

ROCKY MOUNTAINS



Leave No Trace
SKILLS & ETHICS



The Leave No Trace educational program promotes skills and ethics to support the sustainable use of wildlands and natural areas. The concept originated in the U.S. as a way to help recreationists minimize their impacts while enjoying the outdoors. In 1991, the U.S. Forest Service teamed with the National Outdoor Leadership School (NOLS) and the Bureau of Land Management as partners in the Leave No Trace educational program. NOLS, a recognized leader in minimum-impact camping practices, became involved as the provider of Leave No Trace materials and training.

Today, the non-profit organization The Leave No Trace Center for Outdoor Ethics, established in 1994, manages the national program. The Center unites four federal land management agencies—the U.S. Forest Service, National Park Service, Bureau of Land Management, and U.S. Fish and Wildlife Service—with manufacturers, outdoor retailers, user groups, educators, and individuals who share a commitment to maintain and protect our wildlands and natural areas for future enjoyment.



LEAVE NO TRACE

Outdoor Skills & Ethics



"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise"

—Aldo Leopold, *A Sand County Almanac*

ROCKY MOUNTAIN

"The notion that [outdoor] recreation has no environmental impacts is no longer tenable."

—Curtis H. Flather and H. Ken Cordell, Wildlife and Recreationists

People enjoy the outdoors in myriad ways. We explore on foot, kayak, horseback, mountain bike, skis, snowshoes and crampons, to name a few, and there are more of us pushing our pursuits to greater extremes and into more remote parts of the natural world everyday. Our experiences are personally satisfying, but they can be costly to the places we visit and the animals we observe.

America's wildlands are diverse and beautiful. They can also be fragile. Often, outdoor recreation and its economic benefits are catalysts for conservation, but there is a flip side. Our mere presence in wildlands has an influence. Polluted waters, displaced wildlife, eroded soils and trampled vegetation are just some of

the impacts linked directly to recreational activities. Much of this damage could be prevented or minimized if recreationists knew and practiced Leave No Trace techniques.

This booklet is part of a national educational program called Leave No Trace. The program revolves around seven principles: Plan Ahead and Prepare, Travel and Camp on Durable Surfaces, Dispose of Waste Properly, Leave What You Find, Minimize Campfire Impacts, Respect Wildlife, and Be Considerate of Other Visitors. Designed to reduce the damage caused by recreational activities, these principles extend common courtesy and hospitality to other wildland visitors and to the natural world of which we are all a part. They are based on an abiding respect for nature. This respect, coupled with good judgment and awareness, allows you to apply the principles to your own unique circumstances whether you are in remote wilderness or a city park. The first step is to educate yourself and to learn the skills and ethics that allow you to Leave No Trace.



LNT Outdoor Skills and Ethics

Principles of LEAVE NO TRACE

- Plan Ahead and Prepare5
- Travel and Camp on Durable Surfaces8
- Dispose of Waste Properly13
- Leave What You Find17
- Minimize Campfire Impacts19
- Respect Wildlife22
- Be Considerate of Other Visitors28

Rocky Mountain Wildland Ethic30

A Few Terms Defined31

LNT Outdoor Skills and Ethics LIBRARY

Mountain travelers may also be interested in reading the LNT Skills and Ethics booklets about rock climbing and horse packing, as well as about camping and hiking in the Pacific Northwest, the Northeast Mountains or the Sierra Nevada to glean more information about minimizing impact in alpine regions.



To obtain these and other Leave No Trace curriculum materials or for information on courses and training, call Leave No Trace, Inc. 1-800-332-4100 or visit the Leave No Trace website: www.LNT.org.

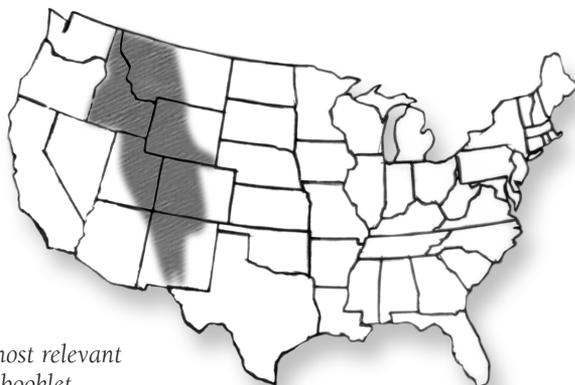
America's ROCKY MOUNTAIN REGION

The Rocky Mountains stretch from northern Canada down into Mexico in a craggy series of distinct mountain ranges. These ranges are known for their high peaks, shimmering lakes, sheer cliffs, impenetrable forests and alpine meadows. In the past, they inspired both fear and awe due to their formidable heights, extreme weather and challenging terrain. Today that fear has been tempered, but the Rockies continue to inspire awe in millions of recreational visitors.

For many people, the snowy peaks of the Rocky Mountains embody the concept of wildness. These lands are virtually untouched by civilization and were some of the first places to be designated as congressionally protected Wilderness. Here, herds of elk and mule deer graze, raptors soar, and threatened species such as the

grizzly bear roam. Sparkling streams support world-class trout fisheries. Jagged peaks and permanent snowfields are playgrounds for climbers, while backpackers camp near fragrant fields of purple lupine and fiery red Indian paintbrush.

Unfortunately, the people who visit the Rockies each year have left their mark. Trails braid their way across meadows, campsites are barren, fire rings dot lakeshores, non-native plants have taken over trail corridors, even acid rain from industrial development thousands of miles away affect the mountains by altering the pH of lakes. Many of these impacts could have been reduced or eliminated through careful traveling and camping. You can help minimize future impacts on the lands you love by knowing and practicing Leave No Trace techniques.



■ Area most relevant to this booklet

PLAN AHEAD *and Prepare*



Plan ahead by considering your goals and the goals of your group. Communicate expectations within your group before you leave home. Prepare by gathering information about your destination and activity, and by acquiring the technical skills, first aid knowledge and equipment to do the trip right.

CHOOSE THE RIGHT TRIP. Build Leave No Trace into your plans by picking a destination that is appropriate for your group and by allowing yourself plenty of time to travel and camp with minimal impact to the land, wildlife and others. Be prepared to sit tight or turn back when you experience inclement weather, sense danger or sustain an injury. That way, you won't have to abandon Leave No Trace techniques for the sake of safety.

EDUCATE YOURSELF. Know the regulations and special concerns for any area you visit. Because every wildland is unique, regulations and permit stipulations vary. Learn how to Leave No Trace wherever you go. Start by asking about local ecology and local minimum-impact practices and guidelines.

Information sources:

- Land management agency websites, offices and visitor information centers
- Sporting goods stores
- Bookstores
- Clubs and non-profit groups
- Local conservation organizations
- Libraries
- Nature centers
- Internet

PLAN FOR YOUR GROUP. Always inquire about group size limitations in advance. Recreation managers or visitor center staff can fill you in on pertinent regulations and suggest destinations suited to your needs. The skills and behavior of your group should fit with the ambiance of the place you visit. For example, people expect some noise and commotion around picnic areas, large campgrounds and other developed recreation sites. In the backcountry, on the other hand, visitors want to experience nature without these distractions.

Small versus large groups. Regardless of the size of your group and the purpose of your outing, the practice of Leave No Trace techniques requires care and forethought. Avoid problems by teaching everyone about Leave No Trace before leaving home.

Whenever possible, visit wildlands in small groups. Large groups can be boisterous and disruptive unless they are well supervised.

If you are planning for a large group, try to include enough experienced leaders so the group can be divided to hike and, if possible, camp separately. Large and less knowledge-

PLAN AHEAD *and* Prepare

able groups are best accommodated in popular places where there are developed trails and established campsites.

SCHEDULE YOUR TRIP TO AVOID CROWDS AND VULNERABLE ENVIRONMENTAL CONDITIONS.

Visits to popular wildlands during high-use periods, such as holidays and weekends, are often fraught with crowds, parking problems, conflicts between groups, even the inability to secure a backcountry permit because of the swarms of people heading into the mountains. To prevent these problems, explore places that are less well known or visit popular areas at off-peak times for a less crowded and more enjoyable experience.

