

PRINCIPLES

AND

PRACTICES

OF

“LEAVE NO TRACE”

by

BACK COUNTRY HORSEMEN of WASHINGTON

INTRODUCTION

Leave No Trace is an educational system and training guide developed to define appropriate techniques for minimum impact camping with horses. However, in the confines of this training guide it is not possible to list and fully explain every detail of each technique. The first chapter of this guide is intended to bolster the practical field section of the training course.

The key to minimizing impact is to develop the necessary judgment and experience base to effectively make the most appropriate decision for a given situation. As this first chapter should make clear, all backcountry visitors have choices when practicing LNT techniques.

Because of local, regional and environmental conditions, all low-impact camping practices are subject to variations. It is impractical to detail every nuance of the principles listed here, and one could argue there should be more principles. This guide will provide the essence of low-impact techniques. As a camper practicing Leave No Trace, you will have to decide for each situation what the best methods will be.

The development and use of good judgment is the most powerful technique available to stock users. This judgment is gained from personal experience and knowledge of the local ecosystem. It is grounded in a strong ethical appreciation for wilderness and Leave No Trace.

1. PLAN AHEAD AND PREPARE BEFORE YOU GO

Unnecessary impact in backcountry areas is often the result of inadequate planning and preparation on the part of visitors. Examples: If horse packers do not take adequate grazing restraints, they may be forced to tie horses to live trees for long periods of time. The potential for trampling ground and girdling live trees is high. If backcountry visitors do not have the proper clothing to stay warm and dry in unexpected weather, they may be forced to build large, highly impacting fires in areas where they should not be built. Impacts resulting from being unprepared may seem minor, but they are not uncommon and over time result in long lasting damage.

Trip preparation should address the following factors:

Trip expectations

Knowledge of the area

Time of the year/expected weather

Type of equipment/clothing needed

Meal planning and food preparation

Temperament and experience of horses/number of horses needed

TRIP EXPECTATIONS

Determine the goals and expectations of your trip. A weekend fishing trip has different requirements than a two-week ride across the Continental Divide. Consider your group size, route length, the age and abilities of other group members and their expectations. Are you seeking solitude, good fishing or long days in the saddle? Depending on your expectations, you should be able to choose where and when to travel to best meet our goals.

KNOWLEDGE OF THE AREA

Many backcountry visitors do not live near the areas they wish to visit and may not be aware of specific conditions or requirements for which they should be prepared. By planning ahead, inquiries can be made to local land management personnel for information on such considerations as access, weather conditions, snow pack, available feed, popular or high-use area and wildlife (such as the presence of black or grizzly bears). In popular areas visited by thousands of people each year, there may be campsites closures or fire restrictions of which you should be aware. You may not be able to camp where you had planned. Some areas are closed to grazing and most areas restrict the number of horses and people in a single party.

Get out your maps and go over the route and possible side trips. Consider the river crossing, alternate campsites, mountain passes and fishing opportunities. Familiarize yourself with other trails and road heads that could be used in case of an emergency.

In popular areas you can assume you will be able to use existing, highly impacted campsites. Conversely, if you know what areas are pristine or seldom visited you will know that camping there will require extra time and commitment in addition to a higher level of skill. With this information you should be better prepared for your trip, have a more enjoyable experience, and be better prepared to minimize your impacts.

TIME OF YEAR AND EXPECTED WEATHER

The type of environment you plan to visit may not be able to withstand the impact of your stay during certain times of the year. For example, in the northern Rocky Mountains summer comes much later than in the rest of the country. On a trip in early June, you will most likely encounter snowdrifts on trails and high run-off. This means that trails will be wet and muddy and relatively fragile. River crossings may be dangerous or impossible. Trips planned for late July in the same area will for the most part encounter dry trails that can withstand a high level of traffic. In most areas there will be certain times of the year when the area will be more susceptible to impacts than at other times. By planning backcountry visits to avoid these fragile periods, many camping and horse-related impacts can be reduced or eliminated.

Time of the year may also determine your impact on wildlife. Acquaint yourself with the animals you may encounter and know if they will be migrating, breeding or calving.

Time of year definitely influences the weather, but unexpected conditions can always occur. Plan for the unexpected and be prepared. Encountering weather conditions for which you are unprepared can jeopardize your safety and the safety of other in your party. This may force you to make decisions and implement actions that will compromise your efforts to minimize impacts.

TYPE OF EQUIPMENT AND CLOTHING NEEDS

Select equipment and horse gear that will allow the flexibility to make choices that will minimize your impact. Cook stoves allow you to camp in areas where firewood is not abundant. Using lightweight, compact stoves, tents and sleeping bags may enable you to cut down on the number of horses required to support your trip. Fewer horses mean less impact to the trails, meadows and other visitors. Fewer horses allow you greater choice of campsites because less feed is required.

Camping equipment and horse gear must be adequate for the type and length of trip you have planned. Sored horses, rolled loads, wet matches, leaky tents, and blisters can ruin a trip. They can cause people to use poor judgment and make decisions that can ultimately add to their impact. Carefully go through the equipment list then carefully examine the gear itself. It must all be in good repair.

Many amenities can simply be left at home. Taking only what you need will make setting up and breaking camp faster. A simple camp makes it easier to Leave No Trace.

Having the proper clothing to stay warm and dry will enhance your ability to enjoy your backcountry visit and may eliminate the need to react imprudently to adverse weather situations as discussed earlier.

MEAL PLANNING AND FOOD PREPARATION

Plan your meals carefully. This will reduce waste from leftovers and help minimize extra food that has to be packed out at the end of the trip. Food can make up a large portion of the total weight the horses pack in. Extra time spent planning not only meals but also the types of food (dry goods verses canned) is time well spent. Reducing total food weight is time well spent.

By repacking food items into reusable containers and plastic bags you can greatly reduce the weight and bulk of your food and avoid bringing unnecessary packaging into the backcountry.

TEMPERAMENT, NUMBER AND EXPERIENCE OF HORSES

Ideally, horses used in the backcountry should be fit, calm, reliable and experienced. Excitable, inexperienced horses tend to cause more problems on the trail, in camp and out grazing. These problems can increase your impact on the area and on other visitors as well. A calm, experienced horse won't be so upset by hikers, wildlife or other domestic animals on the trail. They tend to not paw the ground as much or pull back when tied to a highline. Know your stock.

