

SAFETY & SANITATION



- ✓ Hiking Safety
- ✓ If You Get Lost
- ✓ Survival Skills
- ✓ Safe Drinking Water
- ✓ Tool Safety
- ✓ Fire Safety
- ✓ Weather Safety
- ✓ Personal Hygiene and Washing
- ✓ Dish Washing
- ✓ Safe Storage
- ✓ Garbage Disposal
- ✓ Human Waste Disposal
- ✓ Leave No Trace Principle

- Notes -

*"I will both lie down and sleep in peace, for You alone, LORD, make me live in safety."
(Psalm 4:8)*

Being able to walk and hike safely can help lead others out of danger. Being able to share the message of Jesus Christ can help lead others to the Lord.

Hiking Safety

- **Pack** - Travel as light as possible. Carrying too heavy of a load may cause strains, sprains, or discomforts which take the fun out of hiking.
- **Repellent** - In warm seasons, always have with you a good insect repellent.
- **Reaching and Stepping** - Watch out and be careful where you reach and step. Unseen dangers may be harmful insects or animals (spiders, snakes, etc.) or loose ground or rocks which might cause you to lose your footing.
- **Shoes** - Wear well-fitting, comfortable lace-up shoes or hiking boots. Break in new shoes or boots before going on a hike.
- **Gear** - Carry a first aid kit, foot powder, extra pair of socks, moleskin for blisters, waterproof matches, pocket knife, hat/cap, whistle. Have a compass and map with you if going cross-country. Carry rain gear if weather is uncertain.
- **In Woods**
 - Follow and stay on marked trails for safety and conservation reasons.
 - Hold aside a branch or limb blocking the trail for person coming behind you.
 - Be careful about picking and eating wild plants or berries. Learn which plants are edible.
- **On Roads**
 - Be aware of your state's laws regarding hiking and biking on roads.
 - Walk single file on the edge of the road or shoulder facing oncoming traffic.
- **With Others** - For safety and fellowship, always hike with a buddy or a group.
- **Travel Plans** - Let a parent, your leader, or some other adult know your travel plans - when, where, how long, when you plan to return, who's going, etc.



*"The fear of man is a snare, but the one who trusts in the LORD is protected."
(Proverbs 29:25)*



If You Get Lost

- **Carry** with you waterproof matches, pocket knife, whistle, drinking water.
- **Sit** down, stay calm, rest, try of figure out where you are.
- **Pray** for comfort, clear thinking, and a safe return.
- **Climb** a tree, hill, or other structure to check your surroundings and route traveled.
- **Trace** your trail back as far as you can, marking it with strips of cloth or twine or broken limbs, until you see whether you are on a recognizable path or where you might have gotten off.
- **Travel** down hill or down river - do not wander aimlessly.
- **Blow** your whistle 3 times quickly or shout every 20-30 minutes. Someone may be able to hear and locate you.
- **Build** a fire if you think others will be looking for you - a smoky fire in daytime and a bright fire at night.
- **Make** a shelter if night comes or weather turns threatening - rest or sleep as best as you can.



Stop
Think
Observe
Pray & Plan

"For by grace you are saved through faith, and this is not from yourselves; it is God's gift – not from works, so that no one can boast. For we are His creation – created in Christ Jesus for good works, which God prepared ahead of time so that we should walk in them." (Ephesians 2:8-10)

Survival Skills

Each year people who enjoy outdoor pursuits find themselves in unexpected emergency conditions. Often, this is the result of the person becoming disoriented (lost), injured, stranded or due to unexpected changes in the weather. The keys to survival are to remain calm, maintain a positive attitude and use your mind to help you make adjustments.

Thanks to modern communications such as cell phones and two-way radios, most of the people who are faced with an emergency condition spend several hours rather than several days in the outdoors. With today's methods of search and rescue the majority of the missing people are located within 72 hours after they have been reported missing. However, for some who do not take proper precautions or use survival skills the experience can have tragic consequences.