Avoid travel when environmental conditions make recreational impacts more likely or severe. Early summer in the Rockies can be wet from melting snow. Traveling in these conditions erodes existing trails or creates new ones when hikers detour around snow-covered sections. The best time to travel in the mountains without a trace is before snowmelt has begun or after things have dried out.

USE PROPER GEAR. Prepare for extreme weather, hazards and emergencies. Weather in the Rockies can change dramatically over the course of a day. As the old timers say, "If you don't like the weather, wait five minutes." Typically, summer is characterized by afternoon thunderstorms accompanied by hail, lightning, snow and radical temperature changes. Even if the sky is clear when you leave your vehicle, don't gamble

on it staying that way for long. Bring the right gear to withstand all kinds of weather.

Equipment that keeps us safe and comfortable in extreme conditions can also reduce impacts on our surroundings. A well-prepared traveler is able to add or subtract layers of clothing throughout the day to accommodate changes in temperature and precipitation. The unprepared person may be forced to build a high-impact fire to stave off the cold or dry out clothes. Likewise, if trails are muddy, someone without gaiters or waterproof boots may be tempted to trample trailside vegetation in order to keep his or her feet dry.

Essential equipment includes:

- Camp stove and fuel
- Cooking pot
- Matches or a lighter
- Signal mirror, whistle or fluorescent vest
- Detailed maps
- Food (Carry an extra day's worth of food in case of an emergency.)
- Water, plus a water filter or purification tablets
- Warm clothing and rain gear
- Protection from the sun and insects
- Shelter

PLAN YOUR MEALS. Having enough food is essential to the success of a trip, but it's a mistake to bring too much. Plan your meals in advance so you won't have leftovers. If you get rid of packaging at home, you won't be tempted to leave it behind when your pack feels heavy. Instead, place food in reusable containers or plastic bags that are light-

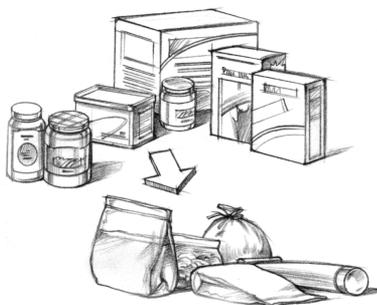
PLAN AHEAD *and Prepare*

weight and easy to carry out. Unwrap candy so the wrappers don't accidentally fall out of your pocket and onto the ground.

Talk to local land managers about special food storage considerations for the area you are visiting. In bear country, for example, you will need to either hang your food or secure it in a bear-proof container. (See "Special Considerations for Bear Country" on page 24 for more information on camping in bear habitat.) In other places, your primary food storage concern could be keeping edibles away from rodents. Either way, you may need special equipment to protect your food from hungry wildlife, so it is important to know the specifics ahead of time.

DEVELOP SKILLS AND KNOWLEDGE. Having prior knowledge of factors such as the local ecology, common hazards and your personal abilities will enable you to have fun on your trip while staying safe and protecting the land.

Know the skills and equipment needed for your chosen activity. Learn from an experienced friend, take a course or hire a competent guide. Make sure that first aid, navigation and self-rescue are part of your training and be sure you're in adequate physical



shape for the trip. Research the hazards you may encounter at your destination. Travelers in the Rockies need to be prepared for everything from river crossings and bear encounters to the physiological effects of altitude. Exceeding one's ability is a leading cause of back-country emergencies, so understand both your physical and mental limits.

Because Leave No Trace practices vary according to the plant communities you travel through, having some knowledge of local ecology will help you minimize your impact on the land. In the Rocky Mountains, woody shrubs such as grouse whortleberry (*Vaccinium scoparium*), a common understory plant in lodgepole forests, are highly susceptible to trampling and cannot withstand even a night or two of camping without being adversely affected. The grasses and sedges found in sub-alpine meadows, on the other hand, show little evi-

PLAN AHEAD *and Prepare*

dence of damage even after repeated passes by hikers. Having this kind of information about the region you are visiting will help you decide the best place to walk, sleep or dig a cat hole.

TAKE RESPONSIBILITY. With the advent of cell phones, the wilderness has gotten a little less wild. Now people can—and do—call for help when they get disoriented or have a minor injury like an ankle sprain. Getting rescued has important implications for you, the people who attempt to help you, and the terrain. Significant impacts to the landscape and wildlife can result from rescue operations that involve vehicles, helicopters or large numbers of people. Take responsibility for your own safety by practicing self-awareness and good judgment. Minimize risk by planning a trip that matches your skills and expectations. Be prepared to rescue yourself from tough situations.

Don't build cairns, use flagging, or

deface rocks or trees to mark your way. In the mountains, cell phones and radios often do not work because of the topography and basic lack of service. Be self-reliant, don't depend on technology for help.

How to stay found:

- Register at the trailhead or with a ranger. (Often this registration is required, so check to make sure you comply with the law.)
- Be a competent navigator. Carry a map and know where you are at all times.
- Stay with your group.
- Look over your shoulder and take note of obvious landmarks along your route.
- Give a friend your itinerary and instructions explaining what to do if you don't return on schedule. Leave a second copy on the dashboard of your car.
- Stay put if you do get lost. It's easier to find a stationary target than one that keeps moving.

TRAVEL AND CAMP *on Durable Surfaces*

RECOGNIZE DURABLE

SURFACES. What effect does a footstep have? The answer is, it depends. A footstep means different things to a tree sapling and meadow grass, to leaf litter and an unstable scree slope, to a gravely riverbank and a dwarf alpine flower.

Although the severity may vary, hiking and camping can damage

plants and cause erosion. One misplaced foot may bruise, crush, uproot, tear or kill a vulnerable plant. Vegetation protects underlying soils. Once plant growth is destroyed, erosion can continue with or without further use. In addition, human traffic compacts soil making it difficult for the roots of seedlings to penetrate. Compaction also reduces pore spaces

TRAVEL AND CAMP on Durable Surfaces

so it is harder for water and oxygen to travel through the soil to plants.

To avoid these kinds of problems, hikers need to recognize “durable surfaces.” Durable surfaces are surfaces that are minimally affected by camping and hiking. They include rock outcrops, sand, gravel, trails, dry grasses, snow or water. They are places with little or no vegetation or areas where your tracks will be wiped clean by melting snow or high water.

CONCENTRATE USE IN POPULAR AREAS. In popular areas, durable surfaces are usually manmade, such as a trail or an established campsite. Concentrating use on these surfaces minimizes disturbances to soils and vegetation.

Stay on designated trails. On trails, walk single file in the center of the tread—even where it’s wet, rocky or muddy. Trails become progressively wider and form parallel paths when

people walk on the margins or detour around obstacles. Likewise, “social trails” —or unofficial trails between campsites, water sources and cooking areas— mar campgrounds and other popular areas. Always use established roads and trails to visit campsites and other places of interest. Taking a shortcut, especially on switchbacks, has severe consequences. Shortcuts become trails or gullies that cause erosion and require costly restoration. Keep out of areas where efforts to restore vegetation and soils are in progress.

Another reason to stay on trails is to minimize animal disturbances. Wildlife have learned to expect people on trails and are used to these encounters.

Boating, fishing and other water-based activities can damage shorelines, stream banks and wetlands. Inquire locally about how to minimize your impact on these resources.



multiple paths

TRAVEL AND CAMP *on Durable Surfaces*

Always choose durable sites to launch, anchor and dock your boat, and avoid sites with abundant wildlife.

Use established campsites.

Choose a well-established campsite that's big enough for your group. Some popular areas have officially designated campsites, shelters or platforms. Use of these amenities can reduce damage to vegetation and other natural features. If campsites are not formally designated, look for and use sites where the ground cover is already worn away.

Be aware that not all established campsites are legal. In the Rocky Mountains, old campsites are commonly found close to water and trails, well shy of the 200-foot rule common to the



national forests and parks of the region. Established by backcountry visitors well before regulations about camping were put into place,

these sites are tempting. The bare ground left from previous campers looks like the perfect minimum-impact place to pitch your tent, but often these historic sites have been 'closed' by the managing agency to protect water resources and reduce impacts to wildlife and other visitors. To avoid a ticket, be responsible and look for established sites that are both low-impact and legal.