Take time to accustom your animals to the types of restraints you will use. Make sure they will eat the type of supplement feed you will take. The trailhead is not the ideal place for a horse to learn about breechings, clinking and clanging pannier loads or wind-blown mantis. Educate your horses at home where you can supervise them and keep them from hurting themselves and others.

Fewer horses mean less impact, fewer chores and a greater choice of campsites. If you can cut back on weight you may be able to cut back on horses. Modern equipment is available that is lightweight but still allows you to travel in comfort. Review your food and equipment lists, even your list of trip members to be sure you are carrying only what you need.

Consider how you will use these horses. If they will be used only for transportation into and out of the mountains, consider having someone drop you off and pick you up. If you will be moving camp everyday, keep camp simple. There will be less impact, less gear to pack and chores will be done faster.

Some groups reduce the number of horses they require by hiking with packhorses. Evening rides to a favorite fishing hole are still possible if you pack in with loads slung on riding saddles. In order to reduce stock numbers, some hunters ride into the mountains expecting to hike out (if they are successful) with their riding horses packing the slung animal quarters.

MINIMIZE HORSE IMPACT

Once in the backcountry many techniques can be used to help prevent or at least minimize the damage horses cause in the backcountry. Each of these techniques results in some impact, but the goal is to use the least impacting methods possible. Due to differences in geography, different techniques will be appropriate for use in different areas.

Key areas you should consider to minimize horse impacts in the backcountry include:

Confining horses in camp

Grazing restraints

Watering horses

Use of supplemental feed

Confining Horses in Camp

Horse camps are often easy to pick out mainly because of damage that has been done to trees on the site. Overgrazing, trampling, soil compaction and general disturbance to the ground surface are other adverse impacts that often occur. Horses should only be kept in camp during saddling and unsaddling, packing and unpacking. At other times they should be kept outside the camp area. The methods listed below are presented from lesser to greater degree of impact.

Saddle Hobbles: A lightweight but sturdy pair of leather or nylon hobbles can be carried for short term restraint and especially while the horse is under your immediate supervision. They are great for short stops while traveling or as you first make camp and begin the unloading procedure. A hobbled horse is free to graze a short distance away while you attend to other animals and tasks.

Highlines: In many areas this is the preferred low-impact method for restraining horses in camp. It prevents the horses from trampling the root systems around trees. To construct a highline, find an area of dry, hardened ground where the least amount of ground cover will be disturbed. Stretch a rope horse head high between two trees of at least 8 inches in diameter. Use a system of knots to make a pulley system to tighten the rope and a truckers knot to keep it tight. To insure the highline does not girdle the trees, protect the bark with tree saver straps. When horses are saddled up and on the high line, be sure the rope is higher than the saddle horns.

Tie lead ropes at intervals along the highline away from the tree trunks and use a butterfly knot or a knot eliminator to keep the lead ropes from sliding. There should be no long loops in the lead ropes that a horse could step over or wrap around its neck. Horses properly tied to a highline have freedom of movement yet are in little danger of getting hurt.

Though the highline moves horses further away from the root systems of trees, substantial damage can be done to ground cover and surface soils. You may be able to lessen the impact by pulling back the duff and pine needles and replacing them when you leave. Scattering the manure and repairing the highline area takes a little time but it can be done.

Tying to trees: Horses should be tied to trees only for short periods of time. If you do have to tie up select a sturdy tree at least 8 inches in diameter. A tree this size can resist some trampling of its root system and damage to its bark. Wrap the lead rope twice around the trunk before tying your knot. This prevents most of the damage caused by the rope. Tying to large live trees is safest. The roots of dead trees may be severely rotted or deteriorated. If a horse pulls back on a dead tree the injury, havoc and impact that may ensue would surely tear up more than the campsite. If stock must be tied for long periods of time, tie them away from camp in heavy timber.

Temporary corrals: Temporary corrals should not be constructed from logs whether they are from dead or living trees. These wood corrals are often left standing and thus are not “temporary” at all. Instead, a two-rope corral can be set up to contain the horses. This type is easy to put up and easy to move. Pad all trees you tie rope around to protect bark from damage. When constructing a temporary rope corral, use an area with plenty of hard rocky ground. The corral should be as large as possible to prevent over trampling of the area.

Portable electric fences are a popular and effective way to create a temporary corral. They are lightweight, versatile and easy to set up or move. No trees are required so they are ideal for use in areas without trees. You will need to acquaint your horses with electric corrals before your trip.

Which to use:

There are many factors to consider when deciding whether to use a highline or corral. Some horses paw more than others. They might be good candidates for a corral. A bully of a horse might do well tied to a highline.

These methods of confining horses should be used with good judgment and a bit of horse psychology. Wet or boggy ground is too fragile to withstand the repeated trampling associated with tied or corralled horses. In some areas of California regulations prohibit tying or grazing horses in any permanently wet meadow. In other areas such as the Northern Rockies all meadows seem wet in the spring and it may seem difficult to totally avoid wet and boggy places. Learn to identify the grasses that grow on soon-to-be-dry land and keep your horses grazing there. Avoid areas that will remain wet through the summer.

Someone should be designated to tend the horses regularly to ensure that all are safe and that no damage is being done to the area. If a confinement area catches enough breezes to discourage insects, there will be less pawing and stomping. Insect repellent can also help prevent this kind of damage. Well-fed, well-watered horses will be more content. Nervous or bored horses that paw while tied should also be hobbled.

Always keep an eye out for problems. If a rope is long enough for a horse to nibble at the ground, it is long enough for him to step over. When unsaddling horses, adjust the height of the highline so they won't get their saddle horns hung up on it. A horse in trouble can do irreparable damage both to itself and the environment.

GRAZING RESTRAINTS:

Free roaming horses grazing on good grass cause little long-term impact because the impact is dispersed. However, limiting travel during grazing is a major concern for the horse user and is a major cause of impact in horse camps. More restrictive methods of restraining horses will cause more impact than those that allow the horses more freedom of movement. These methods below are presented from lesser to greater degrees of impact.

