# BACKPACKING

## Independence in the Woods

*Taking a walk with your house on your back...*

There are still places inaccessible to car, where the noise of traffic and the lights of the city become a distant memory. It is to these places that we go backpacking, taking everything we need on our back; food, clothing, and shelter.

Backpack camping requires simplification - you don't want to carry too much, so just bring what you need. With simplicity, distractions slip away, God's handiwork becomes readily apparent, and in the quiet, you can listen for the still, small voice.

*About the Honor*

The Backpacking honor, introduced in 1986, is a recreational (green) skill level 2 honor (tailored to those in 7th through 10th grade).

Some honors that share skills or may assist with work on the Backpacking honor include: Hiking, Fire-Building and Camp Cookery, First Aid, Basic Rescue, Food Drying, Orienteering, and the Camping Skills honors.

The Backpacking honor is one of the requirements for the Wilderness Master award.

### WHOAH! ISN'T BACKPACKING REALLY HARD WORK?

So you've been invited to go backpacking, but you are worried about all that heavy lifting, sore shoulders and blistered feet. Well, worry no more. With a little preparation, some exercise, and a healthy dose of common sense, you will soon find that backpacking is less strenuous than you thought, and more enjoyable. Good footwear and a well-fitting pack are essential.

But what about the weight? Well, you may have heard people bragging about the 80 pounds they lugged through Death Valley and over the Rockies, but except for extraordinary circumstances, a pack this heavy may reflect poor planning more than major achievement. The ideal pack weight is no more than 25-30 percent of your body weight. So simplify, and leave the cast iron at home.

## REQUIREMENTS FOR THE BACKPACKING HONOR

1. Discuss with your instructor the meaning of the motto: "*Take nothing but pictures and leave nothing but footprints*."

2. Know the essentials of proper clothing, shoes, and rain gear to use in backpacking.

3. Know the principles in selecting a good quality backpack. In an emergency, what might be used in place of a backpack?

4. Know the essential items to be taken on a backpack trip.

5. What kind of sleeping bag and pad are best for your camping area? Know at least three kinds of each that are available.

6. Know how to pack a pack properly.

7. What types of food are best for backpacking? Visit a grocery store and list the foods found there that are suitable for backpacking. With your instructor:
- Prepare a menu for a weekend backpack trip using foods obtained from a grocery store.
- Learn the techniques of measuring, packaging, and labeling backpack foods for your trip.
- Make a trail snack.

8. Know the prevention and symptoms of, and the first aid for:

| | | |
|---|---|---|
| a. Sunburn | b. Blisters | c. Frostbite |
| d. Hypothermia | e. Heat stroke | f. Heat exhaustion |
| g. Snake bite | h. Cramps | i. Dehydration |

9. Have a First Aid Kit in your pack and know how to use it.

10. According to your weight, what is the maximum number of pounds you should be allowed to carry?

11. Know three ways to find direction without a compass. Demonstrate at least two.

12. Show the proper way to put on and take off a backpack alone and with a partner.

13. Participate in a weekend backpack trip of at least five miles and cook your own meals.

Working on the Food Drying honor is a great way to prepare your backpacking meals. Be creative; there is more than oatmeal and ramen noodles out there!

## A FEW OBSERVATIONS ABOUT A PILE OF BACKPACKS

Keep the tent packed high on the pack. This helps with weight distribution and makes it readily accessible.

A sleeping pad not only gives you a softer place to sleep, it also helps insulate you from the cool, damp ground.

Wide, padded shoulder straps aid in comfort and stability.

**External Frame Pack**

*Easier to pack and unpack
*Can carry a heavier load
*May provide more air space between pack and back

**Internal Frame Pack**

*Rides closer to the back
*Greater balance and maneuverability
*Often more adjustable fit

The belt is one of the most important aspects of the pack. A good belt should be padded and adjustable. The belt transfers the weight of the pack from your shoulders and back to your hips.

## DID I PACK TOO MUCH?

Backpacks can carry a lot of equipment, both inside the pockets and strapped on outside. Remember, though, just because you have extra room in your backpack doesn't mean you have to fill it. Think light. Think compact. You want to enjoy this time out. After each trip, review what you didn't use, and leave it behind next time.

## CONSERVATION, PRESERVATION AND OUTDOOR ETHICS

Many people these days recognize the importance of preserving nature. They learn and practice the tenants of outdoor ethics, taking to heart phrases like "take nothing but pictures, leave nothing but footprints," and actively practicing the principles of programs like "Leave No Trace." They show respect for the world around them, work diligently to protect natural habitats, to preserve pristine wildernesses, and practice conservation principles in their daily lives.

For Christians, the ideas of preservation, conservation, and outdoor ethics go beyond simply trying to keep the wilderness around for future use. The core of the Christian approach to outdoor ethics comes from our recognition that how we treat the world reflects our relationship with the creator God who made the world and entrusted it to us.

In the book of Genesis, we see God create the world, and then give care of all of that creation to mankind (Gen. 1:26-28, 2:15). From the moment of creation, people have been connected to the natural world, given by their creator the wonders of nature to enjoy, but also given the responsibility to take care of this great creation. As Christians, God's gift of the natural world remains ours to cherish and maintain.

God reveals himself through nature. David and Solomon drew inspiration from seeing God's handiwork, and his loving care, in every aspect of creation. Christ himself frequently used examples from the natural world around him as the basis of his parables, drawing on His creation to show people His love, and point them toward eternal life.

When you are asked to care for something that belongs to a friend or family member, if you love them and respect them, you will treat their property with care and respect. As Christians, as people, we remain the stewards of this world. That is a heavy responsibility, but like the servants in the parable of the talents (Matt. 25:14-30), if we are faithful with what God has entrusted us here on Earth, how much more will he give us in heaven!

## THE PATHFINDER CAMPING CODE

I will camp only where camping is allowed.

I will keep my campsite clean at all times, and I will leave it cleaner than when I found it.

I will never leave my campfire unattended, and when I leave I will be sure that it is entirely out.

I will never use my knife or ax to cut, mar or scar live trees.

I will never pick wild flowers without permission.

I will never cut trails while hiking.

I will never pollute a lake or stream.

I will always respect the privacy of other campers.

I will always be polite and courteous.

I will respect all signs, authority, rules and private property.

I will always conduct myself as a Pathfinder and a Christian.

I will always leave a campsite knowing that I am welcome to return.

