from wood, bone, or metal, and a flaking tool from bone, the points of the antlers, or soft iron.

- Chip away at the edges and make a point at one end and a sharp, most-likely serrated edge along a side. (You can also make both edges sharp, if you like). Be careful not to push any flaked pieces into your hand or leg when you're chipping at the edges.
- Use the flaking tool to sharpen the edges even more.
- Wrap one end, which will create a "handle" for your new knife.

#### Bone

You can grind bone to a point and sharpen an edge that may make it capable of cutting.

## Signaling

If you become lost, how will others find you? What resources do you have at hand that can help rescuers find you from the ground or the air?

#### Being seen and heard.

If you want to be found, your rescuers must see or hear you-preferably both.

#### Making yourself seen

- Wear bright clothing.
- Make your shelter bright.
- Jump up and down, as you wave bright clothing in a deliberate manner (not too fast though).
- Hang extra clothing around you to attract attention.
- Using markings on the ground such as the words SOS or HELP.
  - » Trace the words in the ground using your heel or a pole. Make the words big enough to be seen from above.
  - » Use logs or rocks to make the words.
- Create a high, smoke-producing fire during the day (use wet wood), and make a bright fire at night (dry wood). Keep a good bunch of fast-lighting tinder on hand at night. If someone comes near, throw tinder on the fire, which will make it look like a bomb went off.
- Use a reflective device, such as a mirror or CD, to signal rescuers.
  - » To signal with a mirror, pick out a distant object that will cross the path of whomever's attention you want to attract.
  - » Shine the sunlight to where you can see it and draw it up to the object.
  - » Slowly work the reflection back and forth, giving it a beacon effect.

#### Making yourself heard

- Use a whistle (or use your lips).
- Yell.
- Clap.
- Bang wood together.
- Slap two boards together.
- Bang rocks together.
- Bang metal together.
- Throw rocks into water.

#### Conclusion

This ends the survival lessons for now. This is just the beginning for you though. You need to do a lot of homework to become good, practiced survivalists. Keep your faith, your wits, and a will to succeed—and you'll survive and share the gospel with people who need to hear it.








**Teaching Guide** 

-18-

by Jim Burton



# Teaching Guide by Jim Burton

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# **Teaching Guide Introduction**

In a high-tech world where the bells and whistles constantly get the attention and allegiance of youth and young adults, there likely will come a point for many when all of the buzz becomes a bore. Like every generation, today's youth and young adults at some point may ask the question, "Is there more to life than my iPod, cell phone, and MTV?"

For Christian youth and young adults, the answer is a resounding yes. Christfollowers can be sure of one thing—being in the center of God's will is never boring, particularly when they center on the adventure of missions. There are few life objectives where they'll find as much meaning and fulfillment as missions, particularly extreme missions.

The Last Frontier Survival Training Manual addresses the desire of youth and young adults to radically define their faith expression and align it with the Great Commission.

As the title of this missions-learning resource indicates, it's not your father's or mother's mission education. The Last Frontier Survival Training Manual represents one of the most challenging and specialized dimensions of missions—preparation for reaching the "uttermost parts of the earth."

That means this course isn't for every student in your church or Baptist Collegiate Ministry (BCM). Unlike many of the new resources available from the North American Mission Board (NAMB), the Last Frontier Survival Training Manual is not a drop-in mission education resource (DIME) that can be used in existing ministries such as Sunday School (<u>www.namb.net/dime</u>). This training is intense, specialized, and will require a huge commitment from teacher and student alike.

This training takes a high commitment level to reach unreached people groups in out-of-the-way places. God doesn't call everyone to this type of assignment. However, knowing the heart of God, we can be sure that He is still calling young men and women to finish the task of world evangelization. This *Last Frontier Survival Training Manual* will cast that vision while preparing young people for one of the greatest adventures in missions.

# Who should teach this course?

The Last Frontier Survival Training Manual is not about campcraft. Survival training is many notches above what many of us typically associate with a weekend camping trip.

The people teaching this course will likely be those who enjoy being outdoors and have experienced being outdoors for extended periods of time. They may have quality camping skills but may not have survival experience. For them, this will be a learning experience they share with their students.

The best scenario would be to recruit someone who has training in survival techniques. This might be a former military person, perhaps someone who trained as a Navy Seal, Army Ranger, or Green Beret. Many churches and BCMs may not be able to recruit a person with this background. If not, look for someone who is interested, highly motivated, and willing to invest eight to 10 weeks in this course.

We recommend that the course leader have an assistant as well. It may be best for this assistant to be of the opposite gender of the lead teacher since your students will include both males and females.

















# Who should take this course?

As mentioned earlier, this survival-training course is not for your entire youth or collegiate group. First, this course will not interest every student. Second, not every student qualifies for survival missions.

Students with interest in developing survival skills for missions will likely be ones who show spiritual maturity beyond their years, participate in mission trips, are active in all aspects of the church or collegiate ministry, and give some indication of a call toward missions in the last frontier.

Because of the maturity level this course requires, our recommendation is that churches and BCMs offer it only to high school students, collegians, or young adults. This is not for middle school students. Their time will come.

The commitment to this course is no small matter for you or the students. This will take considerable time and effort. The teaching sessions will last 90 to 120 minutes each week, so they will require a special day, place, and time separate from typical church or BCM ministries.

An ideal class size would be about 10 students with you and an assistant leading. There should be at least two students of each gender. Yes, many young women are committing to extreme missions challenges. You will find that young women will be among your best students.

# Where should this class meet?

Ideally, you will teach most of this course outdoors. Unfortunately, unless you can hold the class on Saturday morning or afternoon or Sunday afternoon, it is more likely that you will teach many of these lessons indoors (on a weeknight). That will allow you to schedule sessions at times that do not interfere with normal youth or collegiate ministries.

Following the eight weeks of interactive study and teaching, leaders and sponsors can take the students on a one- or two-day practicum that allows participants to implement their new skills in a simulated survival environment. Many state Baptist conventions have camps that could readily host such a weekend. Other survival-practicum locale options include state or national parks.

# How should this class be taught?

As the course leader, you will do much of the teaching through participatory class lessons. These lessons will require props and activities for the students.

Because the ultimate objective is to help each student establish a new skill set, many of the lessons recommend that you make assignments that students complete before classes. They can photograph or video their projects then show and explain them in class. Their assignments will require much time and effort. For instance, the session on shelter means the students will have to go to a wooded or desert area beforehand and build the type of shelter you have assigned them. When this happens, we recommend that you make the assignments by twos (same gender). Not everyone will create all of the shelters. Make various assignments so students can learn from one another. Your class won't be large enough to cover all of the options. You can cover the remaining options through class lecture.

This course will require a major time commitment from you and the students. Many students will need to take this course during a semester when their course work is lighter than normal. Though college credit is not available for this course, they will likely feel like it should be.