Concentrate your tents, packs, gear and cooking area in the center of one previously compacted, naturally resistant or durable area. This approach protects surrounding vegetation and prevents development of "satellite" sites. The only exception to this guideline occurs when you are camping in areas inhabited by bears. (For more information on bear camping, see "Special Considerations for Bear Country" on page 24.)

Good campsites are found, not made. What makes the perfect campsite? Safety, privacy and comfort never go out of style, and securing such amenities does not require cutting branches, digging trenches or building furniture. Camp stoves, air mattresses, lightweight collapsible tables and chairs, lanterns—even solar show-ers—are readily available at

reasonable prices, and they pack in and out with ease.

Trees are often damaged near campsites. They may have someone's initials carved into their bark or be scorched by lanterns, girdled by ropes and stripped of branches from the ground to head height. The scars left by such activities are unattractive and may open the tree up to disease. They are also a very obvious sign of humans. To leave no trace with trees, take care not to break off branches while securing tent and clothes lines, or when suspending food or game carcasses. Don't use wire or nails. Place a stuff sack or other material under ropes or where padding is necessary to protect the tree. Likewise, place lanterns where they won't singe bark and don't use trees as targets or for storing hatchets and knives.

Boots with lug soles tear up vegetation and pick up more dirt than soft-soled shoes, so you will have less impact on the land—and be more comfortable—if you wear sneakers, sandals or some kind of lightweight shoe around camp.

Breaking camp. Leave your campsite clean and natural looking. In wildlands, we are visitors, but we are also hosts to those who follow. They will notice our hospitality, or lack of it. Litter, graffiti, tree damage, visible human and pet waste, unsightly fire rings and the like are senseless, and they also discourage people from camping in the area. In popular places, you want to leave your campsite so that others will use it after you are gone. A clean campsite is an inviting one.

DISPERSE USE IN PRISTINE

AREAS. When you travel through pristine parts of the Rockies, you feel as if no one has ever been there before. Pristine areas are those that see little human traffic. They are places where there are few, if any, trails and no established campsites. They feel truly wild.

Proliferation of trails and campsites in pristine areas has alarmed both resource managers and travelers across North America. Even in places where visitor use has remained relatively stable, such as in the Spanish Peaks Wilderness, MT, campsites are sprouting up in traditionally low-use areas. To prevent the spread of campsites and protect the wildness we seek in pristine areas, visit such places only if you are committed to minimizing your impact.

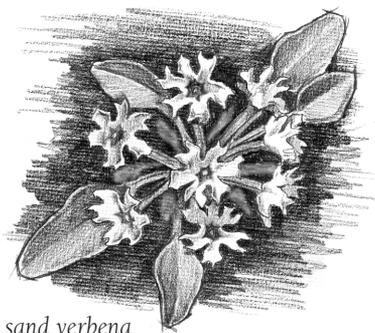
Avoid creating trails and campsites.

Consult local land managers about off-trail travel and the appropriate use of game trails. Use durable surfaces such as rock, snow, dry grasses, ice, gravel, sand and navigable water. When crossing vegetation, spread out. If each person takes a slightly different route, a distinct trail is less likely to form because no single plant receives multiple footfalls. Walking single file is acceptable where there is little chance of trampling plants such as across boulder fields or on snow.

Traveling off trail may not be appropriate in some areas. For example, Yellowstone sand verbena (*Abroonia ammophila*), an endemic plant found only along the shore of Yellowstone Lake in Yellowstone National

TRAVEL AND CAMP *on Durable Surfaces*

Park, is extremely sensitive to disturbance. Increased visitor use along the lakeshore may have contributed to the decline of the species. Even



Yellowstone sand verbena

species that aren't scarce but are fragile deserve special care. As mentioned before, grouse whortleberry is abundant in the lodgepole forests of the Rockies, but its abundance does not ensure resilience. Studies indicate that grouse whortleberry shows the effect of walking and camping years after the event occurred. If you absolutely must travel off trail through areas inhabited by sensitive species or where you find delicate soils, try to place your footsteps in the least destructive locations such as on rocks or patches of bare ground and encourage your companions to step in exactly the same spots.

Campsites selection in pristine areas. Select the most durable camping location

possible. Again, these durable surfaces include bare ground, gravel, rock, sand or snow. Modern inflatable sleeping pads make sleeping on rock surprisingly comfortable, so don't hesitate to make your bed on a granite outcrop or gravelly moraine.

Unlike popular areas where you want to camp where others have camped before, when you are in a pristine location, choose a place where no one has slept to pitch your tent. You do not want to create established campsites in pristine areas, so lightly used, pre-existing camping spots should be left alone to recover.

Before unpacking, look for obvious bird nesting activity, burrows and other signs of animals. Choose an area that seems safe and free of wildlife. Look for a large rock slab, a graveled spot or some other equally durable space to locate your kitchen area. Concentrate your activities on this surface to protect surrounding areas. If necessary, reserve less durable ground for your sleeping site.

You can keep trails from forming around your campsite by varying your route to water, to the "bathroom" and to sleeping areas. Also impacts can often be avoided by staying only one night at each camping spot. In general, manage your activity to

TRAVEL AND CAMP on Durable Surfaces

avoid harming the natural features of the site, especially those that do not regenerate or do so very slowly—such as lichens.

Before departing, disguise the site by:

- Replacing rocks and sticks
- Re-covering scuffed-up areas with leaf litter or pine needles
- Raking away footprints with a stick
- Fluffing up matted grass
- Picking up all trash and checking for items you may have left behind.

Your goal is to camouflage the site so that others do not recognize and

use it as a camping spot. In pristine areas, campsites will recover if they are only used once or twice in as many years.

PROTECT WATER RESOURCES.

Animals need access to water and may be frightened away if you are camped too close to their usual source. Camping near water can also lead to accidental contamination by wash water, food scraps and human waste. For these reasons, most national forests and parks in the Rocky Mountains require that you camp at least 200 feet (70 adult steps) away from water.

DISPOSE of Waste Properly

PACK IT IN, PACK IT OUT. “Pack it in, pack it out” is a familiar mantra to seasoned wildland visitors. Every user of recreation lands has a responsibility to clean up before he or she leaves. Inspect your campsite and rest areas for trash or spilled foods. Pack out all trash and garbage (cooking waste), including leftover food.

Plan meals to avoid generating messy, smelly garbage. Packing out kitchen waste, such as bacon grease and leftovers, is critical to prevent wildlife from connecting humans with food. In the Rockies, you often find jays or marmots hovering around your campsite waiting for a handout, chewing on your boots or stealing scraps from your table. Such behavior may simply irritate campers or it may lead to wildlife becoming aggressive and threatening. If this happens, the

animal, particularly if it is a bear, may be killed to prevent future dangerous encounters with humans.

Litter can also be deadly for animals. Fishing lines, lures and nets ensnare and injure everything from dogs to



DISPOSE of Waste Properly

herons. For these reasons, a clean campsite and careful attention to picking up litter may save an animal's life.

Don't count on digging a hole or using a fire to dispose of kitchen waste or non-burnable trash such as styro-foam and aluminum. Garbage that is half-burned or buried will still attract animals and make a site unappealing to other visitors.

Carry plastic bags to haul your trash (and maybe someone else's). Before moving on from a camp or resting place, search the area for "micro-garbage" such as bits of food, candy wrappers, cigarette filters and organic litter like orange peels, or egg and pistachio shells. Invite the kids in your group to make a game out of scavenging for human "sign."