## LEAVE NO TRACE SEVEN PRINCIPLES

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors

*[This copyrighted information has been reprinted from the Leave No Trace Center for Outdoor Ethics - http://www.lnt.org]*

## SOME THOUGHTS ON CHOOSING A BACKPACK

The key things to consider in choosing a backpack are fit, fit, fit, size and weight. After that comes all the bells and whistles, like location of pockets, loops for your ice ax, and color choices.

Like your shoes, your pack must fit. And like shoes, packs come in many different styles manufactured by many different companies, so it is good to try on different models, preferably weighted, and walk around the store a while. The pack will be measured first for your torso length, with adjustments to match hip size. Several styles of packs offer adjustable suspension sizes, but the trade-off for fine-tuned fit is a little more weight and complexity.

For most backpacking, except winter and multi-week trips, a lightweight backpack, ranging from 40 to 65 liters (around 2500 to 4000 cubic inches) in capacity, will be sufficient. For winter backpacking or trips lasting several weeks, you may need a pack up to 80 liters (around 4900 cubic inches) capacity. Remember that capacity will measure not only the main internal pocket, but any additional side pockets. In addition, some packs come with an expandable or adjustable top fly, which effectively allows you to add additional capacity when needed.

There are three basic weight categories for backpacks; ultralight, light (or standard) and what is sometimes called deluxe. Although there is no standard measurement for these categories, ultralight packs generally weigh two to three pounds, light or standard packs run up to five pounds, with deluxe packs heavier than that. Remember that part of calculating your preferred weight includes the pack on your back, so as with most aspects of backpack camping, think light.

There are two basic forms of backpacks; internal frame and external frame. Each has their own advantages and disadvantages. External frame packs allow you to carry a heavier load, and are easier to pack and unpack, as the frame helps the pockets retain their shape empty or full. The frame also provides an airspace between your back and the load, making it normally a cooler pack to carry. One often overlooked advantage of an external frame pack is that the frame can be used as part of an emergency stretcher. External frame packs do require you to tie more of your gear on the outside of the pack (particularly your sleeping bag and pad). Internal frame packs place the load closer to your body, and do not stick out as much, giving you greater maneuverability and balance and less of a chance of getting snagged on a branch. External frame packs are getting harder to find, but are often less expensive, but internal frame packs can often offer a better more personal fit.

It is also often useful to bring a lightweight daypack with you when you go backpacking. These can be useful for side trips. Some can double as stuff sacks for your sleeping bag. Or you may pre-pack the day pack with the first aid gear and a few other useful items. Some backpacking packs have a removable day pack built in.

In an emergency situation, you can make a substitute for a backpack by placing your load in a blanket, sleeping bag or even large shirt, and bundling it up at the corner to carry. Do not try to rely on this method for a backpacking trip, however.

## BACKPACKING ESSENTIALS

Think in terms of the following basic groups [*some examples in brackets*]: **Navigation** [*Map and compass, GPS unit.*]; **Sun Protection** [*Hat, uv-blocking shirt, sun screen, sun glasses*]; **Insulation** [*Proper clothing (layers), sleeping gear (as needed, including ground cloth and mat.)*]; **Illumination** [*Flashlight, headlamp*]; **First Aid** [*Appropriate for the location and terrain, and for the number of individuals*]; **Fire** [*Matches, non-match fire starters, tinder, cook stoves, fuel*]; **Tools and Repair** [*Knife (the multi-purpose tool), duck tape, needle and thread, safety pins*]; **Nutrition** [*Food, snacks, energy bars, GORP*]; **Hydration** [*Water, water purification, electrolyte drinks or mix*]; **Shelter** [*Tent, tarp, emergency poncho*]. A positive attitude and good sense of humor are also essential!

## SLEEPING BAGS AND PADS

Sleeping bags work by trapping heat released from your body. It is about loft - how much air does the filling hold. In general, down-filled bags are more expansive but lighter than synthetic fill. But down is more expensive, and in the off chance that it rains inside your tent, down loses all its loft when wet and takes a long time to dry. It is also more expensive. For most, a bag with a synthetic filling is optimal. It is a bit heavier compared to down for the same comfort rating, but dries relatively quickly if it should get wet, and is much less expensive. Do not get a bag filled with cotton.

Sleeping bags are often given a a comfort or temperature rating. This number is the coldest outside temperature in which an average person will be comfortable in the bag. Very few people are average. If you get cold easily, get a bag rated for a lower temperature (though this may be more bulky) or bring a light fleece blanket with you, and wear a knit or fleece cap. For most Texas camping, a bag rated 25-35 degrees will be sufficient, and in the summer, you can bring just a sheet rather than the sleeping bag.

### SHAPES

There are three basic shapes of sleeping bags, each with its own advantages and disadvantages.

Mummy (Usually best for cold weather and backpacking trips): These have the greatest trapped heat capacity compared to weight. They are compact and light, but can seem constricting, as they do not allow a lot of movement. This is your standard backpacking bag.

Rectangle (usually for warm-weather camping): These are roomy, and often the most comfortable and least expensive. However, they are usually less capable of holding in heat (due to the shape, usually cheaper materials, and long zipper), and are often bulky and add more weight that insulation. Leave these for slumber parties.

Barrel, Semi-Mummy (compromise bag): A compromise between rectangle and mummy bags, with less weight and heat loss than the rectangle bag and more room and comfort than the mummy bag.

### SLEEPING PADS

A sleeping bag comfort rating usually considers a person to also be using some sort of sleeping pad, as your body weight will compress the filler underneath you, limiting the insulating capacity of the bag between you and the ground. A sleeping pad can make up for the insulation loss, and cover over some of the less comfortable aspects of sleeping upon the ground.

There are three basic types of sleeping pads; closed-cell foam, open-cell foam and self-inflating.

Closed-cell foam pads are somewhat dense, do not absorb water, and do a fairly good job at insulating. They can be bulky (as they do not compress easily) and less cushiony. If carrying an ultralight backpack, though, these can be used to give some shape to the pocket.

Open-cell foam, like egg-crate foam, gives more comfort, but absorbs moisture fairly easily, and is rather bulky.

Self-inflating pads are made of open-cell foam sandwiched between plastic. They inflate most of the way by themselves, can be rolled fairly compactly, and provide a good compromise between water resistance, insulation and bulk.

One final note, there is a difference between sleeping bags made for men and women, generally in the overall length, and the amount of insulation for a given temperature rating.