# What will this course do for the students?

The Last Frontier Survival Training Manual and this course will NOT make the students "experts" in survival techniques. Instead, the purpose is to cast a vision among today's high school students, college students, and young adults and challenge them to take the gospel to unreached people groups. Any expertise these students might gain will come from much more training, college courses, and mission experiences.

Each lesson begins with information about a last frontier, unreached people group. Do not neglect this part of the teaching. For your students to participate in eight weeks of training and not understand how much they are needed

in remote, Third World, frontier missions, would be a failure. They also need to see themselves living extraordinary mission adventures. So please prioritize these unreached people groups at the beginning of each lesson.

To familiarize yourself more with the challenge of unreached people groups, you can visit <u>www.peoplegroups.org</u>. Please note that unreached people groups even exist in North America. An unreached people group has less than 2 percent of their people identified as evangelical Christians. So besides learning about unreached people groups on the other side of the globe, your lesson plan could include engagement with unreached people groups as they assimilate into North America.

# How will we know if this course has been successful?

You will know that students have learned what they should when they use the survival skills taught in the Last Frontier Survival Training Manual in a simulated survival excursion. After teaching the eight sessions, you will be taking the class on a survival practicum that lasts at least one to two nights. Participants will take only what they can carry. Once you reach the designated area, divide the students into teams of two, then send them out from there to create their camps. They will find water, food, and create a shelter using the skills learned from the eight sessions.

Where can this happen? Many of the state and national Baptist conventions have camping facilities that could host these survival practicums. During the fall and spring semesters, many of the state and national conventions will be tracking the churches and BCMs that are teaching this course and planning a simultaneous survival practicum weekend. That means multiple churches and BCMs could gather at the same time to practice their skills. This might allow for more opportunities for debriefing and potential interaction with a simulated people group.

Before beginning this course, please contact your state or national Baptist convention's mission education team to determine what options are available within your state or national Baptist convention. (A list of these convention offices can be found at <u>www.namb.net</u> by clicking on the partner link at the top of the page.) Other options include using state or national park facilities.

# What are the desired outcomes?

Upon completion of the Last Frontier Survival Training Manual course, students and leaders will be able to:

- Articulate the challenge and urgency of completing last frontier missions.
- Articulate the challenge of taking the gospel to remote unreached people groups.
- Plan and participate in a short-term survival excursion to practice many of the skills taught here.
- Discern their calling to engage in ministry among unreached people groups.






# Getting 'Psyched Up' for the Mission



# **Before the Meeting**

survival tool.

can be the most important

The first of eight sessions on survival training will set the tone for the entire course. Your students will likely enter with some degree of trepidation, since this will likely be new territory for them. If possible, secure a room beforehand and decorate it to resemble an outdoor setting. Likewise, have available a backpack, items from the sample packing list (on page 11 of the manual), and some items likely to be used in a survival experience but not on the list along with some items not likely to be needed.

Each student should have a copy of the Last Frontier Survival Manual available from <u>www.namb.net/survival</u>. Students should read the sessions before your teaching time. Most weeks, you will make some assignments ahead of time to facilitate teaching. Also, make sure each student brings a Bible to every session.

# **Teaching Plan**

Welcome the students as they arrive, and encourage them to look around at the items you collected and displayed.

Begin the teaching time in prayer. Ask God to use this course to create a fresh vision among the students for lostness in our world, particularly among unreached people groups. Ask God to help students as they learn multiple new skills related to outdoor survival, and that with each skill, God would arow their confidence to accept the challenge of reaching the last frontier.

Ask students, "If your school prepared enough food each day for one student, who should get that meal? How might students compete to get that food? If there is no other access to food (i.e., going off campus, bringing your lunch) how would hunger impact the learning experience and quality of life on your campus?"

Tell students about the Mascho Piro people of Peru and how their food sources are declining because of logging and increased competition with other tribes for remaining resources. But that's not the only challenge for last frontier missions.

Tell students that because of their isolation, the Mascho Piro have not been exposed to many of the diseases that are common in developed countries. Therefore, outbreaks of common illness or even the flu could be devastating to their small population.

Ask students, "How would you take the gospel to an Amazonian people group that fears outsiders?"

Ask students, "What logistical challenges would you face in reaching the Amazon region of Eastern Peru?"
Have someone read Psalm 121:1-8. Interpret these verses as they relate to the physical realities of many unreached people groups.

**Ask** a student to lead in prayer for the Mascho Piro of Peru, asking for God's protection over them and for laborers who will respectfully and wisely take the gospel there.

**Tell** students that this week will be an overview of the eight-week course on survival training. Each week the students will memorize a verse related to that theme.

**Have** someone read Acts 1:8. Ask students, "How does this verse apply to us today?" Remind students to memorize this verse and each lesson's key verse(s).

**Tell** students that their generation has the resources to complete the task of Acts 1:8, particularly as it relates to remote people groups.

**Ask** students, "Where does survival training begin?" Survival begins with faith. Allow students to respond to that observation. Ask them to agree or disagree and to support their position.

**Ask** students what their faith in God has meant to them thus far in their life. How does it make them feel that God could use this course to challenge their faith to new levels of commitment?

**Tell** students that beyond the faith elements of survival training, they must also consider mental and physical well-being.

**Review** the four core principles on page 5 of the manual. Lead the students in discussion about these. Do they question any of the principles? Why or why not? How have students already experienced some of these principles?

Introduce the principles of Faith, Know, and LLive.

#### Faith

Have a student read 2 Corinthians 5:6-8. Ask, "How do these verses apply to survival training for missions?"

**Discuss** the faith dimensions of reaching the last frontier with the gospel, especially given the challenges each missionary will face.

**Share** the football illustration and ask the students to discuss the story. How might the lessons from the illustration apply to missions?

**Review** what can happen if a person's mental fortitude is low. This is found on page 6 of the manual.

Tell students, that besides the list on page 7 of the manual, there are two other possible reactions: fear and panic.

Ask students to talk about how serious these responses could be on a survival journey.

**Review** the list of negative effects of fear and panic on page 7 of the manual.

Tell students that fear and panic can destroy you and your ability to think through problems.

Ask a student to read 1 John 4:18 and to discuss its content.

#### Knowledge

**Ask** students, "When it comes to knowledge in survival situations, what's the most important thing for you to know?" (The answer is their abilities and limitations.)

Ask students, "Is it a strength or weakness to admit your limitations?" (Clearly, it is a strength.)

**Ask** students what they need to know before beginning a difficult survival journey. (Answers include people group info, terrain, weather, food, etc.)

**Ask** students what is available today that explorers and missionaries would not have had 100 years ago? (Answers include: GPS, satellite phones, waterproof and lightweight materials.) All of these advances make the last frontier more accessible.

#### Location

Ask students, "How important is it to know at all times where you are? How would that apply to being in a remote location?" (Access to food, water, shelter, etc.)

**Show** students a terrain map. Ask them to assess the map's information to determine what assets the area offers them for survival.