HUMAN WASTE

"¿Donde está el baño?" "Ninahitaji kuji-saidie?" No matter how it's said, "Where's the bathroom?" is an important question, especially in wildlands. Where there is no bathroom per se, answering the call involves pre-planning, initiative and creativity. The four objectives of proper human waste disposal are:

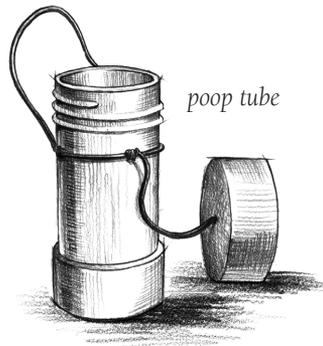
- Avoid polluting water sources
- Eliminate contact with insects and animals
- Maximize decomposition
- Minimize the chances of social impacts.

Improper disposal of human waste can lead to water pollution, the spread of illnesses such as giardia, and unpleasant experiences for those who follow.

Facilities/outhouses. Whenever possible, take time to locate and use bathrooms, outhouses and other developed sites for human waste disposal.

Carrying waste out. Visitor use is often high and soils sparse in alpine areas. Recreation managers trying to protect human health and water quality employ a spectrum of toilet designs and approaches to managing human waste—even airlifting waste out with helicopters. One option to help with the problem is to carry and use a commercial device designed for transporting human waste.

You can also make your own disposal bag by packing a handful of kitty litter in a brown lunch bag. Once you've used the brown bag, place it inside a doubled plastic bag for transport. Some people prefer to



pack their brown bags inside a PVC tube with a screw-top lid, a so-called "Poop Tube." Dispose of the contents in pit toilets, porta-johns, or according to package instructions. Local land managers may recommend other appropriate disposal techniques.

DISPOSE of Waste Properly

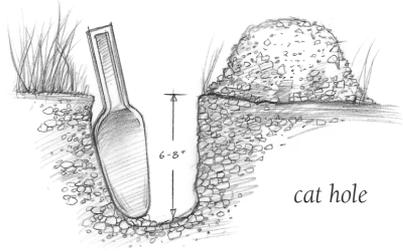
Cat holes. If no facilities are available and carrying waste out is impractical, deposit solid human waste in “cat holes” dug 6 to 8 inches into soil at least 200 feet (70 steps) from water, camp, trails and drainages. Don’t leave human waste under rocks where it is more likely to get washed into water sources by rain or be stumbled upon by some hapless hiker.

Whenever possible, go to the bathroom during the day’s travel to help prevent high concentrations of cat holes near campsites. Bring a trowel to dig the hole and disguise it well after use. The microbes found in soil will break down feces and the pathogens they contain, but in alpine regions where soils are thin and summer is short, this process occurs extremely slowly. Therefore, it is imperative to locate your cat hole well away from water and places where other people may accidentally encounter it.

If the cat hole method is ill suited to your group, try to camp where an outhouse or pit toilet is available.

Plan ahead to pack out soiled toilet paper. Double bagging it in plastic prevents any accidental contamination. You might try bringing along some baby wipes as well. Wipes deodorize your trash bag and help you stay clean. Burning toilet paper is not recommended because the practice has caused wildfires.

If for some reason you are unable to carry out the paper, use as little, unscented, dye-free paper as possible and bury it deeply in your cat hole. Remember, it takes years for the toilet paper to decompose in the thin soils common in the Rockies, so consider



ways to minimize or avoid its use. “Natural” toilet paper such as grass, sticks and snow can be surprisingly effective and is abundant in the mountains.

Always pack out feminine hygiene products because they take years—to not decades—to decompose and while they are breaking down, their odor attracts animals.

Make sure you wash your hands thoroughly after you use the bathroom to prevent spreading disease through accidental contamination of food, cookware and utensils.

Urine. While the odor of urine can be a problem in heavily used areas, it is typically not a health concern. Urinate well away from camps and other high use areas where urine is likely to be concentrated and can stagnate. Animals with salt-deficient diets such as mountain goats and mule deer sometimes defoliate plants to consume the salt in urine, so urinate on rocks or bare dirt rather than on the vegetation. Never leave your toilet paper on the ground—pack it out.

Winter. Winter conditions present special challenges. Water is everywhere—it just happens to be frozen—and the soil is usually several feet out of reach and hard as a rock.

DISPOSE of Waste Properly

Packing out human waste may be the best disposal option unless you can locate a patch of bare ground where a trowel can penetrate the duff.

Because waste is frozen in the winter, packing it out is not as distasteful as you may think.

DISHES. For dish washing, collect water in a clean pot or expanding jug and take it to a wash site at least 200 feet away from water sources. This lessens trampling of lakeshores, riverbanks and springs, helps keep soap and other pollutants out of your water source, and allows the soil to act as a filter for your wastewater. Use hot water, elbow grease and little or no soap. Strain dirty dishwater with a fine mesh strainer before scattering it



broadly over an unvegetated area. If you scatter on vegetation, animals may defoliate the plant in search of food. Pack out the food scraps left in your strainer in a plastic bag along with any uneaten leftovers. (See "Special Considerations for Bear Country"

on page 27 for details on disposing of wash water in areas where you are concerned about bears.)

In developed campgrounds, food scraps, mud and odors can accumulate where wastewater is discarded. Contact your campground host for the best disposal practices and other ways to Leave No Trace at your campsite.

BATHING. Always wash yourself well away from shorelines (200 feet or 70 steps), and rinse with water carried in a pot or jug. Where fresh water is scarce, think twice before swimming in creeks or potholes or before using precious water for bathing.

Lotion, sunscreen, insect repellent and body oils can contaminate vital water sources, so it is a good idea to rinse off before swimming. Solar showers are a relatively lightweight way to have a warm shower even in the mountains. Use unscented soaps and lotions when traveling and camping in bear country. Hand sanitizers that don't require rinsing allow you to wash your hands without worrying about wastewater disposal.

DISPOSE OF GAME ENTRAILS.

The remains of fish and wild game should be left well away from trails, water sources and campsites. In some situations, it may be appropriate to bury, burn or pack out the viscera with the garbage particularly in areas where bears are found. Official guidelines and recommendations vary considerably from place to place, so call ahead for specifics.

LEAVE What You Find

People visit wildlands for many reasons, among them to explore nature's mysteries and surprises. While many visitors are offended by finding litter in these wild areas, ecologists, botanists, archaeologists and other scientists are actually more concerned about impacts that impair the function of natural ecosystems, affect rare species or destroy the historical record. They are worried about what is missing from our favorite wildlands, things like native plants, healthy soils and archaeological artifacts. Leaving such things as we find them helps scientists understand the natural balance of the area and allows us to pass the gift of discovery on to those who follow.

PRESERVE THE PAST.

Discovering evidence of the past such as old trappers' cabins, rock art or antique glass is exhilarating, and you may be tempted to take home souvenirs. But on public land, such structures and artifacts are protected by the Archaeological Resources Protection Act and the National Historic Preservation Act and should not be disturbed. These include seemingly insignificant potsherds, arrowheads, logging or railroad equipment, even trash dumps from 50 or more years ago. It is illegal to



excavate, disturb or remove these resources from any public lands. Observe but do not touch them.

For Native American tribes across the Rocky Mountain Region, some places and objects found in the wild hold profound sacred meaning in their religious beliefs and ceremonies. You may stumble upon circles of rocks forming medicine wheels or old tipi rings while out in the mountains. Some of these are protected by fences, such as the Medicine Wheel in the Bighorn Mountains of Wyoming. Others you may discover with no warning. You can also find other artifacts left behind by the former inhabitants such as the traps used to round up bighorn sheep by the Sheep-eater Indians of Wyoming's Wind River Mountains.

The cultural value of these sites can be damaged or destroyed by careless behavior. Avoid camping near rock art panels, historic structures, rock alignments, ruins and

LEAVE What You Find

scatters of chipped stone or potsherds. Show respect for Native American culture and leave these objects where you find them.

LEAVE NATURAL FEATURES

UNDISTURBED. Load your camera, not your pack. Let photos, drawings and memories comprise your souvenirs. Although natural objects may be collected on some public lands, a permit is often required. Federal law applies to all public wildlands, so it is important to investigate pertinent regulations before gathering any objects.