## THINKING ABOUT HEAT LOSS

*Convection* - heat lost to air currents

*Conduction* - heat lost to objects you are touching (including the ground)

*Radiant* - heat leaving your body

*Evaporative* - heat loss due to evaporation of moisture on skin/clothes

## WHAT TO WEAR

**FOOTWEAR** - One of the most important elements of backpacking and hiking is your footwear. Improperly fitting shoes or boots, insufficient support, poor ventilation, damp socks - these are all things that can ruin a backpacking trip. In the past, hiking boots were always large, heavy, thick-soled monsters, and the heavier and sturdier the boot, the better it was thought to be. That is no longer the case. Modern materials and design, as well as a variety of weights and styles, offers a larger, lighter and more comfortable selection than in the past.

In choosing shoes or boots, consider the weight of load, terrain and length of trip. An afternoon hike with a light day pack may only require a pair of sneakers, trail shoes, light boots, or even hiking sandals. For a weekend backpacking trip with a light or moderate pack, choose hiking or light backpacking boots (or shoes). Reserve heavy duty hiking boots for long trips with heavier loads, where the additional weight is offset by the extra ankle support and more durable soles and materials that can withstand the additional wear.

Hiking and backpacking shoes come in four main styles. For very simple summer day hikes, particularly when it is hot or you will be in and out of water, some of the newer model *hiking sandals* provide good support, drainage and airflow, are light and comfortable. *Trail shoes* are also good for basic day hikes with minimal lode. They are light weight, but do not provide much stability to ankles. *Mid-cut boots* provide more ankle support, and are lighter weight than high-cut multi-day hiking boots. The mid-cut boots are good for backpacking trips of a few days, where your load will be lighter. For extreme terrain or much longer hikes, the *high-cut hiking boots* provide better support.

In fitting boots, it is important to wear the socks you will wear hiking. Try on boots in the afternoon or evening, as your feet will have swelled some during the day. Be sure to try on both boots - it is not unusual for your feet to be slightly different sizes. Walk around in the boots to test for loose or tight spots. Try several different styles and brands, as the fit and placement of arch and seams may differ. Spend some time walking around the store. Try walking up and down short inclines if available. Squat down and stand up. Test if your foot slides in the boot - you dont want movement, as that can create friction points which lead to blisters. At the same time, you do not want the boots to fit too tight, cramping your toes or interfering with circulation.

If your boots are mostly synthetic materials, they will take less time to break in. Wear them around for short periods of time first, and gradually longer. Wear them for several weeks before you go backpacking. You do not want to take brand new shoes out on the trail. If your boots are leather, the process is likely to take even longer. Be aware that during the break-in period, there may be tight spots and minor pinches. These should go away as the shoes adjust to the shape of your foot, but if they do not, you may need to see about getting the shoes stretched if it is just a minor problem, or consider different shoes if they never seem to fit right. (Taking time in selecting and testing out the boots can help avoid the possibility of finding out too late that the boots just aren't right for your feet.)

Just as important as the boots are your socks. Do not wear cotton gym socks when hiking or backpacking. Cotton holds water, and as your feet sweat, the socks will get damp, chilling your feet, softening the skin due to continued exposure to the wet cotton, and contributing to the formation of blisters. The best hiking socks are wool or wool blend, particularly Merino wool or mohair, as these are less itchy than other wools. Wool helps wick water away from your feet, is warm in winter and cool in summer, and has natural anti-microbial properties that can assist in keeping smells down. There are also numerous synthetic options available, which also serve to wick moisture away from your feet (and synthetic socks dry faster than wool). There are several thicknesses of socks, fit to different seasons or difficulties of hikes (thicker socks for winter and heavy duty hiking, thinner socks for warmer weather and shorter trips)

Some people also like to use a two-layer system for hiking and backpacking socks, especially for longer or more strenuous trips. These consist of a thin liner sock, and a thicker (and sometimes padded) outer sock. Liners are usually synthetic or silk, while the outer sock is usually wool. With this method, you can carry extra light-weight liners, and even change them out during the hike if necessary.

On a strenuous hike, or if your feet sweat a lot, it may be useful to have extra socks readily available in an outside pocket of your pack, and change them during the hike. Hand the wet socks on your pack to dry as you continue along.

If you take care of your boots and socks, and be sure to get the right fit, they will take care of your feet.

**CLOTHING** - The most basic human needs include food, shelter and security. Clothing, in many ways, is portable shelter. It protects you from the environment, but also allows you to adapt to existing and changing conditions.

The first rule in choosing the appropriate clothing for a backpacking trip is to know the

climate, season and weather forecast. You probably dont need heavier outer layers for a trip in a State park in the Texas Hill Country in June, but the same may not be true for a backpacking trip in the mountains in Colorado in the same month, or in a Southwestern desert, where the nights can be much colder than the days.

The next rule, or rather guideline, is to think in terms of layers. Several layers of clothing can provide the same or better insulation than a single thick garment, but provides infinitely more flexibility in adjusting to weather conditions and your own internal body heat as you hike. Insulation comes less from the material itself than the ability of the material to trap a layer of air. Air is a poor conductor of heat, and so it takes longer for the colder (or warmer) outside temperature to affect your skin and body. Think about a cooler - it has a thick wall that is filled with styrofoam (which itself traps tiny pockets of air) or just has air between the layers of wall. This can keep cold items cold and hot items hot by limiting heat transfer. Layering your clothes does the same thing, building insulating pockets of air between layers, so long as they are not extremely tight fitting.

Layers also allow you to adapt to changes in temperature during the day. In the cool of the morning, you may need more layers, but as you move and your body and the day warms, you can remove layers as needed. If the wind kicks up, you can add back layers to stay warm. As evening comes, or you climb in altitude, you may need to add layers. Having layers can also help if you sweat - you can add a layer on top or change out a layer to conserve warmth (sweat cools you through evaporation, and damp clothes work similar to a camp refrigerator - the damp cloth is a giant evaporator, drawing away your body heat).

Connected to the issue of sweat and dampness is the old saying; cotton kills. Cotton (including jeans) holds water close to your body, and does not dry quickly. This leaves you feeling wet, which can be uncomfortable, can contribute to rashes, rubbing sores or blisters, and to significant heat loss. In cool conditions, heat loss over time can lead to hypothermia, even if the air temperature is well above freezing. Heat loss is exacerbated by wet clothing, which creates a greater surface area of evaporation. Although your most comfortable clothes (including t-shirts, jeans and even underwear) are most likely cotton, cotton is rarely a good choice for backpacking clothes. You may not think about it, but consider wearing underwear made of synthetic materials, as these will wick water away from your skin and help prevent rashes and chafing.

Rather than cotton, look for synthetics that are designed to wick water away from the skin and dry quickly, or for wool or wool blends. These are less itchy and may be combined with synthetics for better fit. Wool retains its insulating value even when wet, something cotton doesn't do. There are also new cotton/synthetic blends and nano-technology treated cottons that are both comfortable and wick water away from the skin. Try to choose from fabrics that are lightweight, wicking, dry quickly and will hold up to abrasion and wear.