#### Leadership

Use the following initiative to demonstrate the importance of leadership.

**Tell** students to rearrange the room to make it more efficient for the remaining teaching time. Now, wait and see what happens. Observe whether they choose a leader ahead of time or whether one emerges. Talk about how effective leaders give purpose, motivation, and direction in completing a task.

Ask students to verbalize the importance of leadership. Are the students willing to submit to one another's leadership?

#### Improvise

This section will emphasize creativity in finding a use for whatever we have.

**Show** students a stick. Ask them how it might be used in a last-frontier missions initiative.

#### Value

Ask students, "Are you concerned about safety on a day-to-day basis? What about safety as it relates to survival training?"

Ask students, "If you get hurt on a survival trip, what's your primary objective?"

Ask students what they think they really need for a survival trip. Ask, "How important is it to be strategic in what you carry?"

#### Environment

Tell students that three environmental issues will be imperative: terrain, weather, and nature.

Ask students if they agree or disagree, and why?

#### Packing

The first session will close with the group working together to put the materials on the packing list into a backpack.

**Ask** the students to surround a table. Then pour the items from the packing list onto the table along with the backpack. Include a few items not on the list. Some might be likely items to pack for a survival experience while some are not so likely. Instruct the students to prepare the backpack for a two-week wilderness journey. Do not provide further instructions.

Stand back and watch the students work. Observe the group's relational dynamics and how well they work together to accomplish the task. Once the students have finished packing, debrief the exercise both in terms of how they made things fit and how well they worked together.

**Review** the basic survival needs listed on page 9 of the manual: food, water, shelter, first aid, and signaling. How did the students prioritize these in their packing?

# Closing

**Remind** the students that this will be a challenging and exciting study, one that could have eternal implications should God call them to be a missionary to the last frontier.

Ask the students if they have any questions or concerns before closing.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or two-day survival practicum that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

**Pray** for the students and their preparation for next week's class.

- Ask students to read the week 2 material from their student manual.
- Either prepare water-gathering, water-filtering, and/or water-purification material (in week 2 of manual) to display next week or assign the students to do so.
- Assign a student to do research on the Hung-Tum of Laos and to lead the discussion next week about this unreached people group.
- Contact your state or national Baptist convention to inquire about survival practicum opportunities.






# Water, Water Everywhere–But None to Drink?



**Bible Memory Verses:** 

"On the last and most important day of the festival, Jesus stood up and cried out, 'If anyone is thirsty, he should come to Me and drink! The one who believes in Me, as the Scripture has said, will have streams of living water flow from deep within him'" (John 7:37-38).

#### **Before the Meeting**

The second of eight sessions dives into one of survival training's most important topics-water. This lesson will explore multiple ways to secure and purify water in remote locations. Likewise, the details and realities of this and the remaining sessions will create its own filter for your class. Your students will quickly see that survival training isn't all fun and games. Do not be surprised if some of the students drop out after this session. The knowledge they gain in this and remaining sessions can make the difference in surviving difficult missional challenges.

Interaction in teaching facilitates learning. Students cannot learn the lessons in this manual without practice. This week's session includes multiple ways to discover and purify water. Students need to be aware of each of these techniques. Further, they need the experience of capturing, filtering, and purifying water themselves. You can engage the students by making assignments beforehand, asking the students to build and model the different water purification techniques discussed in this chapter.

Like many of these sessions, the best teaching environment will be outdoors. That may not be possible given the time of year and the time of your meeting. If you are teaching indoors, please consider this when planning the lesson and engaging the students in demonstrations about water hydration. An option is to assign students projects beforehand, such as demonstrating the water-distilling techniques. The students can make their stills before the meeting, then photograph or videotape their project. Please account for this and make provisions for the students to present their projects. This provision will likely include a laptop computer and LCD projector.

#### **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at the water purification set ups that their fellow students or you have prepared beforehand.

Begin the teaching time by opening with prayer. Ask God to use this course to create practical knowledge concerning hydration: finding water and making it drinkable. Give thanks to God that spiritually, we never have to go thirsty as Jesus sustains us with living water.

Ask students, "If you were on mission in Laos, what are some of the challenges you might face?" (The answers include their remote location and unique language.)

Ask students, "What is ancestor worship?"

**Tell** students, the mountains of Laos have many ethnic people groups, including the Hung-Tum. The Hung-Tum represents two groups that each speak their own language. Little is known about these groups except that their religious practices include a mix of ancestor worship and Buddhism.

# Teaching Guide | Week Two: Water

**Ask** students, "If a people group of less than 800 people has not heard the gospel, are they worth the effort?" (The answer is yes as the Bible indicates that the gospel is for all people. And among the Hung-Tum, some estimates are that their people group will grow to several thousands since the average female has seven children.)

Ask students, "What strategy would you offer for reaching the Hung-Tum of Laos?"

**Lead** the students to pray for the Hung-Tum of Laos, asking that God would make a way for them to hear the good news about Jesus Christ. Ask God to show your students how He might use them to deliver that good news in their native language.

Have a student lead in prayer for the Hung-Tum people of Laos.

Tell students that this week will introduce them to the critical issue of hydration.

**Have** someone read John 7:37-38. How does this verse apply to this week's lesson on hydration? Remind students to memorize these verses and each lesson's key verse(s). Divide the students into twos and ask them to recite these verses and last week's verse, Acts 1:8.

**Review** the introductory material on page 15 of the manual about the physiology of hydration and how dependent each person is every day for pure water.

**Review** the material on page 15 of the manual about what not to drink as you dispel some common myths about hydration sources.

Tell students about the two primary rules for drinking water in remote locations on page 15 of the manual.

**Ask** what is the one collection technique that may be safe enough to gather drinkable water without further purification? (The answer is to collect rainwater in clean plastic containers.)

**Note** that the advice concerning boiling water on page 15 of the manual only applies at sea level. At higher altitudes, it will take longer for water to reach boiling temperatures and may require longer times to boil. Higher altitudes also require more daily water intake as well.

#### **Finding Water**

**Review** the section on finding water beginning on page 15 of the manual. If you have assigned these options ahead of time, allow the students to lead the discussion on their assigned water source.

**Tell** students that beyond the potential water sources they've just studied, there's yet another step for finding pure, drinkable water—stills.

Tell students there are two options for distilling water in remote locations: above ground and below ground.

**Note:** This section on four water-distilling methods might work best if several students-two per method-have assignments beforehand to either prepare an above-ground or below-ground still. The teaching time could be spent allowing the students to explain how they prepared their still followed by a group critique of their technique and results. If it's not possible to demonstrate the water-distilling methods during this session, ask the assigned students to complete the project beforehand and to photograph or video their work. You will need to make plans for the students to project their photographs or video during this session.

**Tell** students that collecting water is only half the challenge. Now, they must purify the water before consumption. Safe water consumption begins with the assumption that all water is contaminated.

