

EMERGENCY SURVIVAL

a pocket guide



Quick Information for Outdoor Safety

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THE MOUNTAINEERS BOOKS



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+ *Introduction* +

Wilderness survival is one skill that we hope to never need. However, when survival is necessary for whatever reason—accident, illness, losing one’s way, or inclement weather—it always comes at a time that is unexpected. So above all, always be ready for survival situations, however large or small.

This booklet has limitations, like all instruction texts. Written in outline form, it serves as a reminder of skills learned previously and practiced regularly. It will jog your memory and help formulate decisions based on your preexisting knowledge of survival.

This booklet does not explain recommended skills and procedures in detail, but rather highlights the main points. It does not cover every situation or possible scenario but tries to include the most common skills that may be necessary and summarizes the steps briefly. It should be preceded by practical survival and first-aid training, routine practice of the skills, and regular updates. Without them, this book is not much use.

Prevention is the cornerstone of safety. There is no substitute for using proper judgment, employing caution, being prepared, and using your brain. No matter what the activity, climate, or area, wilderness and outdoor adventures always have some level of risk involved. You should accept this risk.

No text can realistically discuss all survival issues, nor can it compensate for the limitations of readers. There is no substitute for certified survival instruction, routine practice of survival techniques, experience, and regular updates of new information. The survival skills outlined here are meant as brief reminders of information learned from other sources

such as full-length survival books and survival courses. This book has been researched using material thought to be the most accurate and up to date. However, this is not guaranteed. Readers should understand that omissions, typographical errors, and other mistakes are possible. Readers should take all responsibility for wilderness survival situations.

A Note About Safety

Safety is an important concern in all outdoor activities. No book can alert you to every hazard or anticipate the limitations of every reader. The descriptions of techniques and procedures in this book are intended to provide general information. This is not a complete text on wilderness first aid or survival. Nothing substitutes for formal instruction, routine practice, and plenty of experience. When you follow any of the procedures described here, you assume responsibility for your own safety. Use this book as a general guide to further information. Under normal conditions, excursions into the backcountry require attention to traffic, road and trail conditions, weather, terrain, the capabilities of your party, and other factors. Keeping informed on current conditions and exercising common sense are the keys to a safe, enjoyable outing.

The Mountaineers Books

+ Preparation +

Preparation is the key to any survival situation. Before you go, follow some basic principals:

1. Mental preparation is crucial. Survival experts, as well as wilderness adventurers in life-or-death situations, continue to reinforce that mental outlook is vital for survival situations. The will to survive, perseverance, and hope are the mainstays of the survival mentality. Avoid and be ready to deal with anxiety, fear, and guilt.
2. Physical preparation is equally important. You should be in good physical condition. This means regular workouts for strength, endurance, and cardiovascular conditioning. Always stay within your skill level and physical limits.
3. Formal instruction in wilderness travel and survival is mandatory. Regular practice and routine updates in information are important to keep skills fresh, especially those that are not used on a regular basis. Read and reread survival books.
4. Take cardiopulmonary resuscitation (CPR) and first-aid courses and study wilderness first-aid books.
5. Gather equipment and check, repair, and replace parts if needed. Change batteries in electronics. Replace first-aid and survival kit components that are outdated or were used on a previous trip.
6. Choose your partners wisely: They should have skills and mental and physical conditioning similar to yours. Remember, in a survival situation, you may be relying on them.
7. Plan your route and leave it with someone. Allow for changes in plan due to route or weather conditions.

8. Continually reevaluate road, trail, and weather conditions and forecasts. Check with rangers for updates on conditions. Confirm camping and trail permits.
9. Be prepared to abandon the trip if weather, trail, or other conditions are not safe.

When afield, additional measures should be followed both to prevent and maximally prepare yourself for a survival situation.

1. Constantly evaluate trail, route, and weather conditions.
2. Always stay within the limits of your and your partners' skill and equipment. Use good judgment and don't take unnecessary risks.
3. Always stay well hydrated and well nourished.
4. Make sure everyone is well rested; take regular breaks.
5. Make sure your equipment is working and your clothing is dry.
6. Keep your group in good spirits.
7. For safety, never be afraid to alter your route, cut your trip short, or turn back.