Gathering medicinal herbs and edibles, such as arnica (*Arnica ssp.*) or glacier lilies (*Erythronium grandiflorum*), can cause local or even regional scarcity. Practice and encourage restraint. Don't collect in places where only a few plants of a desired species are found. Where they are abundant, gather over a wide area and leave plenty of plants behind. Enjoy the beauty of wildflowers where they grow rather than picking a bouquet. A single alpine sunflower (*Rydbergia grandiflora*), found only in the tundra areas of the Rocky Mountains, stores solar energy for ten summers before blooming once, producing seeds and dying. If you pick one such flower—a flower that will wilt in a matter of hours—you end that plant's life cycle after years of effort.

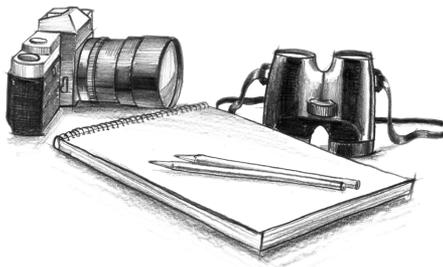
Help children

investigate natural objects in their own environments. Remind them that these things fill important ecological niches: an antler is gnawed by a vole for minerals; some petrified wood shelters the entrance to a pika's burrow; and a feather is woven into the nest of an osprey. Objects in nature derive much of their beauty from their surroundings and never look quite the same back home.

AVOID SPREADING NON-NATIVE PLANTS AND ANIMALS.

Invasive species—or non-native plants, animals and organisms that invade or are introduced to an area from elsewhere—can cause large-scale, irreversible changes to ecosystems by eliminating native species over time. According to the U.S. Fish and Wildlife Service, invasive species have contributed to the decline of 42 percent of the country's threatened and endangered species. Invasive plants affect every habitat type found in the nation's forests, parks and other public lands. There is no effective treatment for many invasive species and we are losing the native, living natural heritage that protected lands were intended to conserve.

Recreationists play a role in the spread of invasives by transporting live animals, plants and seeds, and agents of diseases. The potential for new infestations increases every day as more and more outdoor seekers



LEAVE What You Find

travel from one wildland to another around the globe. At campsites in the Bob Marshall Wilderness in Montana, for example, three of the four most common plant species are invasives.

We can help prevent the spread of invasive species by following a few practical suggestions.

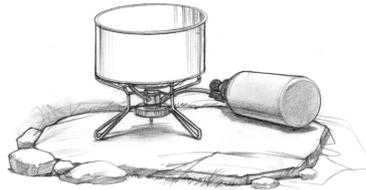
- Don't transport flowers, weeds or aquatic plants into wildlands.
 - Empty and clean your packs, tents, boats, fishing equipment and other gear after every trip. Water, mud and soil may contain harmful seeds, spores or tiny plants and animals.
 - Don't bring firewood with you. It may be contaminated with tree killing insects or diseases.
- Instead buy local wood near your destination or gather it upon your arrival.
 - Clean the dirt off of your boots, laces or tire treads.
 - Never discard or release live bait.
 - Make sure packstock and pets are immunized, and their coats are free of seeds, twigs and harmful pests such as ticks.
 - If you carry hay or other feed, make sure it's weed free. Feed pack animals food that is certified weed-free for at least three days before entering wildlands. Check locally for specific regulations regarding the use of weed-free feed.
 - Help landowners or land managing agencies initiate control efforts by alerting them to infested areas.

MINIMIZE *Campfire Impacts*

The natural appearance of many recreation areas has been compromised by the careless use of fires and the demand for firewood. Campfires are beautiful by night. But the soot-scarred rock rings—rings that are often overflowing with ashes, partly burned logs, food and trash—are unsightly by day. More importantly, campfires can and do ignite wildfires.

Some of us grew up with the tradition of campfires. But fires are no longer essential to comfort and food preparation, and in many

places they are restricted or forbidden. Ask about fire regulations from land managers before you head into the mountains.



USE A STOVE. Visitors should carry a stove, pot, matches and sufficient fuel to cook all meals. Build fires

MINIMIZE *Campfire Impacts*

only when conditions are right—the danger of wildfire is low, dead and downed wood is plentiful, and there is sufficient time to prepare the fire site, burn all the wood to ash, let the ashes cool, and clean up.

Fires are inappropriate in environments where plant growth is extremely slow. Alpine krummholz takes hundreds of years to reach just a few feet in height and a couple of inches in diameter. Where trees have died, the standing dead wood buffers the wind and creates a protected microclimate for new growth. Dead krummholz also provides nesting areas for birds and animals, and as the wood breaks down, it releases critical nutrients into the soil. Building a fire with such wood deprives the environment of nutrients and habitat while providing you with just a few short minutes of flame. For these reasons, many areas prohibit campfires above treeline.

BUILD A MINIMUM-IMPACT FIRE.

Consider whether a fire makes good sense at your picnic or campsite.

Use an established fire ring or grate.

Fire rings dot the Rocky Mountains. In fact, you often find dozens in popular camping areas. To prevent this continued proliferation, always use existing rock rings for your fire. If your campsite does not have a fire ring, don't build one. Instead use one of the low-impact campfire techniques listed below.

To ensure that others use the same fire ring you used, leave behind a single, clean circle of rocks that is free of excess ash, half-burned wood and

trash. Destroy any extra fire rings in the area. Throw blackened rocks into rivers or lakes and scatter cold ashes broadly. The more camouflaged the site, the less likely the next camper will reconstruct the old fire ring.

If a fire grate is present, don't build or use a rock ring. Leave the grate clean and ready for the next person.



Pan fires. Fire pans are metal oil pans or aluminum roasting pans that make good containers for low-impact fires. Use a pan on a durable, unvegetated surface away from cliffs or overhangs. Line it with a few inches of inorganic soil and elevate it with stones to prevent damage to vegetation and soils below. Drill two or three holes through the side of the pan to attach it to a backpack with cord for transport. You can also carry a fire blanket to place under the pan and protect the underlying ground.

Mound fires. Built on pedestals of sand, gravel or soil with a low organic content, mound fires take a little extra time to construct but leave no visible sign after they are dismantled. Collect soil in a stuff sack from a streambed or from beneath the roots of an overturned tree. Carry the soil to your fire site and construct a mound 6-8 inch-

MINIMIZE *Campfire Impacts*

es thick and 18-24 inches in diameter on top of a tarp or fire cloth. The cloth, which is used to help facilitate clean up, can be rolled up under the edge of the mound to prevent embers from singeing it. A thick-enough mound insulates the ground and the tarp from the heat of the fire. Old pieces of fire blanket also work well under the mound.

When your fire is out, scatter the cold ashes and return the soil to its source.

Dry wash or beach fires.

Gravel beaches and sandy washes can be an excellent place to have a low-impact fire because they are a naturally durable surface. However, in some areas regulations forbid camping *and* fires less than 200 feet from water, so be sure you know the local restrictions before you build a fire on a beach.

If beach fires are appropriate, excavate a shallow depression in the sand or gravel to serve as a fire pit. When you are done, make sure that you remove all the ash and scatter it before refilling the depression. If left in place, the ash will float up through the sand or gravel and the fire site will be obvious to others. Take care to pack out food scraps so they do not contaminate the water if you choose to cook on your fire.



mound fire

USE DEAD AND DOWNED

WOOD. Don't bring firewood from home – it can harbor tree killing insects and diseases. In the early 1980s, people collecting firewood damaged 95 percent of the trees at campsites in the Eagle Cap Wilderness in Oregon. To prevent such damage, don't snap branches off of trees, either living or dead. Use only sticks from the ground that can be broken by hand. Larger pieces of downed wood play an important and unique role in the nutrition of plants and animals, in water cycling and in soil productivity. They provide shelter for wildlife



such as lizards and, while decaying, germination sites for many plant species.

Firewood smaller than the diameter of your wrist breaks easily and burns completely

MINIMIZE *Campfire Impacts*

to ash, making clean up easier. Half-burned logs present a disposal problem—and often a disagreeable sight for the next campsite visitor. The use of hatchets, axes or saws isn't necessary or desirable.

In the backcountry, gather firewood en route to your camp so the area around your site retains a natural appearance.