Think through recent events. Determine your options. If you decide that you can not return to a safe place, commit yourself to spend the night where you are. If you remain in one spot, it is very likely that the rescuers will locate you in a few days. For every hour that you travel aimlessly, it quadruples the size of the search area. Once you have committed yourself to remaining where you are, you have three priorities:

- **Shelter** - find or construct a shelter.
- **Fire** - gather wood and build a fire for warmth.
- **Signal** - the international emergency sign for distress is three of any signal; three whistle blast, three flashes with a mirror or three fires evenly spaced. If you are near an open space make an "X" as large as possible. Placing logs or rocks along the "X" will make it more visible from the aircraft. Do not light signal fires until you hear an aircraft. Adding green limbs with leaves to the fire will help create smoke.

Survival Kits

Assembling a survival kit will help you to be prepared to spend several unexpected days in the wilderness. The survival kit is important not only for its lifesaving merits but also to help provide comfort. Consider items that you carry in your pack that can be used to help you to be prepared to survive.

Suggested Items for a Personal Survival Kit:

- Tube Tent - lightweight plastic emergency shelter that can be constructed quickly.
- Space Blanket (Bag) - lightweight Mylar fabric that reflects 90% of radiated heat.
- Fire Starters - have several dependable ways to start a fire.
- Signaling Devices - flash light, police whistle, signal mirror.
- Water Purification - have a dependable method for purifying water and a backup plan.
- Rope or Cord - 50' of rope or parachute cord.
- Aluminum Foil - 2 - 18" x 36" pieces of heavy duty foil.

The Priorities of Survival are known as the **Rules of Three**:

- **Three Seconds** - You may be doomed in three seconds if you let panic rule.
- **Three Minutes** - You can not live more than three minutes without oxygen.
- **Three Hours** - You can not live more than three hours in temperature extremes without shelter.
- **Three Days** - You can not live more than three days without water.
- **Three Weeks** - You will need food in three weeks.

Safe Drinking Water

Carry from home one or more full water bottles or canteens. If needed, refill bottles or canteens from a tested, safe public water system. Be careful to drink an adequate amount of water to prevent dehydration. It may be necessary on longer hikes or campouts to make water from natural sources safe for drinking and cooking by purification.

Water Purification

One of the following methods may be used to make water safe and pure:

- **Boiling** - Strain water through cloth before boiling. Heat the water until it comes to a rolling boil (large bubbles rising from the bottom of the pot). Let water boil for five minutes. Allow water to cool. Pour water from one clean container to another several times to add air to lose the "flat" taste boiling produces.
- **Chemical** - Use water purification chemical tablets as directed on package. These tablets may be purchased at various stores.
- **Bleach** - Use 4 drops of chlorine bleach per gallon of water. Shake well. Wait 30 minutes before drinking.
- **Water Filter** - Use a .5 micron filter to remove harmful bacteria from water. Water purification filters can be purchased at various outdoors stores.

Tool Safety

- Tools are not toys. Learn how to use each tool correctly and safely.
- Whittle or cut away from your body.
- Keep knives, axes, and saws sharp.
- Use a chopping block with axes and a sawbuck with saws.
- Never lay a tool on the ground. Build a tool rack for a place to keep tools safe.
- Keep sheaths on sharp tools when not in use.
- Before using an axe, clear an area in all directions of at least two axe handle lengths of all people, brush, branches, and other obstacles.
- Wear safety goggles because there may be the chance of flying wood chips.

Fire Safety

- Clear enough ground for the size fire you plan to build. Be sure there are no overhanging limbs.
- Build fire only big enough for the intended purpose.
- Keep water, sand, and/or a large, wet towel handy to help put out a fire quickly.
- Never leave a fire unattended.

*"Then Moses led Israel on from the Red Sea, and they went out to the Wilderness of Shur. They journeyed for three days in the wilderness without finding water. They came to Marah, but they could not drink the water at Marah because it was bitter—that is why it was named Marah. The people grumbled to Moses, 'What are we going to drink?' So he cried out to the LORD, and the LORD showed him a tree. When he threw it into the water, the water became drinkable. He made a statute and ordinance for them at Marah and He tested them there."
(Exodus 15:22-25a)*

Weather Safety

Weather conditions can be the most uncertain factor in preparing for an outdoor adventure. While the science of meteorology continues to advance, many people continue to joke about the accuracy of weather forecasts. Yet prudent leaders should check these forecasts prior to leaving. If there are chances for some extreme weather, delaying or modifying a trip might be appropriate. The disappointment over a postponed trip will pale in comparison to the lasting memories of injuries or fears from a trip turned bad. Becoming aware of potential weather conditions and learning safe techniques to respond with will greatly enhance your outdoor skills.