Essentials

There are essential items one should never be without, ever. These basic emergency items should be with you at all times, even on short trips. The essentials in Table 1 make up the baseline list, but keep in mind that this list should be modified and/or expanded depending on the nature of the trip being planned. Snow travel might require an avalanche beacon that would be irrelevant on a desert trip. The extra food, water, and clothing should be above and beyond what you expect to use for your trip. Sometimes this is an extra water bottle, an energy bar, a windbreaker, and minimal survival and first-aid kits. Other times this may be an entire

extra day's worth of food and water and enough clothing to spend an unexpected night out. It is best to always have enough supplies to spend at least one unexpected night in the wilderness.

Table 1: Essentials

First-aid kit

Survival kit

GPS and GPS compatible map, compass, altimeter

Sunglasses

Sunscreen, lip balm

Flashlight or headlamp, extra batteries

Extra food and water

Extra clothing

Bivouac sack or tarp

Radio or cell phone

Survival Kit

Numerous survival and emergency kits are available from commercial companies and outfitters. Buy one that suits your needs, or you can assemble your own. In general, the contents of your kit depend on how long you will be out in the field, your survival skills, the number of people in your party, how far from help you will be, and the type of activity you are pursuing. Special equipment is required for travel in the mountains, in water, in desert, or in tropical jungle. If involved in sports such as paddling, biking, skiing, snowboarding, or climbing, carry repair equipment for those activities. This may include repairs for ski/snowboard bindings, leaks in rafts, broken bike derailleur or chain, flat tires, and other such mishaps.

A minimal survival kit (Table 2) can be used for short trips in mild weather, such as a half-day hike in summer. Keep in

mind, this is the bare minimum. It is designed to fit in a coat pocket, fanny pack, or day pack.

Table 2: Minimal Survival Kit

Bandages, small
First-aid or duct tape
Firestarter
Matches, lighter, flint
GPS and GPS compatible map, compass, altimeter
Radio or cell phone
Safety pin
Sunscreen, small tube
Pocket tool (with pliers, wire cutter, screwdrivers,
tweezers, scissors, awl, knife)
Water purification tablets
Whistle

An expanded survival kit (Table 3) with more items is necessary for longer trips, such as long day hikes, or overnight backpacking. You will also need more than the minimal survival kit for rigorous activity, such as climbing, mountaineering, or other adventure sports.

Table 3: Expanded Survival Kit

Batteries, two AA or other
Cable ties, two, 7.5-inch plastic
Chemical hand/foot warmers, two
Cord, 10 feet \times 4 mm Perlon
Duct tape, 2 inches \times 5 feet
Firestarter
Insect repellent

Match container, waterproof
Matches (windproof, waterproof), lighter, flint
Needle (heavy gauge) and nylon thread
Pen and paper
Pocket tool (with pliers, wire cutter, screwdrivers,
tweezers, scissors, awl, knife)
Repair items, activity specific
Safety pins
Signal mirror
Sunscreen
Water purification tablets
Wire
Whistle

A vehicle survival kit is designed to assist you if your vehicle breaks down, gets stuck, or otherwise leaves you stranded (Table 4).

Table 4: Vehicle Survival Kit

Fire extinguisher
Flares
Food and water
Gas, extra
Jack and tire iron
Jumper cables
Light, battery powered
Motor oil, extra
Repair tools
Sand plate (jack stand for sand, snow, mud)
Shovel
Spare tire

Tire pump
Tow chain or strap

First-Aid Kit

First-aid kits are highly variable. Like survival kits, first-aid materials depend on how long you will be out in the field, your first-aid skills, the number of people in your party, how far from help you will be, and the type of activity you are pursuing. Remember that special items may be required for travel at high elevation, in water, in the tropics, or in the desert. Also, if you don't know how to use the equipment, it is useless. Some items can be replaced by improvisation, such as splint or bandage material.