MANAGE YOUR CAMPFIRE. No matter which fire-building technique you employ, you need to observe the following guidelines to ensure that your fire is safe and leaves as little impact as possible:

- Never leave a fire unattended.
- Don't try to burn foil-lined packets, leftover food or other garbage that would have to be removed later.
- Burn the wood completely to ash. Stop feeding the fire and give yourself an hour or more to add all the unburned stick ends.
- Saturate the ash with water. Make sure it's cool to the touch and remove any trash.
- Rub ashes down to a fine powder. You can wear gloves to do this or place the ashes in a plastic bag to crush them.
- Scatter all the ashes widely with a small shovel or pot lid.
- Restore the appearance of the fire site.

RESPECT *Wildlife*

Encounters with wildlife inspire tall tales and long moments of wonder. Unfortunately, wildlife around the world faces threats from loss and fragmentation of habitat, invasive species, pollution, over-exploitation, poaching and disease. Protected lands offer a last refuge from some, but not all, of these problems. Consequently, wild animals need recreationists who will promote their survival rather than add to the difficulties they already face. The more you understand about a species, the more considerate you can be of the animal's needs and temperament, especially at critical times and in critical places.

We know that animals respond to people in different ways. Some species adapt readily to humans in their domain, resume their normal behaviors and are said to be "habituated." Other animals flee from

humans, abandoning their young or critical habitat. Still others are attracted and endangered by human food and trash.

Because outdoor recreation happens year round, its impacts on wildlife can be extensive. Fish, birds and reptiles, as well as mammals, are affected by people using their habitats. We are responsible for coexisting peacefully with wildlife. Remember, we are visitors in their homes.

OBSERVE FROM A DISTANCE.

Always watch or photograph animals from a safe, non-threatening distance to avoid startling them or forcing them to flee. Plan ahead by bringing binoculars, spotting scopes and telephoto lenses.

If animals are on the move, stay out of their line of travel. Chasing animals into a better setting for a photo,

throwing objects, teasing, making noise or mimicking calls to provoke or get an animal's attention are things that cause undue stress to wildlife. Back up if animals react to your presence. To leave the area, move away from the animal even if you must detour from your intended direction of travel. Avoid quick movements and direct eye contact, which may be interpreted by wildlife as a sign of aggression. Travel quietly except in bear country where making noise will alert bears to your presence and prevent unexpected encounters.

Young animals removed or touched by well-meaning people may be abandoned by their parents. Notify a game warden if you find an animal that appears to be abandoned, sick or in trouble. Usually such animals should be left alone to prevent the spread of disease or to allow its parents to return.

Our behavior influences the relationship our children have with the natural world. Show respect and restraint by teaching children not to approach, touch or feed wild animals. For safety, always keep children in your immediate sight. Any wild animal can be dangerous and may bite, claw or carry disease.

AVOID SENSITIVE TIMES AND HABITATS. Consider the seasonal stresses that wildlife face. In some situations, avoid their habitats at sensitive times both for your safety and for the animals'. Animals are most disturbed by humans when they are pursuing and defending mates and territories, giving birth, guarding young or when food is scarce. In the Rockies,

bighorn sheep lamb in early summer in craggy areas found at mid-elevations in the mountains, while elk calve in sub-alpine meadows. Hungry grizzly bears frequent trout spawning runs in the spring, while moose hang out in the willows along streambeds at low elevations during the winter. Knowing these kinds of behaviors can help you plan your route to prevent stressful encounters with wildlife.



bighorn sheep

NEVER FEED ANIMALS. Headlines are made when wildlife is attracted to humans and their food. Bears get the most attention for tearing into tents, coolers and cars in search of a meal, but in reality, rodents and birds are probably going to be the wildlife you have the most interactions with while camping. These animals pose little threat to human safety, but their presence can be a nuisance, they can be vectors for disease, and their reliance on human food is a detriment to their own well-being.

Animals are adept opportunists. When offered the temptations of an untidy backcountry kitchen or a handout from a curious camper, they

can overcome their natural wariness of humans. Aggressive or destructive behavior may follow, and in conflicts with humans, animals ultimately lose. Human foods and products are harmful to wildlife because they prevent animals from foraging and eating a nutritious diet. Serious illness or death can occur when wildlife consumes food wrappers, vehicle antifreeze and other “inedibles.” Prospects of an easy meal lure wildlife into hazardous locales such as campsites and trailheads or roads and entry points, where they may be chased by dogs or hit by vehicles. It may also cause them to congregate in unnatural numbers, increasing stress and the spread of disease within their populations.

STORE FOOD AND TRASH

SECURELY. “Food” includes garbage, canned food, stock feed, pet food, fuel and scented or flavored toiletries. The salt in hiking boots, backpacks or clothing also attracts many small mammals.

To avoid attracting animals, keep a clean camp by picking up all garbage—even the tiniest food scraps—and carrying it out in a plastic bag. Be careful not to drop food on the trail as well. Place your food in an animal-proof container such as a plastic bowl or cooking pot with a tight lid. You can also hang food a few feet off the ground to deter camp robbers. To stop mice from scampering up and down the rope that suspends your food, poke a hole in a plastic lid and place it midway down the rope. This creates a barrier that most mice can’t negotiate.

Appropriate storage and transportation methods vary considerably from place to place, so consult local land managers about the best practices.

CONTROL YOUR PET. Wildlife and pets are not a good mix—even on a leash, dogs harass wildlife and disturb other visitors. Obedience champion or not, every dog is a potential carrier of diseases that infect wildlife, and in bear, mountain lion or wolf country, your pet may end up in a deadly battle with a predator. Even on a leash, a dog can frighten wildlife and distract them from performing tasks vital to their survival, such as finding food. The best option, therefore, is to leave your dog at home

If you must travel with your pet, check for restrictions in advance. Most national parks prohibit dogs on all trails. Ensure your animal is in good condition for the trip. Dogs should have current vaccinations to avoid being carriers of or contracting infectious diseases such as rabies and parvo-virus, especially in areas with wolf populations. Always use a collar and a short leash to control your dog. Remove pet feces from trails, picnic areas and campsites by disposing of it in a cat hole or in a trash can.

SPECIAL CONSIDERATIONS FOR BEAR COUNTRY.

When you step onto the trail in the Absaroka Range of northwestern Wyoming, things feel different. Maybe it’s the sign at the trailhead saying “Warning: You are entering Grizzly Bear Country” that heightens your awareness. Maybe it is a track the size

of a dinner plate with claw marks several inches long or a piece of cinnamon-colored fur caught on a tree branch that causes the hairs at the back of your neck to stand up. Whatever it is, suddenly your senses are on high alert. Every branch snap has meaning and you find yourself scanning distant ridges for signs of bears.

The chance to explore a wild place that is still inhabited by large predators is a special gift, but one that also comes with responsibility. Predators have suffered at the hands of humans. Their habitat has shrunk, their food sources have been depleted, and their numbers have dwindled since Europeans first arrived in North America. Grizzlies in particular have been driven into smaller and smaller pockets of uninhabited territory in the Lower 48. As we head into those pockets for our wild adventure, we need to recognize that we are entering one of the few remaining places a bear can call home. Our behavior in these places can have a dramatic impact on the future of these animals.

Bears are opportunistic omnivores who follow their nose to the next meal. This skill has kept them fed, but it has also resulted in “problem bears,” or bears that associate humans with food. Once this association has been made, a bear is generally doomed.

Most land managers give a bear two chances to reform, after that it is killed if it comes into someone’s camp looking for a handout. Bears are not cuddly, harmless pets. They have killed and mauled humans, sometimes without



black bear

an understandable cause. But often the hype surrounding a bear attack overshadows reality. According to bear expert Steven Herrero, there were fewer than 200 grizzly-related injuries to humans between 1900 and 1980, with only 14 deaths. Black bear attacks are more common, but of the 500 people attacked by black bears between 1960 and 1980, 90 percent of the injuries were considered minor. The number of bears killed in those same time periods is unknown, but hundreds, if not thousands of bears have lost their lives over the years because they couldn't get along with their human neighbors.