**RAIN GEAR** - Outside your clothing comes rain gear. You cannot always choose the weather on a backpacking trip, but you can be prepared. Rain gear should be light weight and made of a breathable material, or at least have vents to allow your moisture to escape, so you don't end up wet anyway due to your own heat and sweat. Some rain gear will also provide wind protection, something to consider depending upon your location and the weather forecast. In some cases, you may need not only a rain jacket, with a hood, but also water repellent pants.

Instead of the traditional rain jacket, you may opt for a poncho. Small, light, single or short-term use ponchos are inexpensive and readily available. Even if there is no forecast for rain, it is good to carry one of these with you, just in case the weatherman was wrong. The advantage of a poncho is that it is very light, easy to put on, and in many cases is big enough to fit over you and your gear at the same time. The disadvantage is that it can be unwieldy and limit arm use, and ponchos often trap your body moisture.

**ACCESSORIES** - Number one on the accessory list is a hat. Brimmed hats can help shade the sun, reducing the chances of sunburn and heat exhaustion. In the morning or evening, or even while sleeping, a knit or fleece hat can help keep you warm.

And speaking of sleeping, bring something light and comfortable to sleep in. It is best not to sleep in the same clothes you wore all day hiking - and be sure to take off the socks you wore all day.

When you pack your clothes, it can be helpful to pack each type or each day in a different ziploc bag. This bag-in-a-bag system of packing keeps things dry and organized. Have another bag for the dirty clothes.

Finally remember, a fresh pair of socks not only feels good, but can help keep your feet fresh and dry. Take care of your feet, and they will take care of you.

## HOW TO PACK YOUR PACK

Even before you put your pack on, you may want to consider how you distribute the weight in the pack, as well as where to place certain items for easy accessibility.

While each pack has different pocket placement and capacity, there are some general guidelines to follow when packing your pack.

First, it may not seem obvious, but you should put the heavier items near the top of the pack, and closer to your back than toward the outside of the pack. This will center the weight, and help you avoid tipping backwards as you hike. Your food and cooking equipment should be in this upper area, aside from any food or snacks you may want during the hike. Your tent is something best kept all the way at the top, perhaps strapped under the cover.

Bulky items (clothing and other personal gear) can go in the main compartment (on frame packs, the sleeping bag is normally strapped on outside and under the lower pocket, in internal frame packs, it may be placed inside the main pocket). It is a good idea to pre-pack your clothing in large ziploc bags, sorting them by type or perhaps by day. These pack easily into the pack, and make it much less messy and complicated when you are looking for those socks in the morning.

In side or smaller front pockets, keep things you may need rapid access to, including your first aid kit, flashlight or headlamp, trail snacks, toilet paper, and water bottle. Your stove and fuel are often also best kept in an outside pocket.

You may want to bring an emergency poncho or some other covering you can access quickly if it starts to rain. Also, keep a pair of extra socks in an easily accessible location. If your feet get damp or sore along the trail, having a pair of clean, dry socks can not only be a comfort, it can help you avoid painful (and possibly trip ending) blisters.

A reminder on packing your food. In some locations, you will need to haul around a bear canister, but in most of central Texas, that is not an issue. But no matter where you go, be sure you have packed your food in such a way that there is no smell. Raccoons, skunks, squirrels, mice, opossums and others like to get into poorly packed packs and eat your breakfast before you even wake up. There are smell-proof bags you can buy and outdoors stores, or just double ziploc all food items. And like your clothes, it is often a good idea to pack your food in ways that you can easily access entire meals in a single bag.

A final note on animals, smells and bags. Try not to take strong smelling toothpastes, soaps, shampoos or other personal products (or at least pack them in smell-proof containers) - ants and animals seek out strong smelling items, and even if they don't eat your lunch, they could ruin your gear.

## HEFTING THE PACK WITHOUT BREAKING YOUR BACK

Remember the oft-repeated admonition to lift with your legs, not your back? Well, when putting on a full backpack, use your knee.

Bend your knees, so your left knee forms a shelf (that is where you will put your pack).

Lift the pack by the shoulder strap up onto your knee, with the straps facing you.

Slide your left arm through the shoulder strap, grasp the haul loop or top of frame with your right hand, and swing the pack onto your back.

Lean forward so the pack rests on your back, and slide your right arm through the strap.

Fasten the waist belt and stand up. Now, adjust the waist belt, then move up to adjust the shoulder straps, then, if you have a load lifter, adjust that last.

If it is more comfortable, follow these steps for the right arm first.

If you have a friend, they can heft the pack onto their knee, and you can back into your pack. If there is a handy tree stump or rock, set the pack on that and just step back into the pack.

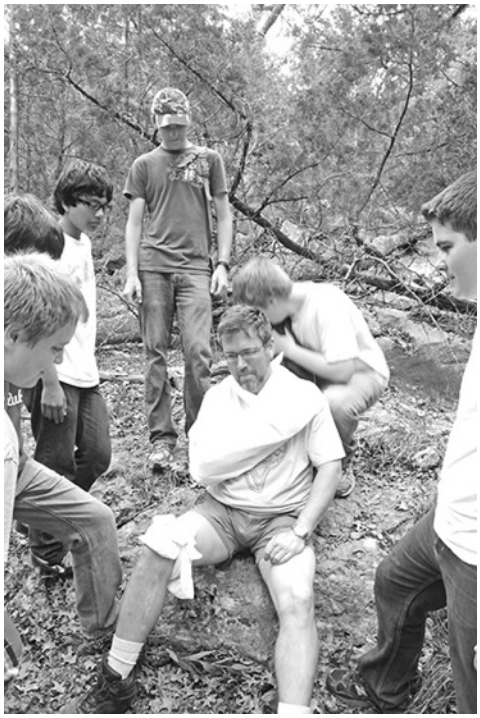
## QUICK THINKING

In first aid, the initial steps are:

*Check* - the scene for safety and the injured for life-threatening situations
*Call* - 911 or emergency response
*Care* - For the iniured

In wilderness first air, you often don't have the luxury of step 2 (call 911). You will need to assess whether the injury is one that can be treated in the wilderness, or requires immediate evacuation

Think in terms of the three vital systems first - circulatory, respiratory and nervous. The **circulatory system** moves oxygen to the brain and vital organs. The **respiratory system** provides the oxygen for the blood. And the **nervous system** controls body functions. Major injuries or failures in any one of these systems affects the others. Lack of breathing, loss of pulse, and unconsciousness are all considered life-threatening situations. Treat immediately.