No matter what restraining method you use, your horse will create less impact if it is comfortable. Horses who are well watered and have been able to roll and scratch themselves on a patch of bare ground after a long day on the trail will be more content and therefore less apt to paw or dig at camp. You should make sure your horse is well cared for before turning it out to graze.

Loose grazing: Horses confined only by their own herd bound instincts are the least impactful. Every group of horses has a few members that lack the courage or the ambition to leave the rest of the bunch. If you can identify these individuals you can restrain them simply by confining their “buddies” or leaders.

Hobbles: This method of restraint causes very little environmental impact. The idea behind hobbling horses is to give them freedom to graze yet restrict their travel to the general area near camp. Since many horses learn to move freely with hobbles, keep two wrangle horses close to camp using a highline, electric fence or by picketing. Place a bell on any “ring leader” or “loner” to help keep track of your hobbled horses.

Electric Fence: This is a popular method for restraining animals because the fence is easy to set up and take down and move around. Electric fences must be moved often to ensure that the area inside them is not overgrazed. Horses cannot have access to bodies of water while in side an electric fence. This can lead to the trampling and collapse of stream or lake embankments. Electric fences should be taken down at night and horses put on a highline. Depending on the amount of grass inside the fence, the fence might have to be moved every few hours.

Pickets: Picketing horses can be very hard on soil and vegetation and is not allowed by land managers in some areas. Know local regulations and use good judgment when evaluating whether grazing areas near your camp can withstand picketing. If you must picket your horses, remember that picketing horses require good feed. Choose the picket site carefully and make sure it is low angle and free of obstacles or trees to get tangled around or dips or ditches to get stuck in if your horse wants to roll. Pack in your picket pins. Do not cut trees to make them. Remove those left by others. Move the pins frequently to prevent overgrazing and trampling. This may mean moving the pins every few hours. It is past time to move the picket when you can see a circle beginning to show. When possible, rotate hobbled horses with those on a picket or in an electric fence. This helps ensure all stock will get enough feed and water.

Picketing two wrangle horses is usually better than picketing only one. A single horse can get anxious if left alone and may paw the ground or injure itself. It will seldom relax and graze. Picketing a bell mare or ringleader may help keep hobbled horses in the general vicinity. Most horses require a little time to learn how to be picketed. It is best to teach them at home under close supervision.

Watering Horses:

Wet marshy areas, stream banks, ponds and lake edges are very susceptible to trampling, bank erosion and pollution. Water your horse at an established ford or low rocky spot in the bank. This will help prevent collapse and erosion of the embankment. It will also encourage the hobbled horses to water there as well.

Many watering places are small or contain sensitive vegetation and fragile soils. Consider watering horses away from the source to prevent damage to these sensitive riparian areas. A water bucket is handy in such cases as well as in the kitchen. When you go to water your horses, besides checking on their safety and available feed, also assess any trampling damage.

Use of Supplemental Feed:

In some areas forage is limited. In others grazing may be restricted by regulation. Meadows should always be left in the best possible conditions so they can recover from grazing pressures and be in the best possible condition for those who follow. Fifty percent is often used as a maximum utilization guideline.

The use of supplemental feed can reduce grazing time and amount of local feed consumed. A small ration of supplemental feed can also be used as bribe to remind horses that camp is home.

Processed and pelletized feed is a good source of nutrition. It is more concentrated than hay and thus will help keep weight and bulk to a minimum. The seeds of many weeds and non-native species can be found in unprocessed feed. These seeds grow and then compete with native plants. To lessen this problem, there may be regulations prohibiting packing in uncertified hay or unprocessed grain. Feeding certified hay and feed one day prior to your trip will help prevent the unwitting transport of weeds in horse manure and allows you to check that your horse will eat the feed that you take.

As an alternative to placing feed on the ground, consider putting it in a simple nosebag or on a manti. A full ration can be eaten without waste and less pawing, trampling and close cropping of the grass should occur. A feedbag can also be hung from the highline.

Some of your favorite camping areas may be exposed to heavy grazing pressure during the summer and hunting seasons. Overgrazing can lead to the degradation of an area. Researchers measure the deterioration of meadow communities primarily by the changes in the types and quantities of plants growing there. When you move camp, the meadows must be left in good condition so they can recover from the various grazing pressures they have sustained. They must also be given time to recover. Evaluate the available forage in each camp. Techniques that worked best for one camp may be inappropriate for the next. Be prepared to be flexible with your techniques. Be committed to the continuation and perpetuity of good grazing conditions.

2. TRAVEL AND CAMP ON DURABLE SURFACES

Concentrating use on durable surfaces is a simple and effective method of reducing the impact of a backcountry visit. Main travel corridors and popular destinations typically have well-established trails and campsites. These places are best able to sustain the physical impacts of stock use.

Camping in a minimum-impact manner requires making choices and using judgment to select appropriate practices that will cause the least environmental damage. The key word is **minimum**. Traveling through the backcountry with horses will cause some degree of impact no matter how much care you take. The goal is to make decisions and choose practices that cause the smallest amount of damage and/or have only short-term effects.

The main points of concentrating use on durable surfaces are:

STAY ON TRAILS

PULL OFF FOR REST BREAKS

SCREEN SITE FROM OTHER CAMPS

CHOOSE AN ESTABLISHED CAMPSITE

CAMP AWAY FROM TRAILS AND WATER

SET UP A SIMPLE ORGANIZED CAMP

LEAVE A CLEAN CAMP

TEACHNIQUES FOR DESTINATION CAMPS

STAY ON TRAILS:

To minimize the effects of erosion, stay on trails and ride single file down the middle of the trail. Traveling outside the tread to ride abreast or to avoid rocks or mud breaks down the trail. It can also lead to unnecessary multiple trails. This type of impact is common in small clearings, meadows and wet boggy areas. Muddy stretches and most snow banks should be crossed rather than skirted to avoid creating additional paths.

Horses in a string cannot be perfectly managed. The attentiveness of the horse packer the length of the string and the traveling pace are all factors affecting how much or how little impact a pack string will make. In rough or fragile terrain several small pack strings distributed among the riders will cause less damage than one or two long ones. Keep your horses on the trail. If extremely difficult terrain must be negotiated, loose herding may be best but for short stretches only. Animals that are free to place their feet around obstacles are less likely to cause damage to the ground, to themselves or to their handlers.