RESPECT Wildlife

Bears, both black and grizzly, are most dangerous when surprised or threatened. Therefore, the first step to peaceful coexistence is to avoid an unexpected encounter. Make noise when you are traveling in bear country, especially in spots where visibility is limited by vegetation. Travel in groups of three or more and stay close together. Watch for bear sign—tracks, the smell of carrion, clawed trees, etc. If you smell a carcass, go out of your way to avoid it. Be particularly wary of a female with cubs. You don't want to come between mama bear and her babies, or any bear and its dinner.

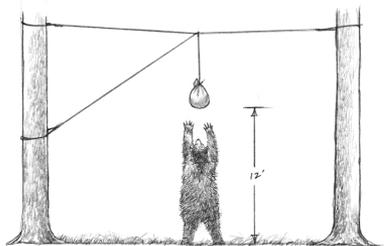
When you camp in bear country, separate your cooking area from the place you plan to sleep by at least 100 yards. If possible, cook close to rivers where the smell of your pan-fried fish will be carried away by winds that

*bear-resistant
canister*



move up and down valleys. Concentrate all odors in the cooking area. Do not bring food back to your tent. In some cases, you may even consider storing the clothes you cook in with food and other odorous items. Anything that smells should either be hung up overnight or stored in a bear-proof container. This includes toothpaste, soap and bug repellent.

FOOD STORAGE. Hang food from tree limbs 12 feet off the ground, 6 feet from the tree's trunk, and 6 feet below the supporting limb, or store it in specially designed bear-resistant canisters or on-site lockers. Canisters are available for rent and sale at sporting goods suppliers and some



land management agencies. Used properly, they ensure a good night's sleep for you and a natural diet for bears. Hanging food can be tricky, so practice hanging techniques before venturing into the backcountry and allow yourself plenty of time before dark to get set up. Check with land managers about specific food storage requirements for the area you are visiting. The various national forests and parks in the Rocky Mountains have different regulations. Methods appropriate for one area may not be allowed in another.

Around camp be extra meticulous with food scraps and wash water—or anything that smells. Avoid creating leftovers because cooked food has a stronger scent than dried pasta, uncooked oatmeal or freeze-dried beef stroganoff in a sealed-foil package. Food scraps should be double-bagged, stored with your food and packed out. Leave a clean campsite so

that you don't inadvertently endanger others who come behind you.

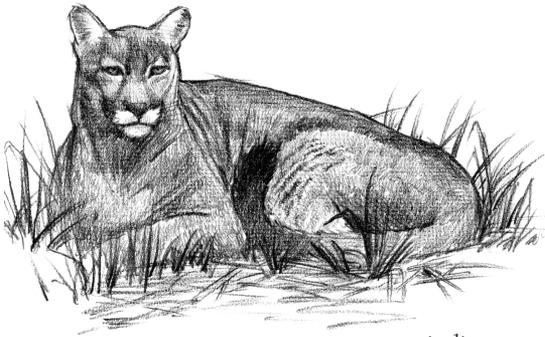
Disposing of wastewater in bear country is tricky. Once again, your main goal is to keep odors out of camp. If you are camped by a large volume river—at least 10-foot wide with substantial depth—you can pour strained wash water directly into the river to help disperse any odor. If you are not by a river, consider digging a small hole and sumping your wastewater. This practice concentrates odors in one safe location well away from your camp, however, animals may be attracted to the smell and dig up the hole in search of food. For this reason, sumping is not recommended in areas of high use. In these places, you should walk well away from camp and scatter your wastewater.

There is no recorded incident involving a bear attacking a menstruating woman, but because used feminine hygiene products can smell, they should also be double-bagged and stored with your garbage.

Make sure you are aware of the possibility of a bear encounter before you enter the woods. Call ahead and check with the land managers responsible for the place you plan to visit to find out if any bears inhabit the area. If so, ask if they have been causing problems or if there are any special regulations you should know about before leaving for your trip. You should also read up on what to do in case of an attack.

OTHER PREDATORS. There has been an increase in the number of encounters between humans and mountain lions, and between mountain lions and pets as humans encroach further and further into lion habitat. While the number of human fatalities resulting from these encounters is quite small, they do happen, so mountain lions deserve to be treated with respect. Mountain lions are stealthy and secretive. You rarely see one unless it allows itself to be seen, for this reason it's hard to know what keeps them away, and the guidelines for safe travel in lion country are less defined than they are for bear habitat.

In general, experienced backcountry travelers do not advocate making noise to deter mountain lions. Nor do people recommend using bear camping practices in lion country. Mountain lions do not seem to be attracted to human food, but they do occasionally see humans as prey. Solitary children, and adults or pets running, have been known to trigger attacks. Group travel, on the other hand, seems to be a deterrent. Experts also recommend that you avoid travel at dawn or dusk when lions are most active.



mountain lion

BE CONSIDERATE of Other Visitors

Some people visit the Rockies to hike, others to climb. Some are there to watch wildlife, while others are there to hunt. Many people look for solitude when they head into the mountains, but some go there for the camaraderie of an expedition with friends.

Outdoor recreation comes in many forms. Not only is it inevitable that you will encounter others when you travel in the mountains, it is also inevitable that you will encounter others who are looking for something very different from their experience than you are. No longer can we expect to enjoy the mountains alone, so it is time to practice some kind of outdoor etiquette in order to protect the quality of both our own experience and the experience of others.

RESPECT OTHER VISITORS. Even our most remote wildlands are under increasing recreational pressure. Because of this, you are likely to run in to people whether you travel off-trail in the Beartooth Mountains of Montana or follow a trail up one of Colorado's Fourteeners. You can choose how these encounters affect your experience. If you are rude or obnoxious, you are likely to encounter a similar response from others. If you are a good neighbor who helps their fellow campers when necessary, your attitude will be reciprocated.

Take care not to impose your needs and desires on those around you. Remember, your raucous campfire singing can destroy the tranquility of another's evening of star gazing. We must examine our personal behaviors and practice some restraint to avoid unpleasant encounters with others.

YIELD TO OTHERS. The simple things are often the most important. Offering a friendly greeting on the trail, wearing earth-toned clothing to blend in with the scenery, stepping aside to let someone pass, or waiting patiently for a turn, all make a difference. Set a good example for those you meet along the way to follow. Pass on to your children the value of wild places, as well the courtesies that we extend to others and wish to receive in return.

Be friendly, unobtrusive and self-sufficient. Take note of land boundaries, ask permission to cross private lands and obey special laws and



restrictions. Respect voluntary closures of public lands for Native American religious ceremonies.

Don't disturb livestock or equipment of ranchers, anglers, loggers, trappers, miners and others who derive their income from permitted use of public lands. Leave gates open or shut, as you find them.

Groups leading or riding livestock have the right-of-way on trails. Hikers and bicyclists should move to the

BE CONSIDERATE of Other Visitors

downhill side and talk quietly to the riders as they pass, since horses and other pack animals frighten easily.

When passing other hikers, yield to uphill traffic. Step off the trail so others don't have to detour around you. Minimize the number of people walking alongside the trail to minimize the amount of vegetation trampled and lessen the chance that the trail will become wider over time.

Stay in control while moving quickly whether you are jogging, skiing or riding a mountain bike. Before passing others, politely announce your presence and proceed with caution. Boaters, climbers, campers and other visitors to popular areas frequently find themselves waiting in line. Lend a hand, if appropriate, to help others.

KEEP A LOW PROFILE. Take rest breaks a short distance from the trail on a durable surface, such as rock or bare ground. An exception to this

guideline occurs when the vegetation around you is thick or easily crushed. In this case, pick a wide spot in the trail so others can pass by. If possible, camp out of sight and sound of trails and other visitors.

LET NATURE'S SOUNDS

PREVAIL. Avoid the use of bright lights, radios, electronic games and other intrusive devices. To some, technology is a necessity even in wildlands. To others, it is inappropriate. Avoid conflicts by making a conscious effort to allow everyone his or her own experience.