Be sure to quickly and complete assess the potential patient. Often bleeding becomes the principle focus, when the blood may be from a superficial wound and a deeper internal injury or fracture may be the more significant problem.

Check for pulse and severe bleeding

Check for breathing and airway obstructions

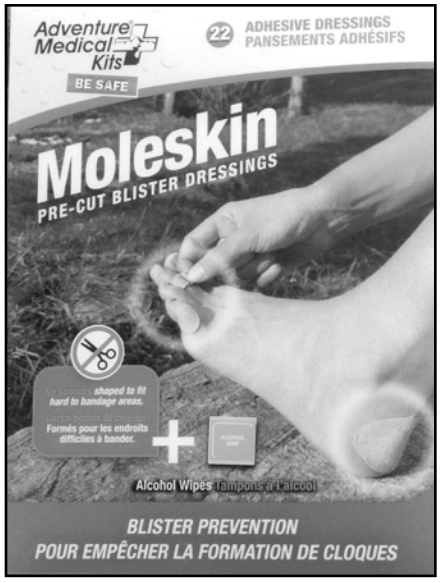
Check for level of consciousness and spinal injuries

**Signs of shock:**

*Restlessness or Irritability
*Altered level of consciousness
*Nausea or vomiting
*Pale, ashen, cool, moist skin
*Rapid breathing and pulse
*Excessive thirst

**Initial treatment:** Have person lie down, control breathing, elevate legs, maintain body temperature, give no food or drink, monitor vital systems

## FIRST AID AND EMERGENCY SITUATIONS




***Blister Care:*** *Moleskin and other blister prevention and care products are readily available, light weight, and well worth having along just in case.*

No outdoor activity is without its risks. Careful planning and preparation can avoid or minimize most risk, but if all risk is gone, so is the challenge and sense of accomplishment. Part of good preparation is to be aware of the risks, of risk mitigation, and of response to potential or likely problems that may arise. A few of the more common backpacking risks follow.

**BLISTERS**: Blisters are burns caused by friction - normally due to poorly fitting footwear. Symptoms include pain in areas where friction (rubbing) occurs, as well as the formation of a liquid-filled blister that in extreme circumstances can tear, exposing raw skin underneath. Prevention includes properly fitting shoes and socks, checking feet frequently if you feel pain while hiking, and adjust socks and shoes to avoid blistering. If you begin to detect "hot spots" from friction, use a clean bandage or moleskin to protect the blister from further friction. If the blister has already formed, cover with a sterile bandage, or use second skin and a gauze pad to protect the area and provide minor pain relief. While at home you should avoid piercing a blister, as this can expose the under-skin to bacteria and infection, on a backpacking trip it may be necessary to reduce pressure and pain. Use a sterilized needle or blade and pierce the lower portion of the blister, gently squeeze out the fluid, irrigate with a mild soap solution, dry and cover with a second skin and bandage or a sterile dry bandage.

**DEHYDRATION**: Dehydration can be a contributing factor to several other problems, from cramps to hypothermia to heat stroke. Maintaining proper hydration, which includes drinking plenty of clean water before you feel thirsty, is a critical part of safe backpacking. Symptoms of dehydration include unquenchable thirst, restlessness, muscle cramps, lightheadedness or dizziness, fatigue, and in extreme cases vomiting, shock and unconsciousness. Treatment includes moving to a cool, shaded area, and intake of fluids (water, rehydration salts, electrolyte-rich drinks). If symptoms are extreme, evacuation may be necessary. Prevention of dehydration is relatively simple in most cases - be sure to drink plenty of clean water. However, dehydration may also be caused by other digestive illnesses, including diarrhea, brought on by drinking contaminated water.

**CRAMPS**: Muscle cramps are caused by a chemical imbalance due to dehydration or due to the muscles using up their supply of glycogen and oxygen. Cramps can come on suddenly, and be extremely painful, making further travel nearly impossible. Treat cramps by gentle stretching of the affected muscle, and with massage of the muscle and, if available, a warm pad. Prevention includes proper hydration, avoiding overexertion, warming up and stretching before hiking, regular exercise at other times, and eating foods high in potassium and calcium before heading out.

**SUNBURN**: Sunburn is a first degree burn, caused by exposure to UV rays. In extreme cases, sunburn can become a second degree burn. Be aware that can occur on cloudy and overcast days and in cold weather, not only on hot sunny summer days. Prevention includes the use of UV blocking clothing (thin long-sleeve shirts, hats, etc), sunglasses, and sun block creams or lotions. Symptoms include redness of the skin, mild to moderate pain or itchiness, mild swelling and in more extreme cases blistering. Treatment includes cool water soak or cool wet rags, for limited or mild sunburn treatment with an aloe lotion can relieve pain and itching temporarily. Cover and protect from further sun exposure, and if severe, bandage with dry sterile bandages. If sunburn is severe, seek medical assistance.

**HEAT EXHAUSTION**: Heat exhaustion is less severe than heat stroke, but if untreated can lead to heat stroke. Heat Exhaustion is a form of shock, brought on by the body's attempt to regulate temperature. Symptoms include pale, clammy skin, profuse sweating, rapid pulse, nausea, dizziness, tiredness, weakness, muscle cramps, fainting, vomiting, and other classic symptoms of shock. Treatment, then, is similar to that for shock. Move to a cool or shaded space, have the victim lie down, elevate feet, cover the body with a blanket if skin is cool to the touch, and provide water (with rehydration salts if available). Prevention is similar for all heat related sicknesses - proper hydration, clothing and activity appropriate to the temperature.

**HEAT STROKE**: Heat Stroke occurs when the body's thermal regulation system breaks down, the body loses the ability to sweat (a cooling mechanism based on evaporation), and the core temperature rises above 105 degrees. Heat Stroke is a medical emergency, and if untreated rapidly, can lead to death, as core temperatures rise above 115 degrees. Symptoms include extremely high body temperature, rapid pulse and breathing, confusion, loss of coordination, nausea or vomiting, and unconsciousness. Treatment should begin with the immediate movement of the victim to the shade, even if you must create shade. Mist and spray water on the victim and fan them to encourage evaporative cooling. Do not give pain relievers or other medication. As soon as the victim is stable, prepare evacuation as soon as safe. Prevention includes proper hydration (don't wait until you are thirsty, as that is a sign you have already reached a mild state of dehydration and are at a higher risk of heat related sickness) and clothing (light colored to reflect the sun and loose fitting to allow better air flow), remaining aware of the strenuousness of activities and taking appropriate breaks, avoiding strenuous activities during the hottest parts of the day.