Do not shortcut trails or switchbacks. This not only adds unnecessary impact but it increases the likelihood of erosion. The time saved is minimal especially when compared to the time it will take to heal the damage you have caused.

PULL OFF FOR REST BREAKS

When taking rest breaks choose a site well off the trail so that others are not forced to go around you, thus widening the trails. When possible, pull off on a durable surface such as dry grass or sand. For short breaks you may be able to hand hold your horse; however, if you need to tie up, choose a live tree at least 8 inches in diameter and wrap the lead rope around the trunk twice before you tie the knot. Tend the horses often. Nervous horses that trample or paw the ground while tied can be hobbled to prevent damage to the tree roots. Manure piles should be kicked apart and scattered, and pawed ground should be replaced.

CHOOSE AN ESTABLISHED CAMPSITE

Selecting an appropriate campsite is perhaps the most important aspect of low impact backcountry use. A decision about where to camp should be based on information about the level and type of use in the area, the fragility of the vegetation and soil, the likelihood of wildlife disturbance, and assessment of previous impacts, and your parties potential to cause or avoid impact.

In popular camping areas the minimum-impact choice is to use existing legal campsites. This minimizes the proliferation of unnecessary campsites within an area.

Existing sites that are already “hardened” can tolerate a relatively large amount of use. Choose a site that is large enough to accommodate your entire party and avoid enlarging the area of disturbance or developing new satellite use areas while you are camped there.

Pick a site that has a very low slope: level sites have problems with ponding and sites on steeper slopes are highly susceptible to erosion once vegetation and surface litter are gone. Never scrape away or clean site of organic material. Such litter helps to cushion trampling forces, limits compatibility of soils, attracts and feeds earthworms that loosen the soil, releases plant nutrients and reduces the erosive forces of rainfall and water runoff.

In many popular areas there are existing campsites that are inappropriate. Ideally these sites should never have been used in the first place, but they exist anyway. Examples include sites that are too close to lakeshores, streams, trails or other campsites.

What if appropriate sites are either occupied or do not exist? You will need to balance a number of factors. What is the immediacy of your needs? Do you have to stay here or can you move on? What is the potential impact if you choose to stay in a compromised campsite? Is the campsite compliant with regulations for the area? Would it be a lot easier to continue riding until something better came along?

It is important to be flexible when choosing a campsite. Plan your day’s ride so you arrive at your destination well before dark so you will have enough time to choose a proper site even if it is necessary to move to another area. Unexpected weather, tiredness and lateness of the day are poor reasons to cause avoidable impacts.

CAMP AWAY FROM TRAILS AND WATER

Choosing a campsite away from water is important for a variety of reasons. A campsite on stream banks or lakeshores can create visual impacts that detract from the sense of solitude others are seeking. Also, there is a greater possibility of contaminating the water if you are camped nearby. If you choose a campsite far away from water sources, any waste you generate will be less likely to get into the water. In many areas regulations dictate the distance camps should be from water and trails. These distances can range from 25 to 200 feet or more. Know the legal restrictions of the area and know why you should camp away from trails and water.

Recreational impacts on wildlife are poorly understood. No one is sure what impacts campers have on animal populations, but by camping away from water sources we lessen the chances of interfering with wildlife’s access to water.

SET UP A SIMPLE, ORGANIZED CAMP

When setting up a camp, place tents on those areas already hardened by use. Do not pull out vegetation or break off tree limbs to make the spot more comfortable. Select tent sites that are well drained. Do not ditch around tents. If you need to remove rocks or bits of wood, put them back where you found them when you break camp.

The kitchen is the place where most people will congregate. This area tends to receive the most impact so try to locate the kitchen in the most resistant location available. Rock outcrops are popular for they will easily withstand the heavy use and often afford great views as well. Another option is to use scrim, an open-weaved cloth under the kitchen area, which can lessen the impact in such high use areas. Used as a ground cloth it lets air and moisture through allowing vegetation to breathe and grow, but buffers the grinding action caused by boot heels. It also allows you to collect even the smallest bits of trash or garbage. Simply lift the cloth and dump any collected materials into a trash bag when you are ready to break camp.

In any campsite, especially with large groups, traffic between the kitchen, tents, horse gear and meadow is bound to create trails. Stay on any well established paths even if it means going a bit out of your way. It only takes a few people traveling a new route through the vegetation to create a noticeable trail. The objective is to confine impact to places that already show use and avoid enlarging the area of disturbance.

Spend some time thinking about how you will set up your camp. Several highlines can be used during saddling and unsaddling. Some groups have found the woven plastic mesh cloth mentioned above to be an excellent method for minimizing impacts from horse hooves. Place the cloth under the highline or other area where horses are closely confined and remove it when you move your horses. Organize your camp to be efficient and safe. A simple camp is easy to set up and quick to break down. There is no need to pound nails, dig trenches or cut trees in order to have a comfortable, organized camp. Use panniers lash rope and mantis to organize and protect all of your gear. Less time spent on camp chores affords more time for riding, fishing and enjoying your special place. Keep your camp simple.

LEAVE A CLEAN CAMP

To ensure that other visitors arriving at popular destinations use existing campsites, it is important to leave the site clean and attractive. An existing site that has litter scattered about or foot scraps lying in the fire ring is not going to be very appealing.

As you break camp, make an effort to leave it in a more natural condition than you found it. If you cleared an area of surface rocks, twigs, or pinecones, replace these items before you leave. Dismantle or remove inappropriate user-built facilities such as multiple fire rings, nails in trees, trenches and constructed seats or tables. Properly located and legal facilities such as a single fire ring should be left. Dismantling them will cause additional impact because they will be rebuilt with different rocks, thus impacting a different area.

Kick apart and scatter piles of manure. If manure is in the center area of camp, carry it well away for dispersal. This will hasten its decomposition and lessen the aesthetic impact on the area for other users. Pawed places must be filled in not only for visual impact, but to prevent deeper holes and further damage. Finally, broadcast a covering of needles, leaves and twigs over your campsite.