Cold Weather Conditions

Cold weather offers many different conditions that can require serious responses. A winter storm, for example, can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall and cold temperatures. Campsites must be prepared for the possibility of high winds, ice can make trails extremely hazardous and heavy snow can cover trails and block visibility making it easy to get lost. Winds and dropping temperatures will increase the chances for hypothermia. The accompanying Wind Chill chart shows the ranges to watch.

Estimated Wind Speed in MPH	Actual Thermometer Reading (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Temperature (F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Wind Speeds Greater than 40 MPH have little additional effect	Hypothermia Risk <i>(for properly clothed person)</i>				Frostbite Danger <i>(for properly clothed person)</i>				Severe Risk			

A person can suffer from hypothermia as easily as getting wet in a rain shower, then standing or sitting in a draft. Some tips to avoid hypothermia:

- Wear proper clothing. Use wool for insulating effect. Use nylon for wind protection. Keep clothing dry and ventilated. Remember that several layers of light clothing provide more insulation than one heavy garment.
- Avoid exposure of skin in the winter. Wear a cap on your head. The body gives up more heat through the head than from any other area.
- If you get wet, dry off as soon as possible and put on dry clothing.
- Seek shelter during bad weather.
- Eat high energy food and drink liquids as you hike.
- Hike at a reasonable pace, slow but steady.

Fog

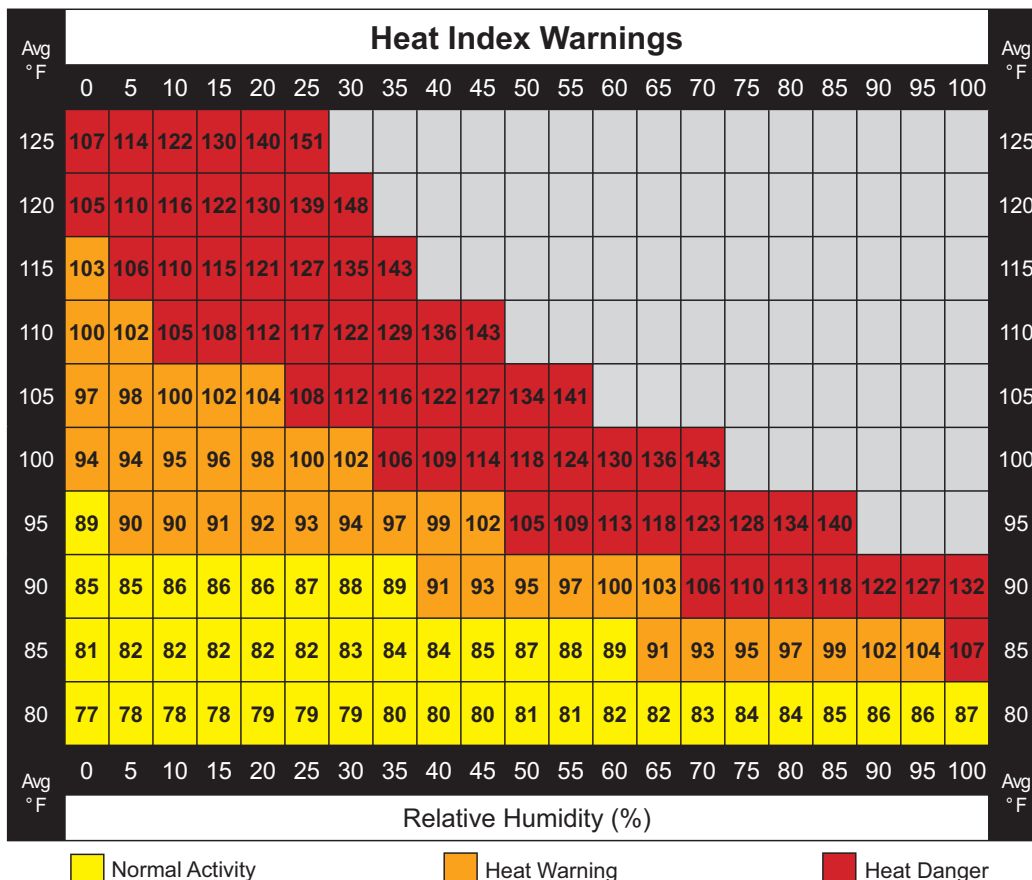
Fog can affect outdoor activities in two different ways. It can greatly restrict visibility and prevent hikers from seeing reference points indicated on maps.