**HYPOTHERMIA**: Hypothermia occurs when the core body temperature drops to 95 degrees (from the normal 98.6 degrees). Hypothermia that occurs quickly, for example after someone falls into cold water, is called acute hypothermia, while when the onset is slower, it is called chronic hypothermia. It does not have to be freezing outside for hypothermia to occur - according to reports, most chronic hypothermia deaths occur when

temperatures are between 30 and 50 degrees. Wind, wetness, lack of physical activity, dehydration and exhaustion are all factors that can increase the chances for chronic hypothermia. prolonged exposure to cool water, even in warm summer days, can also bring on mild hypothermia. Symptoms include violent shivering (the body's attempt to create heat through muscle action), numbness, sleepiness, a sense of weakness, loss of coordination (as muscle control is impaired), and in extreme cases unconsciousness. Prevention includes proper clothing (remember, avoid cotton as it holds moisture and loses its insulating properties when wet), nutrition and hydration, staying dry and active, shelter from wind and rain, and generally ensuring that you stay warm. For mild hypothermia (where the victim is still capable of shivering), get them out of the cold situation, and out of any wet clothing, place them in a warm location, provide fluids. Hot packs are not necessary, nor is rubbing down limbs, as these actions may cause muscle damage or interrupt the body's natural re-warming process (shivering). Extreme hypothermia can be treated temporarily by placing the victim between two other people wrapped together in a blanket or double sleeping bags. If hypothermia is extreme, monitor also for unconsciousness and plan evacuation as soon as safely possible.

**FROSTBITE**: Not a common problem in Central Texas, frostbite occurs when the outer layers of skin, usually on extremities like fingers, toes and nose, freeze. This occurs only at temperatures below freezing, and is often exacerbated by dampness or lack of proper insulating layers. Minor frostbite will leave the skin cold and looking waxy, while in more extreme cases the flesh will become frozen hard, and discoloration may occur. Prevention includes keeping extremities covered, keeping core body temperatures warm so your body doesn't shut down blood flow to extremities, and keeping dry. This is, of course, not always possible in the wilderness in the winter, but always be aware of weather conditions before venturing out, and plan and pack appropriately. Treatment for superficial frostbite requires immediate thawing of the affected area, usually by placing the cold hands or feet against the body of the victim or another individual to allow body heat to re-warm the extremities. If frostbite is more severe, immerse the affected area in warm (not hot) water - a process that is likely to cause significant pain in the victim. In both cases, get the victim out of the cold as soon as possible (into a tent, shelter or out of the wind at minimum). Wrap and protect the affected areas once thawed and dry.

**SNAKE BITE**: Learn your snakes. Know which is venomous and which isn't. A non-venomous snake bite can cause pain, swelling, and even an increased heart rate (due mostly to psychological rather than physical causes). Treat a non-venomous snake bite as you would any puncture wound, by irrigating the wound and bandaging with a clean, dry bandage. Things are a bit different when it comes to venomous snake bites. First, know that many bites by venomous snakes do not involve the release of venom. These snakes are often striking out of defense, not with an interest to hunt prey. However, you should assume that every bite by a venomous snake injected venom; it is better to begin treatment immediately and err on the side of caution than find out an hour or too later that you are in much worse shape than you thought. Symptoms of a venous bite include weakness, nausea, sweating and heightened heart rate (these conditions may also be psychological symptoms of non-venomous bites), a burning sensation that may come on immediately or several minutes after the bite, tingling and swelling (which may not be apparent for as much as an hour), bruising or discoloration around the bite (symptoms a few hours after the bite), and often a tingling and metallic or rubbery taste in your mouth. When bit, if you can react immediately, you can use a suction-based snake-bite kit to try to remove or reduce the amount of venom that spreads through the blood stream. Do not cut the wound and try to suck out poison. Doing so is more likely to cause more harm than good, potentially damaging tissue and adding to the chances for additional infections. Do not apply a tourniquet either, as these are more often more dangerous than not having one. Immobilize the injured limb at or below heart level, treat for shock and begin evacuation. If the person bitten can walk, have them walk part of the way out - it saves time and is unlikely to significantly increase the speed of

the spread of venom, as heart rate is already likely increased due to psychological factors anyway. Venomous snakebites require anti-venom, provided by medical professionals. You should describe as best you can the type of snake that bit the injured person. Prevention of snake bites includes caution when hiking, being particularly aware of sunny spots like logs and rocks where snakes may be warming themselves in the morning. Also, watch the underbrush, wear long pants and proper footwear, and watch your step.

**OTHER COMMON INJURIES**

Rashes, sprains and strains, insect bites, bee stings, burns, abrasions and lacerations, bruises, fractures - these are all potential injuries a backpacker may encounter or endure. It is always good to have taken First Aid, and to have reviewed (and practiced) treatments for common or likely ailments and injuries ahead of your trip. In addition, a well-though-out First Aid Kit will have sufficient supplies, while not being too bulky. As with everything else in backpacking, think through the terrain, time out, skill level of participants, distance from emergency care, weather and other factors when deciding what to take in your first aid kit, and what skills to review before going. Everyone should have their own small kit, plus a kit for the group for less common but perhaps larger items.

Don't forget to review Basic Rescue techniques. Do you remember how to splint a break or sprain? How do you treat shock? What sorts of carries can you do? You never know when you may need to carry someone out over rough terrain.

## OH NO! I'M LOST! NOW WHAT?


First, don't get lost. Proper preparation, staying on the marked trail, effective use of map and compass or GPS are all essential in NOT getting lost.

If you do find yourself, shall we say, "temporarily misplaced," the first thing you should do is stop. Control your panic. Have a seat. Clear your head. Say a prayer. And think. Do not just barge your way through the woods, or run around looking for familiar sights. Stop.

OK, now, have you calmed down? Good. Now, think. How did you get where you are? When was the last time you remember knowing where you were? What sorts of broad markers can you remember? Did you cross a stream between two large rocks? Did you travel downhill? Was there an interesting clump of ferns? Was the sun directly in your eyes? If you can remember exactly how you got where you are, you can retrace your steps to get back to the trail. If not, stay where you are.

Mark your spot - take a rag or a hat and tie it to a stick or tree. Keep it in sight, and climb a tree or nearby hill to see if you can get your bearings. Do you see smoke? A large pond? A rooftop?

Did you spot a familiar landmark? If so, you know which way to go. If not, using your marker as a center-point, step out 50 or 100 feet in one direction (only so far as so you can still see your marker). Now, walk in a circle around your marker. See if you can find the trail. If not, don't panic.