Some outdoor activities are necessarily loud. Firearms can be heard for miles, the barking from a dog team almost as far. As much as possible, keep the noise down, especially at night or in remote areas. Teach dogs to be quiet. Wear headphones to listen to music. Keep voices low. Use cellular phones discreetly. Most of all, tune in to the sounds of nature.



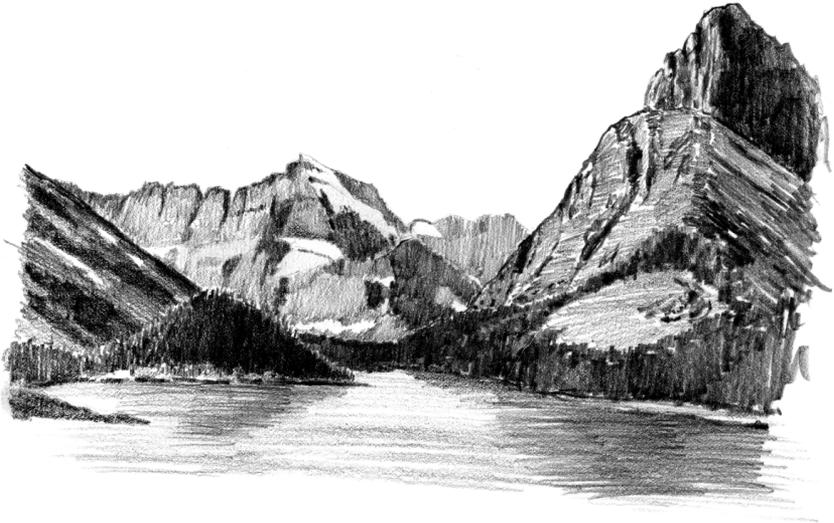
There is a delight in the hardy life of the open. There are no words that can tell the hidden spirit of the wilderness, that can reveal its mystery, its melancholy and its charm. The nation behaves well if it treats natural resources as assets, which it must turn over to the next generation increased and not impaired in value.

-Theodore Roosevelt

The idea that wildlands have some kind of almost magical power to renew our spirits and invigorate our lives was neither new nor particularly radical when Theodore Roosevelt wrote about it at the beginning of the 20th century, nor is the idea new or radical today. Men and women from Rachel Carson, Aldo Leopold and John Muir, to Terry Tempest Williams and Gary Snyder have been writing about this transformational power for

centuries. But that power depends on having intact wildlands. Roosevelt believed in using such places, but he also recognized that there were limits to what these places could withstand. More than 100 years ago, he was talking about sustainable use to conserve public lands for future generations. Today we are still talking that way.

While the philosophy Roosevelt espoused remains sound, the practices that are considered sustainable have changed as our population has grown and we have gained an understanding of ecosystem health. When Roosevelt traveled through the western mountains, good sustainable camping techniques included blazing bonfires and mattresses made from freshly cut pine boughs. Today there are just too many people traveling in the Rockies to allow us to follow these same practices with good conscience even where they are allowed.



WILDLAND Ethics

To protect both the natural environment and the “wilderness” experience that seems to be so important for humankind, today’s wildland users have to recognize the importance of self-restraint. In many parts of the Rockies, there are no laws to forbid us from building a big fire. Nor are there always regulations that say we can’t cut pine boughs. But when we choose to avoid these things of our own volition, we reduce the need for laws and regulations to protect wildlands from recreationists. By putting the resource before our own personal needs and whims, we take part in a timeless reverence of nature and create the possi-

bility of its rediscovery by those who follow our footsteps.

We owe a debt of gratitude to Roosevelt and countless other dedicated conservationists for protecting places like the Rocky Mountains. These mountains, with their jagged peaks, permanent snowfields and abundant wildlife, continue to be wild and beautiful in spite of years of recreational use. Still, every day humans have an impact—both large and small—on the Rocky Mountain landscape. The conscious choice to Leave No Trace is a small but significant way that we can reduce that impact and act on behalf of beauty, authenticity and wildness.

A FEW TERMS Defined

established campsite: Campsite made obvious by devegetated ground or “barren core.”

habituated: Animals that are comfortable in the presence of humans, have become accustomed to developed areas, campsites, trails or roadsides, but have retained their natural behaviors.

inorganic soil: soil that consists primarily of minerals with little or no plant and animal remains.

invasive species: Plant or animal that aggressively out-competes native species.

krummholz: Stunted forest characteristic of timberline.

pristine: A place where signs of human impacts are absent or difficult to detect.

social paths: Paths created by traveling on non-durable surfaces between campsites and other sites of interest.

MANY Thanks

Lloyd Athearn, The American
Alpine Club

Susan Benepe, National Outdoor
Leadership School, Lander, WY

Keith Derosiers, Colorado Fourteeners
Initiative, Colorado

Greater Yellowstone Coalition

Vicki Gullang, U.S. Forest Service,
Shoshone National Forest, Lander, WY

Frank Jenks, Bureau of Land Manage-
ment, Boise, ID

Al Koss, U.S. Forest Service, Flathead
National Forest, MT

Scott Reid, Leave No Trace Inc.,
Boulder, CO

Peg Sorenson, Bureau of Land
Management, Albuquerque, NM

Ralph Swain, U.S. Forest Service,
R2 Regional Office, Golden, CO

Doug Wachob, Teton Science School,
Kelly, WY

Hank Williams, U.S. Forest Service,
Bridger-Teton National Forest, WY



SELECTED REFERENCES:

Bureau of Land Management. 1996. Teaching Leave No Trace: Activities to teach responsible backcountry skills. Salt Lake City, UT, USDI, Bureau of Land Management, Utah State Office.

Cilimburg, A., Monz, C. and Kehoe, S. 2000. Wildland Recreation and Human Waste: A review of problems, practices and concerns. Environmental Management 25(6): 587-598.

Cole, D.N. 1989. Low-impact recreational practices for wilderness and backcountry. General Technical Report INT-265. Ogden, UT, USDA, Forest Service, Intermountain Forest and Range Experiment Station.

Douchette, J.E. and Cole, D.N. 1993. Wilderness visitor education: Information about alternative techniques. General Technical Report INT-295. Ogden, UT: USDA Forest Service, Intermountain Research Station. 37p.

Hammit, W.E. and Cole, D.N. 1998. Wildland Recreation: Ecology and Management, 2nd Edition. New York, NY: John Wiley.

Hampton, B. and Cole, D.N. 1995. Soft Paths, 2nd Edition. Harrisburg, PA, Stackpole Books.

Leung, Y.F. and Marion, J.L. 2000. Recreation impacts and management in wilderness: A state-of-knowledge review. In Cole, D.N., McCool, S.F., Borrie, W.T., O'Loughlin, J., (comps). Proceedings: Wilderness Science in a Time of Change. Vol. 5, Proceedings RMRS-P-15-Vol-5. Ogden, UT, USDA Forest Service, Rocky Mountain Research Station.

ON THE WEB:

Marion, J.L. and Reid, S., 2001. Development of the U.S. Leave No Trace program: An historical perspective. www.LNT.org/history.html

Tread Lightly, Inc. 1-800-966-9900, www.treadlightly.org
www.wilderness.net

*Written by Molly Absolon and Tami Pokorny
Illustrations by Jaque Devaud and Scott Knauer
Cover Photo: Carl Yarbrough Photography*

Volumes available in the Leave No Trace Skills and Ethics Series

Alaska Wildlands
Caving
Deserts and Canyons
Fishing
Horse Use
Lakes Region
Mountain Biking
North America
Northeast Mountains
Pacific Northwest
Rock Climbing
Rocky Mountains
Sea Kayaking
Sierra Nevada
Southeast
Western River Corridors



Center for Outdoor Ethics

Leave No Trace Center for Outdoor Ethics

PO Box 997

Boulder, Colorado 80306

<http://www.LNT.org>

©Leave No Trace Center for Outdoor Ethics/National Outdoor Leadership School

Leave No Trace Skills & Ethics Series

Published 4/01

**For more Leave No Trace information or to order materials,
call 1-800-332-4100 or visit www.LNT.org.**

Suggested Retail \$2.95



recycled paper