- Fog makes it very easy to get disoriented and become lost. If fog sets in, delay traveling until visibility is restored.
- The moisture from fog can increase the chances of hypothermia. Wear rain gear if necessary to stay dry.

Hot Conditions

In hot weather, heat exhaustion and heat stroke become a major concern. Outdoor activities can increase the effects of heat on people. Humidity will affect the bodies ability to cool itself by perspiration. The heat index chart shows the temperature a body feels. The following steps should be taken to reduce the chances of heat exhaustion or heat stroke:

- Wear appropriate clothes. Long sleeved, lightweight, light colored clothing reflects heat and sunlight to help your body stay cool. Wide brimmed hats help block sunlight.
- Slow down. Strenuous activities should be reduced or rescheduled to the coolest time of the day.
- Drink plenty of water or other non-alcoholic drinks to replenish fluids lost by perspiration. Avoid alcohol or caffeinated drinks because of their diuretic properties that increase the flow of urine and increase the chances of dehydration.



- Notes -

God has given us instructions in all areas of life - how to get along in nature and how to properly care for ourselves. Not only is God concerned with our safety, He is equally concerned with our spiritual safety. The Bible is full of instructions on how we might keep ourselves healthy and safe in mind and body.

Severe Weather

In many parts of the country, severe weather can appear with very little warning. Keeping a watchful eye on the weather and reacting quickly can help you avoid dangers.

High Winds often occur with severe weather. When hiking, attempt to find shelter. If in camp, secure any gear outside of tents. Check all tent tie-downs and stakes.

Hail many times will accompany thunderstorms. Seek shelter quickly. If caught out in the open, use backpacks or other gear for protection.

Tornadoes, while fairly uncommon, may present a high risk of injury. Seek substantial shelter immediately. If there is no shelter nearby, lie flat in the nearest ditch, ravine or culvert with your hands shielding your head.



Lightning often may be the first indication of approaching severe weather. Lightning strikes more than 400 persons each year in the United States. On average, about 70 people are killed and many others suffer permanent neurological disabilities. Most of these tragedies can be avoided if proper precautions are taken. Outlined below are facts and suggestions you should follow in

developing a personal safety plan to lessen your chances of being struck by lightning.

When you first see lightning or hear thunder you need to activate your personal safety plans. Remember this saying:

If you see it, flee it!

If you hear it, fear it!

- Lightning often precedes the rain.
- Lightning can strike objects more than 10 miles from the cloud.
- Lightning can strike twice in the same place.
- You can determine how far away the lightning is by counting the seconds between the lightning flash and sound of thunder. Every five seconds equals one mile.

If you are outdoors you should:

- Avoid being near water (ponds, lakes, streams, gullies)
- Avoid the high ground (hills, ridges, peaks)
- Avoid all metal objects (electric wires, fences, machinery, etc.)
- Avoid unsafe places (underneath canopies, small picnic or rain shelters, or near tall trees)
- Seek shelter if possible (substantial buildings or a vehicle with a metal roof and the windows closed)

If you are outdoors and lightning is striking near by you should:

- Crouch down on the balls of your feet, place your hands over your ears, and bend your head down. Make yourself as small a target as possible and minimize your contact with the ground. Do not lie flat on the ground.
- Avoid being close to others (minimum of 15 feet apart).



If you are indoors you should:

- Avoid water
- Stay away from the windows and doors
- Do not use the telephone or electrical appliances or devices. Lightning may strike exterior electric or phone lines, inducing a shock to inside equipment.

Suspend activities for at least 30 minutes after the last observed lightning or thunder.

Injured persons do not carry an electrical charge and can be handled safely for first aid procedures. Call 911 or send for help immediately if someone has been struck by lightning.