A basic first-aid kit for general travel in mild climates works for basic backpacking, hiking, or biking (Table 5). It generally covers wound care. This is a bare minimum for a short hike or bike, or a day skiing in a resort. It is small enough to fit in a fanny pack, parka pocket, camera bag, or the like. If it is too bulky, you may not want to carry it for a short trip. Keep in mind that this leaves out several items you may deem essential, such as moleskin. Note: Some items in your first-aid kit may already be part of the essentials or survival kit, such as sunscreen and water purification tablets.

Table 5: Basic First-Aid Kit

Antiseptic wipe
Bandages, several sizes
Bio-occlusive dressing
Benzoin crush tube
Butterfly bandages, large
First-aid tape
Gauze, 4 × 4 inch, 2 × 2 inch

Gauze roll or triangle bandage
Gloves and CPR microshield
Sunscreen

A more comprehensive first-aid kit should be carried for day hikes, on longer trips, on overnight trips, in a car, and whenever you are doing higher-risk activities such as mountaineering, climbing, mountain biking, or paddling (Table 6). This is a general kit that you need to customize for your trip, especially if you are involved in water sports or high-altitude mountaineering.

Table 6: Expanded First-Aid Kit

Antibacterial cleanser
Antibacterial ointment
Anti-inflammatory medication (ibuprofen)
Antihistamine (diphenhydramine)
Adhesive bandages
Benzoin
Bio-occlusive dressing
Butterfly bandages
First-aid book
First-aid tape
Gauze, 4 × 4 inch, 2 × 2 inch
Gloves and CPR microshield
Hydrocortisone cream
Moleskin
Multiuse tool (tweezers, knife, scissors)
Needle
Nonadherent dressing
Oral rehydration powder

Pen, paper, accident report form
Roll (2 inch) or triangle bandage
Safety pins
Splint, malleable
Sunscreen
Syringe
Thermometer
Water purification tablets

+ *Surviving in the Wilderness* +

General Survival Procedures

Survival procedures depend on the situation, and no one algorithm can fully address all issues. However, some general principals should always be followed.

When an accident or situation occurs, quickly assess the situation and make an initial plan. Some things require quick thinking and immediate action; life-threatening situations must be dealt with. This may include rendering first aid, initiating avalanche search, or performing water rescue. Above all, safety of the group and uninjured or unaffected partners is paramount; don't risk additional injury. The situation should be continually reassessed because it will probably be in a constant state of change.

Once immediate situations are addressed, you should make a thorough assessment of the scene. Important assessment tools include the following: gather all your partners; assess equipment and skills available; evaluate your supplies of food, water, and clothing; and evaluate the mental and physical health of everyone in your group. Above

all, stay calm and avoid panic, anxiety, fear, and guilt.

Sometimes a leader is established for larger groups. This is often the person with the most survival, outdoor, or first-aid experience. However, in tight-knit groups, everyone may act as a leader, and decisions may be mutual.

Establish a priority right away. Sometimes tasks should be completed in a stepwise fashion; sometimes they are completed simultaneously. For example, one person may render first aid to an injured person while a second procures water and a third begins finding shelter.

For establishing priorities, no one list or set of guidelines can address all situations; a rough listing of priority follows.

1. Immediate priority should be given to evaluating and treating injuries; procuring water if supply is low; making sure everyone has adequate warm, dry clothing; and creating an evacuation plan if necessary.
2. High-priority tasks include finding your way if lost; following through with an evacuation plan; finding and building shelter; preparing for travel; and using radios or cell phones, if available.
3. Lower-priority tasks (for example, if you are in a multiday survival situation) include building a fire; signaling rescuers, when appropriate; and procuring food.

Evacuation Plan

When a survival situation occurs, you will usually need to make an initial plan to deal with life-threatening emergencies, followed by a more detailed plan for evacuation. Usually this is one of three situations: continuing with the trip, evacuating, or staying put and getting help. Special concerns outlined later pertain to an injury to a member of your group.