Check your map and compass. Look for topographic features that can help you locate just where you are. If you can plot enough points to identify your location, you should also be able to plot a course back to the trail. In the forest, it is easy to lose your sense of direction. Trust your compass.

Still not sure where the trail is? Then plan what you will do next. Get comfortable at your current spot. Use a signaling device like a whistle, sending series of three blasts. Is it nearing dark? Gather together material for a shelter, and possibly for a fire for warmth or signaling. Hang some brightly colored items around your spot, so if you are sleeping, searchers can still find you. Say a prayer for comfort, sit back and relax. Enjoy your quiet time with God.

## FINDING DIRECTION WITHOUT A COMPASS

Whoops! Somehow, the last time you pulled out your bag of GORP, you must have accidentally dropped your compass. Now how do you find out which way you are going - or should be going?

There are many different ways to find direction without a compass. One of them is to build a compass. Take a needle from your emergency kit, hold it by the point, and stroke it against your shirt, your hair, a piece of cloth, to align the iron particles. Gently float the needle on water, or on a small piece of paper in a dish of water. The point should point roughly North.

No needle? Try the sun. The sun rises in the east, sets in the west, and travels along the sky slightly to the south in Texas (when the sun is at its apex, it will be in the south). If you know the general time of day, a quick look at the sun can give you a general bearing.

Out in a field, you can use the sun and stick method (though it is much slower than just gauging direction from the sun). Stick a tall stick in the ground, and mark where its shadow ends. Wait 15-30 minutes and mark where the new point where the shadow ends. A line between these two marks will be West-East (the first mark being the West end of the line). A perpendicular line drawn through this will point North-South.

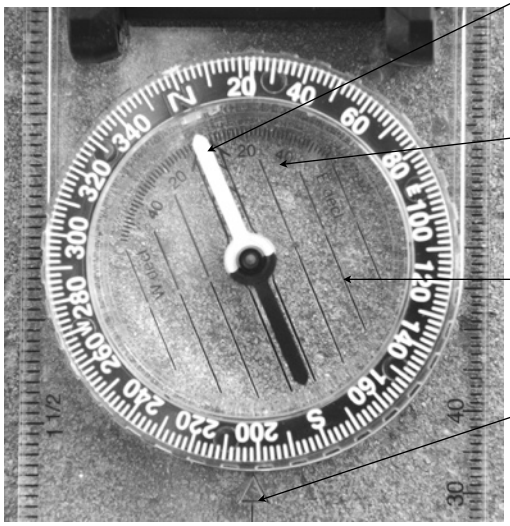
Got a watch with real hands (not a digital)? Lay the watch flat in your hand, hold a small straw at the end of the hour hand, and turn until the shadow falls along the hour hand. This means the hour hand is pointing directly at the sun. Between 6:00AM and 6:00PM standard time (adjust watch for standard time if during daylight savings time), a line bisecting the smaller angle between the hour hand and the 12 O'clock mark will point due South. North is, of course, opposite that. If the time is between 6:00PM and 6:00 AM, the line bisecting the large angle between the hour hand and the 12 O'clock mark will be South.

Are you deep in the woods or a valley, or on an overcast day and the sun isn't readily visible? Because in the Northern Hemisphere the sun is always at least somewhat to the South, moss will usually grow thicker on the North side of trees and boulders. Flowers will generally face south in the Northern hemisphere for the same reason.

And what about at night? Find the Big Dipper. A line drawn between the last two stars of the dipper part will point to the North Star, which, in the northern hemisphere, is, as its name implies, to the North.

Even if you have your compass, give these a try. Its fun, and you never know when you may need these skills.

## THE COMPASS

## HOW DO I COOK IF I CAN'T HAVE A FIRE?

It's a lovely spring day, and you are out on the first backpacking trip of the year. The sun is out, but not too hot, the breeze is blowing, and when you get back to your camp site, you are ready for a hearty hot meal. But this is Texas, and as usual, there is a burn ban. No campfire. So now what? How are you going to gook up that tasty dehydrated lasagna you have been looking forward to these last three hours?

Fret not. There are numerous stoves you can take with you. The simplest (and often cheapest) are alcohol stoves, many designs of which you can build right at home. There are small, solid-fuel stoves (the frame of the Esbit stove can be used with your home-made alcohol stove to hold the pan above the flame). Some stoves use canister gas, others give you options of different liquid fuels. Find a stove that fits your needs - weight, fuel, price, and cooking style. You don;t have to spend a lot to heat your dinner, and if you are using the freezer-bag cooking method, all you really need is a stove that can boil water.

Freezer Bag cooking, you ask? Have you seen those fancy dehydrated backpacking foods at the camping supply store? They can get rather expensive. But you can make your own "instant" meals at home, placing each particular dish in a heavy duty freezer bag. There are several places to find freezer bag recipes, and the great thing is that you can bring what you want, and have almost no dishes to wash aside from your spork!

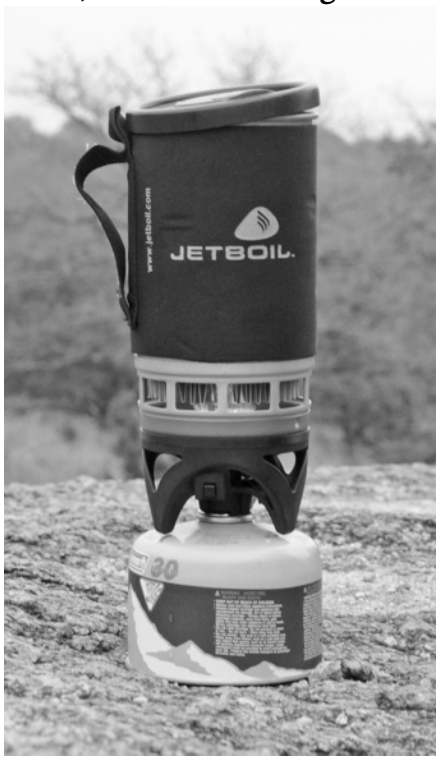
**A solid fuel Esbit stove**

**A soda can alcohol stove**


**A portable canister stove**


**Another style of pot holder**

**Another canister style stove, with its own mug**




**Making pancakes**

## PLANNING A MENU

When backpacking, you are likely to burn a lot more calories than you do at home or school; plan on at least 1.5 times the calorie count you normally consume. You can also have a higher percentage of good fats and proteins in your diet, as these are sources of energy that break down slowly, giving you additional reserves. And don't forget some nutritious but energy rich snacks, like GORP, for when you are out hiking.