*“Who can understand His mighty thunder?”
(Job 26:14)*

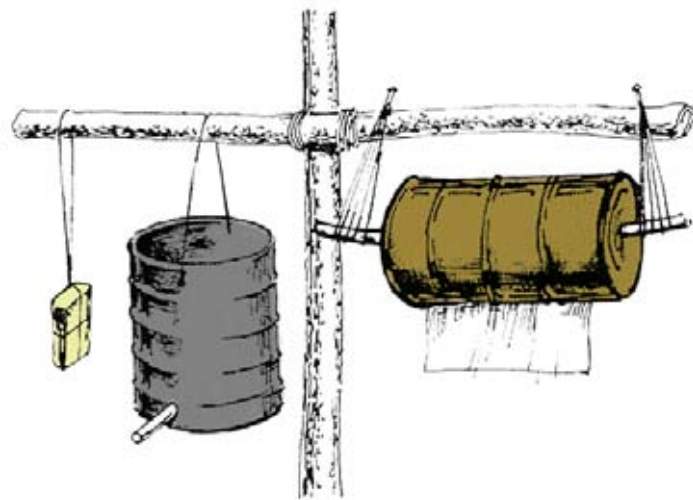
Hand washing can remove not only dirt but germs that can cause infection. It doesn't take much sin to "infect" our lives, but Christ can clean and heal our lives.

Personal Hygiene and Washing

Personal Hygiene

Good personal hygiene and care is necessary in the outdoors as well as at home. The following suggestions should be followed:

- Socks and underwear should be changed daily when possible.
- Daily bathing should be done when possible. Brush teeth at least daily.
- Hands should be washed upon arising, before preparing and eating meals, after using the restroom or latrine, and before going to bed. Use biodegradable soap.
- Feet should receive attention and be well cared for. Keep dry. Use foot powder. Avoid blisters by wearing well-fitting shoes/boots. If blisters develop, avoid breaking the skin and cover with moleskin or thick bandage.
- Rest periods should be scheduled to prevent overexertion or excessive fatigue. Sufficient rest and sleep are important.
- A complete body check should be made at the end of each day for ticks, rashes, etc.
- Have a complete medical checkup at least once a year.



Personal Washing

- **Hands** - Use biodegradable soap or a waterless hand cleanser (may be purchased at various retail stores).
- **Hand Washing Stand** - For an overnight campout a hand washing stand may be built. Use tin cans or plastic bottles to hold water and paper towels. To catch runoff water, place a container under the water bottle or dig a hole and line it with small rocks.
- **Bathing** - Use public shower facilities if available. Otherwise, make your own camp bath/shower area. Secure a secluded area some distance from the campsite and any natural water source. Have 2 pots of water and biodegradable soap; 1 pot of water for soaping and washing and the other pot for rinsing. If desired, water may be heated by setting it out in sun or heating it on camp stove or fire. After use, broadcast leftover water over a wide area.

Dish Washing

- Notes -

- **Hikes** - Short day hike meals should be planned where no cooking or utensils are needed.
- **Camps** - Dish and utensil clean-up and washing steps:
 - Scrape out excess food into garbage container or bag.
 - Wash in pot or tub of hot water with biodegradable soap. Use scrub pads as needed. *Hint! Washing can be easier if you rub soap on the outside of the bottom and sides of pots, pans, and skillets before placing on fire.*
 - Rinse in clean water to remove soap.



- Sanitize rinse by immersing in scalding hot water for a minimum of two minutes or in lukewarm water with a commercial sanitizing chemical or a capful (1 tablespoon) of chlorine bleach per one gallon of water. *Hint! The last rinse can be done easily by placing dishes in a mesh bag and dipped into the hot water. Silverware may be also placed in a smaller mesh bag or in a can or plastic bottle with holes punched in bottom.*
- Turn dishes upside down on a clean towel or piece of plastic or hang up in a mesh bag to air dry.
- Strain food particles from wash water and place in garbage container.
- Broadcast wash and rinse water over a wide area some distance from campsite or water source.
- It is important to get food and grease off dishes and utensils to prevent food poisoning and illness.