Occasionally, you can continue your trip. For example, if your chief problem is low water, you may be able to employ skills to procure water, and then continue with your trip. A small cut may need only basic first aid. Remember, however, that even a seemingly minor situation can turn disastrous. So if you choose to continue with your trip, make sure this is a wise and prudent decision.

For most survival situations, you will need to abort the trip. Initially, you should decide whether you should stay put or evacuate. There are several components to the decision. First, consider the type of situation. For example, a major life-threatening injury may require the injured person to stay put while others go for help. Likewise, if you are caught in foul weather and become lost, it may be better to stay in one place until the weather subsides. On the other hand, basic problems such as running out of food or water may require you to abandon your trip and go home.

Other factors that should be considered when making a decision include time and distance needed for evacuation, survival skills of group members, available equipment and clothing, quantities of food and water, suitable bivouac sites, available materials for shelter, current weather conditions and forecast, time left until nightfall, injuries sustained by group members, condition of the route and the feasibility of reversing it, and other factors.

Above all, survival situations are highly variable, and you must take all possibilities into account. Similarly, survival situations usually change at some point, so reevaluate the situation on a regular basis. Try to stick to your plan, but don't be so strict that you are unwilling to alter your evacuation plan for safety.

If you decide to abort the trip, get out quickly but safely. Don't take unnecessary risks. Don't risk injury. If necessary, you may need to bivouac for the night and then evacuate the next day. Be wary of shortcuts; you can get lost easier if you are off route, and off-trail travel may be difficult.

If you decide to stay put, begin procuring water and building a shelter. If needed, gather firewood before dark. Organize your gear. Consider trying to initiate a rescue with a cell phone or radio. Begin survival prioritizing as outlined previously.

Evacuating an injured or ill person is more complicated. For minor injuries, if the injured person can walk, this is a fast and safe method for evacuation. If the injured person cannot walk, you may need to carry him or her out. For severe injuries in which moving the person is difficult or contraindicated, you may need to send one person for help and leave extra food, water, clothing, sleeping equipment, and a cooking set with the injured person. Remember, with a head or spine injury, only trained personnel should move the injured person. With large groups, you can have some people go for help while others stay in a bivouac.

Regarding rescue that requires technical equipment and skill, it is best not to attempt this if you have neither skills nor equipment. This may include crevasse, high-angle rock, and swift-water rescues. It is easy to cause additional injury, so these situations are best left for rescuers.

Regarding rescue with helicopters, it is worth noting a few points. A landing zone should be at least 100 by 300 feet and marked with bright clothing or packs. Secure equipment before the helicopter approaches. If the helicopter lowers gear, let it touch the ground first to dissipate static electricity. Protect yourself and others from flying debris. Watch the top

rotor and the rear rotor; both can be difficult to see. Approach the cabin from the front, bending low to the ground, only when signaled to do so by pilot. For communicating with air rescue teams and helicopter pilots, see Signaling below.

Signaling

If you have decided to wait for rescue, as described above, several things can increase your chance of being seen. Keep in mind that rescue is often not initiated until you are reported missing. This may be several days. If you are injured and part of your group went for help, stay put if your location is known by your partner. This will speed rescue. If you are lost, stay put; traveling blindly may prolong rescue.

1. Spread out your tarp and bright-colored clothing.
2. Use your whistle if rescuers are nearby.
3. Waving may help if aircraft are searching. Try waving bright-colored clothing or your tarp.
4. A signal mirror can be used to attract searchers in aircraft or on the ground with line of site. Use the hole in the middle to direct the sun's reflection to the searchers.
5. Smoke from fire may help. Consider burning downed green branches or leaves to increase smoke.
6. On snow or sand, use downed wood, dirt, or clothing to make a large X in a clearing.
7. A cell phone or radio may be used if available. Remember that it may not work due to unavailability of signal, dead batteries, extreme cold, or damage.
8. Ground-to-air signaling patterns may be helpful. Construct large letters by using materials at hand, as depicted in Table 7. On snow use downed logs or dirt to provide contrast.