#### **Filtering Water**

**Review** the possible diseases on page 19 of the manual that one could contract with unsafe water. Yes, the purpose of this section is to give the students a healthy respect for proper hydration techniques and the consequences of cutting corners.

Ask students, "What's the best way to remove 'nasties' from water?" (The answer is boiling.)

**Ask** students, "What shortcuts can you imagine people taking when they are thirsty?" (The answers might include filtering water through clothing, drinking from the clear water from the top of a stream, etc.)

Tell students that most water sources will require filtering as the first step of water purification.

**Review** the filtering basics on page 19 of the manual. You may want to bring a portable water filter pump. These are handy, but remind students that logistically they may not be able to carry one on a remote mission trip.

**Ask** students, "What is the primary purpose of a portable filtration device?" (The answer is to strain debris and small organisms. A handheld portable water-filtration device should make the water clearer. Purification is a separate step.)

Note: This section on building water filters represents another good assignment for the students. In groups of two, the students can demonstrate the three basic water-filtering techniques in the classroom or record themselves doing so beforehand.

**Review** the three methods for water-filtering systems on page 20 of the manual. Have a sample of each method set up in the classroom.

Tell students that once they filter their captured water, the next step is purification.

#### **Purifying Water**

**Review** the two primary techniques for water purification-boiling and chemicals. Discuss the advantages and disadvantages of each.

Tell students to allow 30 minutes after purification to give any chemicals used a chance to work.

**Review** the hydration challenges and methods for meeting hydration needs. Remind students that they must secure, filter, and then purify water.

#### Closing

**Tell** students that this lesson on hydration should convince them of the importance of preparation and time management. Something as simple as drinking water isn't so simple in remote locations. Hydration is so critical that an adventuresome missionary's time can be consumed with maintaining a steady supply of water.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or twoday outing that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

**Pray** for the students and their preparation for next week's class.

- Ask students to read the week 3 material from their student manual.
- Either prepare shelters (in week 3 of manual) to display next week or assign the students to do so.
- Assign a student to research the Baras of Indonesia and to lead a discussion about this people group next week.
- Continue any preparation needed for the survival practicum.



# Home Sweet ... Hut?



## **Before the Meeting**

The third of eight sessions will focus on the practical challenge of creating a shelter in any potential survival scenario. Much like water purification, shelter skills can make a big difference in the success or failure of a mission.

Demonstrating each shelter option will not be practical in one setting. However, because much of survival training is about creativity and improvisation, please try to cover the various shelter types. One can never know where a student might get a good idea that helps them in a real-life survival scenario.

It is recommended that this course culminate in a one- to two-day survival expedition, probably near your church. Please contact your state or national Baptist convention mission education leader to determine options that might exist at state Baptist camps.

As you plan the survival outing for your students, think about the shelter technique that will best serve them. For instance, if your survival outing is in Appalachia, then teaching about beach shelters would not be time well spent. Given the vast number of sheltering options, choose the option that will work best for your students and help them gain the necessary skills for that location. Because of the skill set these students will need in remote missions locations, we recommend that tents not be used. The students should build their shelters out of native materials and the few items they are able to carry with them.

Interaction can again facilitate learning. Students cannot learn the lessons in this manual without practice. Because this week's session includes building shelters, students should be assigned at least a week ahead of time to build a shelter. Working in teams of two, the students may be able to replicate their shelter in a classroom setting. However, if that is not possible, ask your students to photograph or video their shelter and its construction before class. Please account for this in your planning and make provisions for the students to present their projects. They will likely need a laptop computer and LCD projector.

# **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at any materials or shelter set-ups that their fellow students or you have prepared.

Begin the teaching time with prayer. Ask God to use this course to provide students with practical knowledge concerning shelter. Give thanks to God that, ultimately, He is our shelter and protection.

Ask students, "Have you ever been overlooked in a crowd? How did that happen, and how did it make you feel?"

# Teaching Guide | Week Three: Shelter

**Ask** students, "How challenging might it be to govern a nation of more than 13,000 islands stretching wider than the continental United States made up of multiple ethnic groups? Does such a nation exist?" (*The answer is Indonesia*.)

**Tell** students about the Baras of Indonesia, including where they live, and how their population is only an estimated 300 people. Missiologists know little about the Baras except that their language may become extinct. Indonesia is the largest Muslim nation, and the Baras mostly practice Islam.

Ask students, "What steps must be taken before implementing an effective strategy to reach the Baras?"

**Lead** the students in prayer for the Baras of Indonesia, asking God to prepare their hearts for the gospel. Ask God to raise up Christ-followers with a heart for the Baras who will take the good news to them.

**Tell** students that this week will introduce them to the challenge of creating a shelter in a survival scenario.

**Have** someone read Matthew 6:34. How does this verse apply to this week's lesson on shelter? Remind students to memorize this verse and each lesson's key verse(s). Divide the students into twos and ask them to recite this verse and last week's verses, John 7:37-38.

**Review** the introductory material on page 25 of the manual about determining the type of shelter one will need in a remote location.

Ask students, "How will temperature determine your shelter choice?" Use the illustration about crickets to demonstrate how nature even provides temperature gauges.

**Review** the points concerning ideal shelters on page 25 of the manual.

Ask students to name the considerations for proper site selection. The answers are on pages 25-26 of the manual.

**Review** the WWARMM Water acronym on pages 25-26 of the manual for site selection criteria.

**Ask** students, "How important will comfort be to you on a survival expedition?" Beyond trying to simulate the typical comforts we enjoy, the primary objective will be to reduce stress by getting good rest.

Ask students, "Because you probably won't be able to carry a sleeping bag (too much space, weight, etc.), how might you create a bed in the wilderness?"

**Remind** students that their assignment will involve a considerable amount of hiking, so the practical value of carrying much weight isn't reasonable. Therefore, they are not likely to carry a toolbox on a trip.

Ask students, "How are you going to create tools that facilitate shelter building?"

Ask students, "How can you prepare a possible shelter site?" Answers are on pages 26-27 of the manual.

Ask students, "How do you avoid water problems with your shelter?"

Ask students, "What consideration should you give to the ground when choosing a shelter site?"

Ask students, "What safety issues should you consider when choosing a site?"

#### How to build a shelter

The bulk of the learning on shelters will take place with this exercise. Knowing beforehand where the class will conduct its survival outing, choose the shelter methods that will most likely apply. Then assign the students, by pairs, to build a shelter appropriate for that location.

Some students may be able to bring their shelter to a classroom. However, most will need to build the shelter and document their steps with photographs or videos. Allow the students to make a presentation with their visuals and explain the following:

- Why they chose the site
- What materials they brought
- What tools they made onsite
- What they will do differently on the group's survival outing

After allowing the students to make their presentations, use the remaining time to teach about the shelters in the manual that the students did not use.

Ask students, "Based upon what you've either learned or observed in this shelter-building exercise, how will you pack and prepare for a survival outing?"