With little effort you can leave a clean inviting camp. Practicing good Leave No Trace techniques will help set the right example for others. It will also improve the odds that you will find the camp enticing and pleasing on your next trip into the backcountry.

TECHNIQUES FOR DESTINATION CAMPS

Some parties ride into the backcountry with only one destination in mind. You can reduce impact in destination camps by sending out extra horses for the length of your base camp stay with a friend or member of your party.

When a group spends multiple nights in one campsite, much care is needed to protect the area from overuse. More forage is required for the horses. Picket pins and electric fences have to be moved again and again to prevent overgrazing and trampling. Only with considerable determination and commitment can you keep the area of disturbance from growing larger.

Some areas cannot withstand this type of use. Others have been set aside as sacrifice zones in hopes that surrounding campsites will not be so heavily impacted and damaged. Make it a group effort to leave the camp in excellent condition so it can sustain decades of such use.

IN REMOTE AREAS, SPREAD USE

Most areas that have good feed for horses also have established trails and campsites. If you are traveling with a small number of horses, you may actually find an area that has adequate feed and no established campsite. Pristine areas are quite fragile and it is easy to create long lasting damage. Visitors traveling through pristine backcountry should be knowledgeable in and committed to the ideals and techniques of Leave No Trace.

Key points of traveling and camping in remote area include:

Spread out while traveling

Avoid fragile areas

Select a resilient campsite

Move camp after one night's use

Naturalize campsite when leaving

SPREAD OUT WHILE TRAVELING

In most backcountry areas, horse groups should stay on established trails. A horse party heading off cross-country in mountains or timber will often run into many obstacles. The potential for creating new and unnecessary trails is great. Generally you will find that there are good established trails to the areas you wish to visit.

In land that is open, cross-country travel between campsites may be possible. The key to preventing the development of trails in a remote area is to spread out and disperse your impacts. By limiting the number of times hoof prints fall in the same place, the chances of doing long-term damage to the vegetation are greatly reduced. Most species of grasses are quite tolerant of trampling due to their elaborate root structures and the flexibility of the stems. If you are presented with a choice of riding on grass or rigid, woody-stemmed plants, grass will probably be the more durable surface.

Many high desert areas have gravelly soils that are quite durable. Other good places to ride are dry washes and sandy gullies that are already void of vegetation. Many of these open areas also have old roads and game trails that can be utilized.

Some deserts have crypto biotic soils that are extremely fragile. These soils are made up of a community of algae, mosses and lichens and look like miniature black, mossy castles about only half to two inches high. These tiny primitive plants hold the loose soil together to help keep moisture in the soil and prevent wind erosion. In areas of crypto biotic soil, it is essential to avoid making new trails. The soil is easily disturbed and it takes a long time for the community of plants to regenerate.

Research is currently being conducted to determine which vegetative species are most tolerant but much is still unknown about the effects of trampling caused by traveling and camping in pristine areas.

AVOID FRAGILE AREAS

When traveling off-trail, avoid any fragile areas you may encounter. Wet, boggy ground will not withstand your passing without considerable damage. Stay on durable dry ground and ride around such fragile areas. If you encounter steep slopes, look for alternate routes. If you must travel on them, look for durable surfaces. Spread out and avoid going straight downhill or uphill by traveling in a switchback fashion, each rider taking their own route.

Finally, when traveling cross-country, allow other travelers the same thrill and challenge of route finding. Do not mark your route by building Cairns, using plastic flagging, or blazing trees.

SELECT A RESILIENT CAMPSITE

Again, horse groups should rarely have to choose a pristine area for a campsite. This should be done only if you are prepared and committed to use extra care and Leave No Trace of your stay.

When choosing a pristine campsite, in addition to normal safety considerations look for a durable surface such as exposed bedrock, dry grassy areas, desert pavement or a dry wash (if there is no chance of a flash flood). Forest duff is acceptable if it is possible to avoid crushing plants and seedlings. The area should be resilient and capable of recovering rapidly from the effects of one night of low-impact use.

Camp layout is an additional consideration. The kitchen area receives the most traffic and the area where you stack the horse gear is probably the next most heavily trampled. The tent site may receive the least amount of traffic. Set up camp with these three areas separated from one another in order to spread out the impacts. In this way no single place receives all the trampling. If there is a large durable area, it may be less important to use three distinct locations.

Horse impacts should be spread out as well. Using hobbles and electric fences can keep trampling to a minimum. The horses should not be tied to trees for any length of time.

MOVE CAMP AFTER ONE NIGHT'S USE

Avoid camping in a pristine site for more than one night. By moving on, you avoid repeated trampling between the kitchen, tents and horse gear. Even the most conscientious campers can create this type of impact because the paths of travel between these three areas are often dictated by the topography of the campsite. If for some reason you must stay in the campsite an extra night, take a look at the site and relocate the tents, kitchen and horse gear as necessary so that no single place receives the brunt of your impact. Pay particular attention to the areas where the horses have been grazing. Evaluate the land and be certain that it can withstand another day's use.

NATURALIZE THE CAMPSITE WHEN LEAVING

When breaking camp, take the time to naturalize the site. Manure piles should be kicked apart and scattered. Pawed ground should be filled in. Extra firewood should be scattered. Cover scuffed-up areas with native materials, brush out footprints and rake matted grassy areas with a stick to help the site recover and be less obvious as a campsite. Other travelers will be less likely to camp in the same spot. The less often a pristine campsite is used the better chance it has of remaining pristine.

AVOID PLACES WHERE IMPACT IS JUST BEGINNING

As introduced in the preceding section, naturalizing a pristine campsite is critical in reducing the amount of use the site receives and minimizing the overall impact. A previously unused site that was conscientiously camped on for one night will recover if left alone. Once a formerly pristine site becomes impacted, the only way to stop the deterioration is to avoid using the site altogether. Key concepts are:

Choosing appropriate campsites

Avoid lightly impacted trails

Allow these impacts to recover over time

CHOOSE APPROPRIATE CAMPSITES

Most campsites can withstand a certain level of use. However, a threshold is eventually reached where the regenerative power of the vegetation cannot keep pace with the amount of trampling. Once this threshold is reached the site deteriorates rapidly with continued use. This results in the development of an established campsite with a discernable “barren core”. The threshold for a particular site is affected by many variables such as climate, soil type, elevation and aspect. All of these factors determine what species of plants will grow on the site and how durable the site is and to what degree it will be affected by erosion.