To design a menu, list out items for each of the basic food groups; grains and starches, proteins, fruits and vegetables. Then mix and match, choosing at least one from each category to build your meal.

**Some Examples of Grains and Starches**

- Whole Grain Cereals
- Crackers (dense ones that wont break easily)
- Brown Rice (quick cook)
- Couscous
- Barley
- Oats
- Pasta
- Breads (tortillas, naan, etc)

**Some Examples of Proteins**

- Textured Vegetable Protein
- Peanut Butter
- Cheese
- Soy
- Vegetarian Jerky

**Some Examples of Fruits and Vegetables**

- Dried Vegetables (good for use in soups, etc)
- Dried Fruits (raisins, cranberries, pineapple, mango, apricot, etc)
- Fresh fruit and vegetables are best used on the first day; avoid canned fruits and vegetables

**Seasonings, Flavorings, Sweetners**

- Honey (comes in sticks as well)
- Home-mixed seasoning (Salt, pepper, others)
- Soy sauce single packs

**Drinks**

- Lemonade, TANG, electrolyte mix
- Herbal tea, hot chocolate

**Snacks**

- GORP (nuts, dried fruit, perhaps chocolate)
- Energy bars, granola bars

**Breakfast menu planner**

Grain:_____

Protein:_____

Fruit/Vege:_____

Drink:_____

Cooking process, supplies needed:_____

_____

_____

_____

**Lunch menu planner**

Grain:_____

Protein:_____

Fruit/Vege:_____

Drink:_____

Cooking process, supplies needed:_____

_____

_____

_____

**Dinner menu planner**

Grain:_____

Protein:_____

Fruit/Vege:_____

Drink:_____

Cooking process, supplies needed:_____

_____

_____

_____

## HOW DO I STORE MY FOOD?

Although you can often just keep your food in your pack if you have ensured there is no smell, there are several ways to make it even more difficult for the critters to get at your food.

Bring a rope. Most food caches require you to have trees as well, but you should be able to find those at your site.

If you have two fairly tall trees near your site, you can throw one end of the rope over a branch at least 10 feet off ground. Throw the other end of the rope over a similar branch on another tree about 8-10 feet away. Tie off one end of the rope to one of the trees. Tie your food back or container to the center of the rope. Now haul on the other end of the rope, and your bag should be lifted to hang between the two trees. Tie off the other rope. Remember, at least 10 feet off the ground, and at least 4 or 5 feet from either tree.

You can do a similar thing with a single tree that has a high branch sticking out far from the trunk. Toss your rope over the branch, tie off the food bag to one end of the line, haul it up so it is hanging at least 10 feet off the ground and 4 feet from the limb and trunk, and tie off the other end.

If you are at a campsite with one of those bent metal poles with a hook, you can hang your food there. If you have no trees or places to hang your food, you can keep it in a sealed bear barrel, and place it under heavy rocks to keep the curious critters out.

Dont forget that your garbage needs sealed in smell-proof containers and hung as well.

Finally, never keep food in your tent. It may be a fun adventure to be woken up in the middle of the night to strange noises outside, and peek your head out to see the raccoons trying to get at your food cache. But it is a very different thing to wake up in the middle of the night to a scratching and tearing sound on the wall of the tent, and suddenly have a surprised skunk standing at the end of your sleeping bag looking for a snack.

## ENCOUNTERING GOD ON THE TRAIL

*The heavens declare the glory of God; the skies proclaim the work of his hands.*

*Day after day they pour forth speech; night after night they reveal knowledge.*

*They have no speech, they use no words; no sound is heard from them.*

*Yet their voice goes out into all the earth, their words to the ends of the world.*

*In the heavens God has pitched a tent for the sun. It is like a bridegroom coming out of his chamber, like a champion rejoicing to run his course. It rises at one end of the heavens and makes its circuit to the other; nothing is deprived of its warmth.*

*Psalm 19:1-6 (NIV)*

David was well aware of God's presence throughout his life, but as seen in the Psalms, it is often in nature that David saw clear evidence of God, His power and His creative handiwork. David spent much of his youth out of doors, watching his father's flock. He spent a fair amount of his adult life living out of doors, running from King Saul. In both instances, he saw clear examples of God's care and protection, of the metaphorical stronghold God provides for us.

Take time during your backpacking to commune with God. Look around at nature, look at the works of God's hands. Look up at the stars at night, the vast multitudes stretching out far beyond our vision. Looks at the ants, at their industriousness, at their ability to communicate and cooperate. Look at the trees, the different designs of leaves, the various shapes of the tree, the way the roots can twist through the tiniest cracks in rocks to sustain life.

In the silence of the night, after the last hoots of the owls fade, and the coyotes finish their conversations, far from the noise of roads, radios and other modern distractions, the still, small voice of God can finally break through the chaos of modern life. Open your heart and listen to the voice of God. He is with you always.

## BACKPACK LOG

Keep a log of your backpack trips. This helps to preserve memories, but also helps as you plan future trips.

Some things to consider in your log entries:

Location: Where did you go? What was the terrain like? Were there particular difficulties in your path (water crossings, steep rock faces)? What parts of the scenery caught your breath? Was water easily available?

Conditions: What season did you go? What was the weather like? Is the area likely to be better or worse in another season? Was there ample space, or was it crowded?

Gear: What did you take? How did it fit? What worked and what didn't? Are there adjustments you should do next time? Was there gear you needed that you didn't have? Was there gear you had that you didn't use or need?

Food: What did you eat/ Was it enough? Was there something you really wanted but didn't have? How did your cooking gear work? Are there changes to your gear you may want to make?

Experience: Did you enjoy the trip? Did you grow spiritually? Did you build additional self-esteem? Did you accomplish your goals? How was the company? Would you recommend this trip to a friend?

LOCATION:

CONDITIONS:

GEAR:

FOOD:

EXPERIENCE:

OTHER:

# Who are the SAILs?

The South Austin Inner Lights (SAIL) Pathfinder Club was founded in 2009, building on a tradition of Pathfindering in the greater Austin area. Austin South once hosted the Austin Explorers Pathfinder Club. After a brief lull due to changing demographics, the Austin Avalanche was started in North Austin to serve the greater Austin area. The Avalanche became the Austin Knights, and grew rapidly. The growth and success of the Knights paved the way for the establishment of another club in Austin, the SAILs.

The Pathfinder Club, open to all youth ages 10-16, offers numerous activities to help develop the mind, body and spirit. We believe that a healthy combination of physical and mental exercise, coupled with a focus on service and placed within a spiritual framework, will build strong leaders from our youth not only for the future, but for today.

For more information, visit www.austinsouthpathfinders.com.