#### Closing

**Tell** students that when coupled with the lesson on hydration, sheltering should convince them of how important preparation and study can be before a survival expedition. There is much to consider both in God's call to missions and the preparation to be on mission.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or two-day outing that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

Pray for the students and their preparation for next week's class.

- Ask students to read the week 4 material from their student manual.
- Either prepare fire-starting or fire-laying material (in week 4 of manual) to display next week or assign the students to do so.
- Assign a student to study the Yagnobi of Tajikistan and to prepare a presentation for next week.
- Continue any preparation needed for the survival practicum.



# I Have Created Fire!



# **Before the Meeting**

The fourth of eight sessions introduces students to one of survival's most important skills: creating and managing fire. Students will need this skill as they boil water for purification, prepare food, and stay warm.

Interaction in teaching facilitates learning. Students cannot learn the lessons in this manual without practice. This week's session includes multiple ways to create and manage fire. Students need to be aware of each of these techniques. Further, they need experience identifying combustible materials, igniting a fire, and maintaining safety with the fire they create. You can engage the students by making assignments beforehand, asking the students to model the different fire-related techniques in this chapter.

Like many of these sessions, the best teaching environment on fire will be outdoors. That may not be possible given the time of year and the time of your meeting. So if you are teaching indoors, please consider this when planning the lesson and engaging the students in demonstrations about fire. An option is to make student assignments beforehand. The students can practice their fire starting, usage, and safety skills before the meeting, then photograph or videotape their project. Please account for this in your planning and make provisions for the students to present their projects. They will likely need a laptop computer and LCD projector.

## **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at any props related to fire that their fellow students or you have prepared beforehand.

Begin teaching by opening with prayer. Ask God to use this lesson to create practical knowledge concerning fire. Give thanks to God that spiritually, we have the light of Christ to dispel the darkness of lostness that surrounds us whether we are in a distant land or ministering on our campus.

Ask students, "Who can tell us where Tajikistan is?" (It's in Central Asia.)

**Ask** students, "What's the longest time you were out of school because of snow?" After several responses, follow up with, "Can you imagine being confined for months with your family in a small structure wrapped in goatskins to stay warm while the snows melt?"

**Tell** students about the Yagnobi of Tajikistan, whose name means "ice river." Located in a mountainous region, the Yagnobi's practice Islam and sometimes mix their practice with Zorastrianism. Tell students about the fiery caves below the Yagnobi's homeland and how that may have influenced the religion of Zorastrianism.

Ask students, "How could God use you to teach the Yagnobis about an eternal flame—God's Holy Spirit—that can warm them for eternity?"

**Lead** students in prayer for the Yagnobis, asking God to protect them from their harsh winters and enlighten them to the truth of the gospel. Ask Him to raise up people who love the Yagnobis and will invest their life ministering to them.

Tell students that this week will introduce them to the critical issue of fire.

**Have** someone read Ephesians 5:8. Ask, "How does this verse apply to this week's lesson on fire?" Remind students to memorize this verse and each lesson's key verse(s). Divide the students into pairs and ask them to recite this verse and last week's, Matthew 6:34.

**Review** the introductory material on page 37 of the manual about the importance of fire and how it can be harmful.

#### **Basic Fire Principles**

**Review** the material on page 37 of the manual about basic fire principles and the fire triangle-oxygen, heat, and fuel.

**Review** the material on page 37 of the manual concerning the positives and negatives of both wet wood and dry wood.

#### What's Needed to Build a Fire

Ask students, What must you have to build a fire? (The answer is kindling, tinder, and fuel—page 38 of the manual.)

**Review** the types of tinder, kindling, and fuel on page 38 of the manual.

Ask students, "What are some factors that will determine your fire-starting method?" (Answers are on page 38.)

**Review** the survival tip on porous rock and its potential to explode. If possible, have a porous rock in the classroom.

#### **Igniting Your Fire**

NOTE: Students can teach this section if you made assignments beforehand. If teaching outdoors, some students may be able to do a live demonstration of the fire-ignition techniques and fire types. However, because you want the students to understand various methods, allowing students to make a presentation using photographs or video of their assignment will work well. Be sure that whether you are teaching or allowing the students to demonstrate the techniques, both the old and new methods of ignition are taught, plus the types and uses of fire on pages 39-42 of the manual.

## Closing

**Tell** students that this lesson on fire represents one of the most important safety issues in survival training. Fire is a gift from God, and our management of fire when on remote mission trips should reflect positive creation care.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or twoday outing that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

Pray for the students and their preparation for next week's class.

- Ask students to read the week 5 material from their student manual.
- Either prepare food-gathering materials (in week 5 of manual) to display next week or assign the students to do so.
- Assign a student to research the Ik of Uganda and to lead next week's people-group discussion.
- Continue any preparation needed for the survival practicum.






# Supersize that #3 Squirrel Burger Please!



## **Before the Meeting**

The fifth of eight sessions introduces students to one of their greatest challenges—nutrition. Students will need this skill to sustain themselves when on survival missions.

This may be one of the most difficult lessons to teach since it includes methods for capturing and foraging for food. Because the course culminates in a one- to two-day camping trip, it might seem convenient to gloss over this lesson. However, to give the students a complete overview of survival training, it is important to give this equal and thorough treatment.

Interactive teaching will facilitate learning. Students cannot learn the lessons in this manual without practice. This week's session includes multiple ways to gather and prepare food. Students need to be aware of each of these techniques. Further, they need experience with the process of identifying potential foods and the resources in nature that either identify those foods or provide resources for capturing the food. You can engage the students by making assignments beforehand, asking the students to model the different food techniques in this chapter.

Like many of these sessions, the best teaching environment on food will be outdoors. That may not be possible given the time of year and the time of your meeting. So if you are teaching indoors, please consider this when planning the lesson and engaging the students in demonstrations about food. An option is to make student assignments beforehand. The students can practice their food capturing and preparation skills before the meeting, and then photograph or video tape their project. Please account for this and make provisions for the students to present their projects. The students will likely need a laptop computer and LCD projector.

## **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at any props related to food that their fellow students or you have prepared beforehand.

Begin teaching by opening with prayer. Ask God to use this lesson to create practical knowledge concerning how to find and prepare food in the wild. Give thanks to God that He has wonderfully and marvelously made us and that our bodies are His temples. Thank God for the nutrition we receive from food and ask Him to make us wise, since choices will be made in the wild to sustain us.

**Ask** students, "To what degree should you be like the people around you?" (The answer depends on the behavior of the surrounding group. If group behavior honors God, then we may join others. If not, wisdom says that we should abstain from those group behaviors.)

Ask students, "How readily do college and high school students follow cultural trends?" Identify some current trends reflected by the participants.

Ask students, "When you go to a new place—even a very remote place—how important is it to adapt to the local culture?"