Campsites that show slight but definite impact are best left alone. In remote, pristine areas, it is best to camp on an unused site. In a popular area it is best to select a well-established campsite.

AVOID LIGHTLY IMPACTED TRAILS

In pristine areas it is best to adhere to the practices described earlier by spreading out while traveling and riding on durable surfaces. Many times faint user-created trails are formed without consideration of the potential damaging effects of erosion. Once these trails are established and the topsoil is worn away, the damage caused by running water increases the likelihood of the trails becoming permanent.

ALLOW THESE IMPACTS TO RECOVER OVER TIME

Lightly used campsites and trails have usually not been so heavily damaged that they cannot recover. If they receive no further use, over the course of time these campsites and trails can revegetate and revert back to their natural appearance. By spreading out while riding and camping in remote areas and staying on well-established trails and campsites in popular areas, it is possible to minimize or prevent the proliferation of unnecessary user-created campsites and trails.

3. MINIMIZE CAMPFIRE IMPACTS

The use of campfires in the backcountry was once a necessity for cooking and heat. Campfires are now steeped in history and tradition. This tradition is so entrenched in our minds that for some the thought of going on a backcountry camping trip and not having a fire is almost unthinkable. Yet the natural appearance of many areas have been compromised by the over use of fires and the increasing demand for firewood. Countless fire rings litter forests, attract trash and mark poorly chosen campsites. Lasting impacts are also a legacy of wood gatherers who remove every branch within reach and of the fire itself, which scars the ground and surrounding rock. Many land managers and backcountry rangers agree that campfires constitute the single most prevalent recreational impact in the backcountry.

The development of versatile and efficient camp stoves has facilitated a shift away from the traditional fire. Camp stoves have become essential equipment for minimum impact camping. Stoves are fast and flexible and they eliminate firewood availability as a concern in campsite selection. If you typically depend on fires as a light source, consider using a lightweight candle lantern or small gas lantern as an alternative.

Due to the problems associated with campfires, backcountry visitors should ask themselves if a fire is really necessary every night or at every camp. A switch to occasional and appropriate use of campfires will mitigate many of their impacts and avoid the problem of fire scars in areas where fires are not suitable. Camping without a fire adds a new dimension to the backcountry experience by bringing the night world closer.

Factors in responsible fire use include:

When is fire appropriate?

Firewood selection and gathering

Care and feeding your fire

Cleaning up the fire

Fires in popular or high-use areas

Fires in pristine areas

When is a fire appropriate?

The most important factors in determining whether or not to have a fire are:

1. Fire danger for the particular time, season and location
2. The availability of the right amount and type of firewood
3. Administrative restrictions

The availability of dead and downed wood will determine whether or not to have a fire. Determining the abundance of the wood supply is rather subjective. There should be enough wood around so that an armload removed from the ground will not be noticeable. A lack of firewood may be the result of too many past campfires in an area or possibly of the type and age of the forest.

Having a campfire during hot, dry, windy periods risks starting a forest fire. Elevation is an additional consideration. At tree line, wood production is a slow process. Because of the harsh climate conditions, a 100-year-old tree may appear to be the same size and diameter as a 15-year-old tree 2000 down the hill. Fires are not recommended near tree line due to the fragile nature of the ecosystem and the slow generation of wood. Finally, there may be an administrative fire ban in effect due to environmental conditions or for other reasons.

FIRE SELECTION AND GATHERING

Only one type of wood is acceptable for building a low impact campfire—dead and downed wood. Dead wood is an obvious choice because it burns better than green wood. Downed wood is perhaps not so obvious but makes sense because it is easier to collect and leaves less impact in the form of stumps, sawed logs and broken branches.

Collect loose sticks and branches from the ground. Avoid breaking dead branches off live standing trees or fallen trees. This leaves an ugly long lasting impact. It is not uncommon to see a tree stripped of all its lower branches in high use campsites.

Firewood should be no larger than an adult's wrist in diameter and easily broken by hand or by stepping on it with one end propped against a rock. Wood this size burns completely and quickly and its use curtails a common impact resulting from campfires--- the presence of large half burned logs left in a fire ring.

Firewood should be gathered from a wide area and not in the immediate vicinity of camp. Take time to walk five or ten minutes from camp and then begin to collect wood. Pick up the wood as you are walking so that no single place becomes denuded. If wood is plentiful in one spot, avoid depleting it and take only what is necessary. Gathering small wood in this fashion eliminates the need for saws, axes and hatchets.

During foul weather times such as late season hunts, fires may be heavily relied upon for cooking and warmth. Some users cut and split large amounts of wood. The same principles should apply: use only dead and downed wood, cut only what you think you will need, use the entire piece of wood, and use (or carry with you to the next camp) any wood you have cut. Be careful to minimize the sign of chips and sawdust, which detract from the naturalness of the area.

CARE AND FEEDING YOUR FIRE

When using small-diameter wood do not break sticks into shorter lengths until you actually feed the fire, then break your wood a piece at a time. If there is any unburned wood left when you break camp, scatter it in a way that blends in naturally with the surroundings.

When you are not in camp, the fire must be put out completely. Forest fires caused by unattended campfires are not part of the natural processes and account for millions of dollars of damage every year. You should be able to place your hands in the cold fire pit and feel no warmth from embers.

All firewood should be burned down to white ash or very small coals. This may require some extra time but it is a significant step in minimizing the impact of the campfire. Placing very small pieces of wood on the coals and fanning or blowing on the bed of coals will help burn them down.

CLEANING UP THE FIRE

Too often fire sites are left in total disarray and cluttered with litter, half burned logs and a mountain of coals. In certain highly visited campsites you expect to see fire rings. In other more remote areas the remains of campfires are a significant visual impact. Whenever campfires are made, they should be cleaned up before breaking camp, but different levels of cleanup are preferable in different locations.