- Notes -

We should keep our house in order so that if God chose to come through the door He would find no uncleanness among us. Build your life and strive to learn and follow the teachings of Jesus.

Safe Storage

Packs - Attach ropes to packs and suspend between two trees or suspend pack by throwing an attached rope over a tree limb and tying rope to the tree. This keeps packs out of dirt or mud and away from animals.

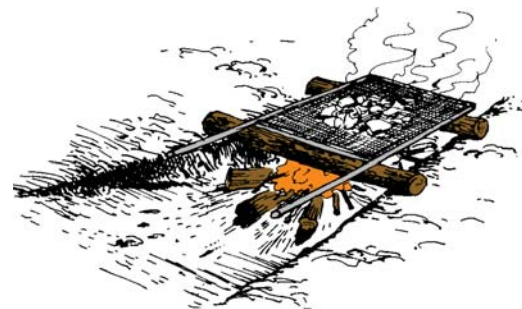
Food - In a base camp, place a portable chest on a lashed table and store food in chest and cover with a heavy canvas. Keep food and staples in closed containers to protect from ants or other insects. Since bacteria grows in the temperature range of 40°F and 140°F, food must be stored below 40°F and cooked and served above 140°F.



Garbage Disposal

On Day Hikes - Place all garbage and trash in plastic bags. Carry bags to a designated disposal area. (Pack In - Pack Out.)

On Camp Outs - Three methods of getting rid of garbage and trash are as follows:



1. Collect trash and garbage in bags hung from a tree branch high enough to keep out of reach of small animals.
2. Burn and Bury - If permissible, burn all garbage and trash. Place food and wet garbage on a screen or grill over fire to burn. Burn food out of cans. Flatten all cans and plastic bottles. Then bury all unburned trash and cover hole to ground level.
3. Pack In - Pack Out - If burning and burying is neither permitted nor desirable, place all garbage and trash in heavy plastic bags, seal or tie closed and carry away to a designated disposal area.

Human Waste Disposal

Coming upon a pile of human waste and soiled toilet paper is not healthy, sightly, or pleasant. Various ways of disposing of this waste are as follows:

- **Urine** - If toilet facilities are available close by, use them. If not, urinate at a spot away from camp, trails, natural water source, or where people might gather.
- **Solid Waste**
 - Toilet facilities - if available and close by, use them.
 - Cat-hole - For 1 person, 1 time use. Choose a secluded site some distance away from camp, trail, or water source. Dig a small hole 6-8 inches deep with a trowel or small shovel. Squat to use. Cover hole completely with soil you removed.
 - Latrine (outdoor toilet) - For a group on an overnight or longer camp. Choose a secluded, safe area some distance away (150 feet) from camp or natural water source. Dig a trench a foot or so wide and about 2 feet deep. Place removed soil, a shovel, and toilet paper nearby. Straddle trench to use. Cover your waste and toilet paper with dirt. Wash hands after use. For a camp lasting several days, build a more comfortable latrine by digging a trench between 2 trees, lashing a sturdy limb between the trees for a seat over the trench. Lash another limb higher up for a back rest. A tarp or brush around the latrine may be useful for privacy. Place toilet paper in a can or plastic bottle to protect from rain. Cut a slit for easy paper removal. *Hint! Devise a way to place an "occupied" sign along the trail going to the latrine.*



- **Pack It Out** - In certain areas and environments, latrines or cat-holes might be prohibited or waste might not easily decompose. In these cases, human waste needs to be carried out to designated disposal containers. Commercial sanitary waste disposal kits are available. Check with manager or ranger of camping area you are using concerning disposal of garbage and waste.

- Notes -

"You must have a place outside the camp and go there to relieve yourself. You must have a digging tool in your equipment; when you relieve yourself, dig a hole with it and cover up your excrement." (Deuteronomy 23:12-13)

"Leave No Trace" Principle

Replace all sod at fire sites. Fill in all holes and pack to level of ground. Pick up and remove all trash and litter. Take down any camp lashings or gadgets you have constructed. Do not disturb or harm natural plants and wildlife. Remember! For conservation and safety, good campers leave a site in the same condition they found it - or even better!

Leave only footprints. Take only memories.



"You will be confident, because there is hope. You will look carefully about and lie down in safety." (Job 11:18)