**Tell** the story of the lk people of Uganda and how recent violence, famine, and relocation has radically changed their subsistence-level. Describe their location between two warring peoples, and how they build their mountain villages with defense in mind.

Ask students, "What would Jesus' message be to those who are oppressed?" Read and explain Matthew 11:28.

**Ask** a student to lead in prayer for the lk people group of Uganda, asking God to show how the gospel can be fully expressed among isolated and oppressed people.

**Tell** students that this week will introduce them to an issue that's close to every student's heart—food.

**Have** someone read Matthew 4:4. Ask, "How does this verse apply to this week's lesson on food?" Remind students to memorize this verse and each lesson's key verse(s). Divide the students into twos and ask them to recite this verse and last week's verse, Ephesians 5:8.

**Review** the introductory material on page 45 of the manual about finding food. Remind students that just as water purification and shelter are time consuming, so will be the finding or capturing of food sources. Explain the advantages and disadvantages of both vegetarian and meat diets.

#### Hunting

**Review** the advantages and disadvantages of hunting on page 46 of the manual, and the three basic ways to hunt: blind, stalking, and flushing.

**Note:** As you move into the section on techniques for catching wild animals, it would be helpful to have some of the techniques illustrated with displays if you are teaching in a classroom. It may not be practical to display each example given, so focus on the ones your students will most likely use on the planned group outing at the end of the course. As with other lessons, assigning students to demonstrate the different techniques can greatly enhance both teaching and learning. You can put together a plan that assigns groups of two to demonstrate various techniques.

Ask students, "When would you typically use a trap or snare?" You should use a snare or trap when you do not have time to hunt the animal or you want to set the trap in multiple locations to increase your chance of catching something. Snares and traps also work best with smaller animals. Ask students, "What should you avoid when setting a trap or snare?" (The answer is handling the trap or snare so much that you leave your scent on the materials.)

**Review** the advantages and disadvantages of traps and snares on page 47 of the manual.

**Demonstrate** (or have students demonstrate from their assignments) the various traps and snares on pages 47-52. The lesson should not just focus on how to do each technique but on when to use which technique as well.

Tell students that besides trapping or snaring mammals, food can also be found in rivers, streams, lakes, and the ocean.

**Review** the list of fish to avoid on pages 52-53 of the manual.

**Demonstrate** (or have students demonstrate from their assignments) the various fishing techniques on page 53 of the manual. The lesson should not focus just on how to do each technique but on when to use which technique as well.

**Review** the fishing tips on page 54 of the manual.

**Ask** students, "Once you have caught or captured a mammal or fish, what are you going to do with it?" (The answer is they must prepare the bounty for cooking.)

**Review** how to skin various animals on pages 54-55 of the manual. Spend most of the time on the animals section and the two methods on pages 54-55.

**Ask** students, "Once you have gone through the trouble of capturing, preparing, and cooking food, what are you going to do with the leftovers?" Talk about ways to preserve meat.

**Tell** students, "When all else fails, there's always bugs and worms." Review the indicators of unsafe insects on page XX. Remind students that preparing a worm for consumption may not sound scrumptious, but it is one of the simpler nutritional options.

Tell students that there's another option for food—plants.

**Review** some of the advantages a plant diet offers from page 55, and discuss some of the cautions related to plants.

**Review** the characteristics of plants to avoid on page 56.

Ask students, "What's the best way to determine if a plant is edible?" (The answer is the Universal Edibility Test.)

**Describe** the test and how it resembles a laboratory experiment. Students must be patient and wait to determine if any part of a plant makes them sick.

## Closing

**Tell** students that this lesson on food reinforces how challenging survival training can be. While human beings can survive longer without food than without water, it is not realistic to maintain their energy level or health without nutrition throughout their mission. Consuming some of the foods discussed in this lesson will stretch your student's comfort level more than most lessons. However, learning these skills is a small price to pay when aligning with God's command from Acts 1:8.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or twoday outing that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

**Pray** for the students and their preparation for next week's class.

- Ask students to read the week 6 material from their student manual.
- Either prepare first-aid exhibits (in week 6 of manual) to display next week or assign the students to do so.
- Assign a student to research the Buka-Khwe of southern Africa and to lead next week's people group lesson.
- Continue any preparation needed for the survival practicum.



# I Think I Might Have Broken My Liver!

# Main Survival Point:

The student will be able to manage personal injuries, particularly sprains, fractures, wounds, and burns (or frostbite, depending upon the season). The student will also be able to solve problems of personal hygiene and provide for personal daily needs in survival situations.

# **Bible Memory Verse:**

"But when He heard this, He said, 'Those who are well don't need a doctor, but the sick do'" (Matthew 9:12).

# **Before the Meeting**

The sixth of eight sessions introduces students to an as-needed skill set. This session on first aid and prevention is no less important than the time-intensive priorities of food, water, and shelter covered in previous weeks. Accidents do happen, even when we engage in the best of endeavors.

This may be one of the least-difficult lessons to teach, since it includes multiple first-aid methods. Because the course culminates in a one- to two-day camping trip, it might seem convenient to gloss over this lesson. However, to give the students a complete overview of survival training, it is important to give this equal and thorough treatment.

Interactive teaching will facilitate learning. Students cannot learn the lessons in this manual without practice. This week's session includes multiple ways to handle injuries, infections, and hygiene. Students need to be aware of each of these techniques. Further, they need actual experience treating injuries. You can engage the students by making assignments beforehand and ask the students to model the different first-aid techniques in this session.

Unlike many of these sessions, the best teaching environment on first aid may be indoors because of the number of scenarios you will cover. As with other lessons, you can make assignments ahead of time and facilitate peer learning by allowing the participants to demonstrate the assigned first-aid technique. Please account for this and make provisions for the students to present their projects. The students will likely need a laptop computer and LCD projector. However, you may find it more efficient to teach this lesson entirely yourself with many of the first-aid components illustrated here.

## **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at any props related to first aid and hygiene that their fellow students or you have prepared beforehand.

Begin teaching by opening with prayer. Ask God to use this lesson to create practical knowledge concerning how to respond to first-aid and other health-related challenges while on a remote mission. Give thanks to God for the knowledge we have today to respond to many of these challenges. Ask God to help each participant to become familiar and comfortable with the techniques covered in this lesson.

**Ask** students, "If you were on a mission to the uttermost part of the earth, what's one area where you might go?" (Among the answers might be Africa.)

Ask students, "What is it about the Africa that would present survival challenges for missionaries?"

**Tell** students about the Buka-Khwe of southern Africa, one of the oldest cultures on earth. This bushmen tribe may look primitive, but they have a highly developed social structure. The men are hunters, and the women are gathers. Decisions are made by consensus in the absence of a high tribal leader, and women participate fully, having a high status in the culture.

**Ask** students, "What challenges might you expect the Buka-Khwe to face?" Tell how development, wars, and natural disasters have narrowed their habitats. As hunters, gatherers, and more recently farmers, they have less land to live on now than in the past. Explain how in Botswana the Buka-Khwe are practicing entrepreneurship that has turned a simulated village into a tourist destination.