In popular campsites that will be used by many people during a season, encourage campers following you to use the same fire ring. Clean food waste and trash from the ring, crush any remaining coals completely and scatter the cool ashes over a large area. The next party, who will be more likely to use a clean site rather than construct a new one, will appreciate your efforts.

When using fires in more remote areas, special care and extra effort must be taken to obliterate any sign of a fire. Burn the wood completely and then scatter any remaining ashes and crushed coals after they are completely cool. Fire is a natural process in the forest and a few small coals will be barely noticeable.

FIRES IN POPULAR OR HIGH-USE AREAS

In high-use campsite where impacts should be concentrated, campfires should be built in existing fire rings. In these high-use sites it is almost guaranteed that there will be a fire ring present when you arrive. If the area can still support a fire (there is still enough firewood available) build the fire in the existing ring.

Fire rings actually serve little useful purpose and are not necessary when building a fire. They do not ensure that a fire will not spread. If rocks are needed to support cook pots or a grate, use only enough to get the job done and so not build a rock ring. Fire rings only serve to blacken rocks and create further impacts.

It will take a long time for the habit and practice of building fire rings to fade away, but in the meantime conscientious low-impact campers can help reduce the number of fire rings. By using existing fire rings and leaving the ring clean, the next party of campers will be encouraged to do the same. With time, the number of rings in a given campsite or whole forest should decrease.

In less-popular areas that are visited less frequently, it may be prudent to remove existing fire rings to allow the site to recover and return to a more normal state. If a campsite has too many rings, destroying all but one of them will reduce the spread of campfire-related impacts.

To destroy a fire ring, disassemble the rocks and scattered them in the woods, and bury or hide the blackened sides of the rocks. If there is a large, swiftly moving stream nearby, some rocks can be tossed into the water. After disassembling the ring, be sure to remove all coals and ashes and scatter them well away from the site. Pack out unburned garbage and disguise the blackened earth with duff or pine needles. This organic material will facilitate plant growth.

FIRES IN PRISTINE AREAS

In remote or pristine areas that are seldom visited, it is possible to enjoy a fire and Leave No Trace that it was ever there. Techniques for these types of fires have evolved over the 40 years and there are now some very easy alternatives to traditional fire rings. Most of these methods require no more effort than building a rock ring, but they do require a willingness to learn a new way of doing things. Locate all fires away from thick vegetation, boulders and overhangs, which can burn or become scarred by fire smoke and soot.

THE FIRE PIT:

When camping near large rivers or creeks, build a fire on exposed gravel bars well below the high water line. Build your fire in a shallow pit scooped out in the gravel or sand. When finished, carefully remove all charcoal and ash, or it will float to the surface with rains. This practice is also useful in arid regions where a fire can be built in a dry wash subject to occasional flash flood. When building a fire near water it is important to take extra care to keep any food or waste products from entering the water source.

In pristine areas away from water sources, areas of exposed mineral soil can be used for fires in the same method as described above. Mineral soil is a term used to describe light colored dirt that contains only a small fraction of organic material. Organic-rich soil, the darker topsoil you see may contain flammable materials. Be sure there is not inconspicuous vegetation growing in the mineral soil. Once this ignites, the fire can spread underground and flare up into a forest fire if the correct conditions exist.

THE MOUND FIRE

An innovative method of building a low-impact fire is the mound fire. Mound fires can be built virtually anywhere with a simple tool: a garden trowel, large stuff sack and ground cloth.

Construct this fire by first locating a ready source of mineral soil. The best places are streambeds where sand is accessible in shallow water or from the cavity left when a tree blows over. Gather the mineral soil from a spot that is already disturbed by the forces of nature and where the impact of digging and collecting will not damage live vegetation.

Use the trowel to fill the stuff sack (turned inside out to keep the inside of the bag from getting dirty) and carry a load of mineral soil to the fire site. Lay a tarp or ground cloth on the fire site and then spread the soil on top of it. Form a circular flat-topped mound about 6-8 inches thick. The circumference of the mound should be larger than the size of the fire to allow for the inevitable spreading of coals. It may take more than one bag of soil to make an adequate mound.

The ground cloth is important only in that it makes cleaning up the fire much easier and allows you to move the fire mound. The thickness of the mound is critical for insulating the surface underneath from the heat of the fire and if a ground cloth is used, to prevent it from melting. After the fire is out and you are ready to break camp, the little bit of leftover ashes and coals can be scattered away from camp and the mineral soil returned to the source.

The beauty of this type of fire is that it can be built on flat exposed bedrock or on an organic surface such as duff or grass.

PORTABLE FIRE PANS

Another alternative that is becoming more popular is the portable fire pan. To minimize the impact of their fires, river runners first used fire pans and some backcountry hikers are now carrying them. It is a metal tray with rigid sides at least 3 inches high. Oil drain pans, small barrels that have been cut down, and some backyard barbecue grills make effective, inexpensive fire pans. Elevate the pan so that the heat from the fire does not scorch the ground. (Rocks work well for this.) If you plan to use the pan on top of vegetation or leaf material, use rocks to raise it off the ground or line it with several inches of inorganic soil to help protect plants from heat.

WOOD BURNING STOVES

Small, portable wood-burning stoves are often used for heating and cooking. These stoves are popular and have been available for years. Improved designs have minimized weight and increased efficiency.

4. DISPOSE OF WASTE PROPERLY

This common saying is a simple yet effective way to get backcountry visitors to take their trash home with them. There is no reason why people cannot carry out of the backcountry the extra food and packaging materials they carried in with them in the first place. Although the litter situation in many areas is better than it was 10-20 years ago, it continues to be a problem. Though most litter in the backcountry is not significant in the long-term ecological health of an area, it ranks high as a problem in the minds of many backcountry visitors. Trash and litter are primarily social impacts, which can greatly detract from the naturalness of an area.

TRASH

Reduce litter at the source. Much of the trash and litter found in the backcountry originates from food items. Perhaps the easiest way to practice the principle of Pack It In, Pack It Out is to refer back to the first Leave No Trace principle regarding trip preparation. If you take time to prepare your food supplies, it is possible to leave a large percentage of the potential trash and litter at home. Repackaging dry food items into plastic bags and liquids into reusable plastic containers saves weight and makes the volume of trash you have to pack out significantly less than if you keep the food in its original packaging.