**Ask** students, "What religious practices might you expect among the Buka-Khwe?" The Buka-Khwe practice a mix of shamanism and animism. Witch doctors often lead in trance-inducing, ecstatic dances meant as pleas with the spirit world for healing.

**Tell** students that the Bushmen tribes of southern Africa have long been studied, but there are no gospel resources in the native language of the Buka-Khwe.

Have a student read 2 Corinthians 11:26-27. Ask, "What do these verses tell us about the validity of extreme missions to the uttermost part of the earth?"

**Pray** for Buka-Khwe of southern Africa, asking God to use this generation to bring them the gospel in a way that honors their core culture and strengthens their communities.

Begin this lesson with the disclaimer on page 61 of the manual. Encourage participants to take additional first-aid and CPR classes beyond this course.

**Tell** students, "The best way to solve a problem is to avoid it. Injuries can be avoided with three choices and practices: campsite, personal protection, and good sanitation."

**Review** the material on pages 61-62 in detail, concerning campsite selection, personal protective measures, sanitation, and personal sanitation (hygiene).

**Tell** students, "Your mission will likely expose you to unfamiliar plants that could be poisonous." Before entering an area, students should research issues of forestation and vegetation. This will help them recognize and avoid problems.

**Review** the CIA acronym about how plants can harm us and the section on poisoning from plants on pages 62-63.

**Ask** students, "If you get an itch while on a remote mission, can this be a problem?" (The answer is "yes," since it may signal contact dermatitis.)

**Review** the responses to contact dermatitis on page 63 of the manual, particularly as it relates to one's eyes.

**Review** the contact dermatitis remedies on page 63.

**Review** the poisonous plant types on page 63 and the survival tip about leaves of three.

**Tell** students, "Accidents happen even when you are in the center of God's will for your life. One of the challenges you may face is an injury that results in excessive bleeding."

**Tell** students about the three types (levels) of bandaging: field dressing, pressure dressing, and tourniquet. Be prepared to demonstrate each of these. Make sure the students are particularly careful when applying the tourniquet. A tourniquet is designed to cut off circulation and could result in amputation.

**Review** the basic steps to stop bleeding on pages 64-66. Remind them that these steps are important, so follow them in sequence.

**Review** the details in the section on how to stop bleeding using the props and materials that the students or you brought beforehand. If you made assignments, students could teach much of this section.

**Tell** students that a tourniquet is a last resort in first aid. However, it can save a life. Review how to gather materials, place, and apply a tourniquet. Also, explain why in dire situations it may be necessary to "document the tourniquet."

**Review** the techniques for addressing choking on page 67 and be prepared to demonstrate the Heimlich maneuver.

**Tell** students that cold injuries can occur just about anywhere, so they need an action plan to prevent cold-related injuries, including frostbite.

**Review** the cold-weather tips on pages 67-69, including how exposure to cold can create dehydration.

**Review** the conditions called Chilblain and Immersion Foot, and help the students to recognize the problems of these conditions and solutions from page 67.

Tell students that frostbite is probably the cold-weather challenge they have heard the most about.

**Review** the symptoms and treatment of frostbite on page 68.

**Tell** students that cold exposure can create the serious condition of hypothermia, which is when the body's core temperature drops to dangerous levels.

**Review** the symptoms and treatments of hypothermia on page 68.

Tell students that the other extreme weather condition—heat—poses its own challenges.

**Review** the facts about heat injuries on pages 69-70.

**Tell** students how important it is to recognize heat-related problems and to know the treatment for each. The categories are heat cramps, heat exhaustion, and heat stroke.

**Review** the treatments and symptoms for heat-related problems.

**Tell** students that sometimes adventurers experience sprains, broken bones, and dislocated bones. The more serious accidents are typically associated with climbing, but an ankle can be twisted and sprained just about anywhere.

**Review** the difference between breaks, sprains, and dislocations.

**Ask** students, "Beyond the inconvenience and discomfort caused by breaks, sprains, or dislocations, is there a danger to any of these incidences?" (The answer is "yes," since broken bones can cause internal bleeding.)

**Tell** students that the best initial response to breaks, sprains, or dislocations is to stabilize the injury. This usually happens with a splint.

**Review** the material on pages 70-71 about splinting basics and applying splints. Emphasize that the response focuses first on the injured person in order to reassure and calm him or her before searching for splint materials.

**Review** the signs of broken bones on page 72.

Ask students, "How would a sprain compare to a broken bone?" (Sprains are not likely to be life threatening,

#### just annoying.)

**Review** the RICE Heat acrostic on page 72 that helps direct a first-aid response to a sprain.

**Ask** students, "How would a dislocation compare to a sprain?" (Dislocations are very painful though not likely to be life threatening.)

Review the steps to administering first aid to a person with a dislocated joint and an arm sling.

#### Closing

**Tell** students that this lesson on first aid and prevention may not provide skills that they will use every day, but on the day someone gets hurt or sick, these skills will be invaluable. Beyond the practice in this session and implementation during the planned one- to two-day survival initiative, encourage them again to seek additional training in first aid and CPR through the American Red Cross or other organizations.

**Remind** the students that this is more than a classroom experience. The course will culminate in a one- or twoday outing that will allow them to practice the skills they are learning.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

**Pray** for the students and their preparation for next week's class.

- Ask students to read the week 7 material from their student manual.
- Either be prepared to demonstrate navigational techniques (in week 7 of manual) next week or assign the students to do so.
- Assign a student to research the Zargar of India and to lead next week's people-group lesson.
- Make final preparations needed for the survival practicum.






# Haven't I Seen That Tree Before?

# Main Survival Point:

Students will learn how to use a map, compass, and the terrain for directional support. They will also learn to find a general direction when none of those things are available. Finally, students will also learn to anticipate weather using cloud formations. **Bible Memory Verse:** 

"The Lord is my rock, my fortress, and my deliverer, my God, my mountain where I seek refuge, my shield and the horn of my salvation, my stronghold" (Psalm 18:2).

# **Before the Meeting**

The seventh of eight sessions on survival training centers on the practical aspect of getting to one's desired destination. Realizing that the mission objective of this survival training course will not likely gain much help from Web sites like Mapquest, students must learn practical methods for navigating what may be uncharted territory.

Unlike most lessons, this one will probably not include student assignments beforehand. For you to teach this lesson, plan to have a map, portable GPS, and compass.

# **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at the items you collected and displayed.

Begin teaching by opening with prayer. Ask God to use this course to help students gain practical navigational skills that can help them accomplish their mission. Thank God for the direction and purpose He gives to each Christ-follower.

**Ask** students, "How might life at 16,000 feet elevation be different from where we live?" (Answers would include remote, mountainous, little room for farming, and hard to acclimate to the elevation when visiting.)

Tell students about the Himalayan mountains of northern India in the state of Jammu and Kashmir.

Ask students, "Do the Himalayan mountains represent a place you would want to visit?"

**Tell** students about the Zargars of India, a subgroup of the Kashmiri people and speakers of the Kashmiri language. Explain how the Zargars are Sikhs, which is a monotheistic religion as opposed to Hinduism, the predominant polytheistic religion of India. However, Sikhs are not Christians and few have knowledge of the good news of the gospel.

**Lead** the students to pray for the Zargar of India. Pray that they will learn about the one true God's love for them. Pray that God will raise up someone to plant a church among the Zargar people.

**Have** someone read Psalm 18:2. Ask, "How does this verse apply to extreme missions?" Remind students to memorize this verse and each lesson's key verse(s). Divide the students into pairs and ask them to recite this verse and last week's verse, Matthew 9:12.

# Teaching Guide | Week Seven: Navigation & Terrain Recognition

Ask students, "Do you often use handrails when climbing stairs? If so, why?" (The answers should include to steady oneself and to prevent a fall.)

**Ask** students, "Where are you going to find handrails in nature?" (The answer is by using linear terrain features such as streams, telephone lines, and rock formations.)

#### Knowing where you are and where you are going

**Review** the tools for the road with samples in the classroom of maps, GPS units, and compasses and the uses of each found on page 77.

**Tell** students that knowing your direction is important and so is knowing the distance you have traveled. Explain how to estimate measurements in meters.

Ask students, "How can you use the terrain as a guide?"

**Review** the material on using terrain found on page 79.

Ask students, "If you don't have a compass, how can you determine your direction?"

**Review** how survivalists can use the sun, shadows, watches, and stars for navigation with the material on pages 80-81. Use resources such as Google Sky (<u>www.googlesky.com</u>) to allow students to see the constellations.

#### Getting to where you're going—tips for the journey

**Review** the journey tips on pages 81-82, particularly ones related to safety.

**Review** the trail discipline tips on page 82.

#### Anticipating weather

**Ask** students, "How might weather affect your mission?" (Besides being a physical obstacle, it can have emotional consequences.)

**Review** the clouds types on pages 82-83 and what each indicates in terms of changing weather and emotional response.

#### Closing

**Remind** the students that knowing where one is going in life is as important as navigating highways in developed countries or terrain in remote jungles. God created each of us for a purpose, and our challenge is to find that purpose and to complete the task.

**Note:** After seven sessions, students now should have a good idea of the missional challenge of completing the task of world evangelization by reaching remote people groups. They should now have a better understanding of the commitment and sacrifice it will take to finish this task.

**Ask** students, "After seven weeks of study, can any of you see yourself doing this type of missions? Do any of you sense a calling to focus on unreached people groups?" Allow some time for discussion. Chances are that not every participant will answer that question affirmatively. For those who do, make an effort to explore that decision further and connect them with international opportunities.

Make assignments for next week's lesson to facilitate the students' participation and teaching interaction.

**Pray** for the students and their preparation for next week's class.



- Ask students to read the week 8 material from their student manual.
- Either create examples of tools (in week 8 of manual) to display next week or assign the students to do so.
- Assign a student to research the Kurds of Turkey and lead the peoplegroup study next week.
- Make final preparations needed for the survival practicum.



# So Easy a Caveman Can Make It



## **Before the Meeting**

The final session introduces students to specifics of some of the utilitarian tools discussed in previous chapters, particularly on food and shelter. Cords, knots, and tools should be available for display and discussion during this class.

Interactive teaching facilitates learning. Students cannot learn the lessons in this manual without practice. This week's session includes using available resources to make tools. Part of your lesson plan can include having some materials available and letting students make these tools in class. Another option is to assign students beforehand to either bring in the materials or make the tools ahead of time while documenting their work through photographs or video.

## **Teaching Plan**

Welcome the students as they arrive and encourage them to look around at any props related to knots, tools, and signaling their fellow students or you have prepared beforehand.

Begin teaching by opening with prayer. Ask God to use this lesson to create practical knowledge concerning the use of available resources in remote areas. Ask God to help each participant become familiar and comfortable with the techniques covered in this lesson.

Ask students, "Can you imagine what it would be like to be North Americans without having the United States of America or provinces of Canada? How would you feel to not have a homeland? What challenges might this present if your people group numbered 25 million and was spread primarily among three neighboring nations?"

Tell students about the Kurds of Turkey and how their people group live in a non-recognized territory commonly referred to as Kurdistan, which is a part of Turkey, Iran, and Iraq. The Kurds are the largest people group on earth without a homeland.

Tell students about the mountainous terrain where the Kurds of Turkey live and how their access to potable water is limited. The Kurds face challenges from extreme weather, little access to education and health care, and much persecution due to war and government pressure not to speak their native Kurdish language. Most Kurds are Sunni Muslims.

Tell students that unlike many of the people groups studied in The Last Frontier Survival Training Manual, many Kurds now live in the United States, particularly in Nashville and Dallas. Ministering to unreached people groups can begin in North America.

# Teaching Guide | Week Seven: Knots, Tools, & Signaling

Lead the students in prayer for the Kurds of Turkey, asking that God would call out their generation to finish the task of telling the Kurds about the good news of Jesus Christ.

Pray for the students and ask God to continue to enlarge their vision for missions and their resolve to be obedient to their Acts 1:8 calling, no matter how long it might take to establish the gospel in an uttermost part of the earth.

Tell students, "Survivalists must be resourceful. You can carry only so much weight with you. The alternative is to use natural and man-made resources to create the tools one might need."

#### Cordage

Review the various sources for making cords or rope found on page 87. Be prepared to demonstrate some of the more practical methods.

#### **Knots**

Review and practice the various techniques for creating knots on pages 87-88.

#### Creating tools

Review the various tool types on pages 89-92. Be prepared to demonstrate several of these tools by having the materials available and assigning students to assemble them. You may assign students beforehand to bring the materials. There are a number of options listed. Be sure to cover at least one option under each tool type.

#### Signaling

Tell students that survivalists sometimes get lost. When that happens, clear thinking can help them be found.

Ask students, "How can a lost survivalist facilitate being found?" (Make noise and increase visibility.)

Review the ways to be seen on page 92.

Review the ways to be heard on page 92.

#### Closing

Tell students that this concludes the eight sessions on survival training. Remind them that this course should be the starting point for their preparation for most survival scenarios. However, they will get to practice their skills in a simulated survival event. Provide those details, allow for questions, and firm up the plans for your student team to engage in a survival outing. Distribute media, photo, medical, and hold-harmless forms for each student to sign. Students under the age of 18 will need signatures from their parents or guardians.

Spend some time debriefing the course. Ask the students what they liked and didn't like. Are they comfortable enough to participate in a survival outing?

Make assignments for the survival trip that you will be making with your students. Be clear about the dates, times, and objectives.

Pray for the students and their preparation for their survival outing.