Another idea is to try to keep your menu as simple as possible. For short trips you may consider not taking a stove and therefore taking only food that requires no cooking. This could significantly reduce the excess food packaging you take into the backcountry.

Some paper trash can be burned in a campfire. However, it is important to realize that much paper packaging used today is lined with non-burnable foil or plastic. When these items burn in a campfire the paper burns but the foil or plastic remains. This foil or plastic is usually not noticeable until the fire is out. Unless you take the time to sift through the ashes, it will be left as litter. Paper lined with foil or plastic is considered non-burnable trash and should be packed out with any metal cans, glass and plastic items. The best practice is to pack out all trash. Separate and recycle trash whenever possible.

Although trash from food packaging can be easily taken care of with some prior planning, other forms of litter can become a problem. Cigarette butts tossed along the trail not only pose a potential fire problem but also are too often found littering trails and camps in popular areas. Candy and gun wrappers and twist ties are also commonly found. Make sure all these small pieces of litter get placed in the trash bag.

Fishing tackle is another source of litter. Fishing lures, flies and line are often left tangled in the brush along lakes and streams. Packaging from line and other tackle is easily dropped and forgotten. Be careful to put this type of litter in a pocket, daypack or saddlebag. Take the time to pick up any of this type of trash you may bring in with you.

GARBAGE

Garbage is the organic waste left over from cooking. Careful meal planning can easily reduce this waste and minimize the amount of leftovers. In the event you do have leftovers, they should be eaten later or put into a plastic bag or another container and packed out. Burning or burying this type of waste is ineffective and inappropriate. It requires a very hot fire to burn garbage thoroughly and animals will dig it up if it is buried.

When cleaning dishes, first scrape the pots, pans and dishes and put these scrapes into a trash bag. After washing the dishes, the wastewater can be scattered into the bushes well away from (800 feet) from camp and any water sources. Some campers strain their gray water through a bandanna or small metal strainer brought along solely for that purpose. This guarantees that all the food scrapes will be packed out. Whichever method you choose, be sure to pick up and dispose of food scrapes immediately, before they are forgotten.

Used feminine hygiene products should be treated as organic material. It is especially important that these items are **not buried** because animals will probably dig them up. Proper disposal requires that they be placed in plastic bags and packed out. They are **considered non-burnable**. There are some exceptions to this practice when traveling in bear country, which are discussed in the following principle under "Special Considerations for Bear Country".

Why go to all this trouble? Improper disposal of organic waste, especially in popular, high-use areas can cause significant ecological and social impacts over time. Under no circumstance should organic waste be buried. Discarded or buried food scraps often become attractants to small animals who live in the area. It is common to see chipmunks, ground squirrels and various species of birds gathering around the camp kitchen. These "camp robbers" have become habituated to campers as a food source. This human food is not natural to them and their natural feeding cycles and habits will become disrupted. A conscientious low-impact camper always keeps a clean camp.

TRASH LEFT BY OTHERS

As a final point to remember in managing waste, take the time to pick up and carry out any other trash and litter you find that was left by others. It takes little effort and will be appreciated by all the horse packers that follow you.

PROPERLY DISPOSE OF WHAT YOU CANNOT PACK OUT

The second challenge in managing waste in the backcountry is the disposal of human waste and wastewater from personal washing and camp chores. In today's modern American society we have become so accustomed to the convenience of flush toilets and modern plumbing that we have isolated ourselves from the implications of our waste disposal. Improper disposal of human feces in the backcountry is a significant and all too common problem.

Improper disposal of human waste can have negative ecological and social impacts. Ecologically, human waste can pollute water sources: socially, encountering human waste can be an unpleasant experience. There is also some concern with sanitation, since improperly disposed waste can attract flies that may carry pathogens to food supplies.

Another problem in the backcountry is the improper disposal of toilet paper. In popular campsites toilet paper can often be found on the ground or tangled in the brush.

Hunting and fishing activities as well as camping in bear country all present special considerations when examining the Leave No Trace principle of properly disposing of what you cannot pack out.

This section will address these main points:

PROPER DISPOSAL OF HUMAN FECES AND URINE

PROPER DISPOSAL OF TOILET PAPER

MANAGEMENT OF WASTE WATER FROM COOKING AND CLEANING

CONCERNS WHILE FISHING AND HUNTING

SPECIAL CONSIDERATIONS FOR BEAR COUNTRY

PROPER DISPOSAL OF HUMAN FECES AND URINE

The improper disposal of feces can create significant impacts to the ecology of the backcountry and on its enjoyment by other visitors. Potential degradation of water quality is the greatest of the ecological impacts. Proper disposal of feces is simple and does not require much additional time. What it does require is a commitment to minimize your impact and the dedication to do the right thing. The currently recommended method for disposal of human feces is burial. Burial of this waste does not help speed decomposition, but rather helps to slow the movement of waste to water sources and prevents the transfer to insect carried and airborne pathogens. It also helps mitigate unfavorable social impacts. The use of portable toilet systems, which allow feces to be carried out of wild lands, is being studied. River runners currently use lightweight portable systems but workable systems have not yet been devised for horse packers or hikers.

Catholes: Perhaps the most widely accepted method of backcountry human waste disposal is the cathole. The advantages are:

1. It is easy to dig
2. It is easy to disguise after use
3. It is private
4. It disperses waste rather than concentrating it (which enhances decomposition)
5. It is easy to select an out-of-the-way location where you can be certain no one is going to casually encounter it.

Select a cathole site far from water sources. 200 feet is the recommended distance. One-way to get a sense of this distance is to walk away from water sources for 2-5 minutes (depending on the amount and type of vegetation in the area) or walk about 75-80 steps. Select an inconspicuous site where one will not naturally walk. Sites in thick undergrowth, downed timber or on steep hillsides are good examples. If camping with a group or if camping in the same place for more than one night, disperse the catholes over a wide area; don't go to the same place twice. Try to find a site that has deep organic soil, rich in organic matter that helps to decompose the feces. If possible, locate your cathole where it will receive maximum sunlight. The heat from the sun will aid in decomposition. Choose an elevated site where water would not normally "pool" during runoff or rainstorms. As run-off occurs, over time the decomposing feces will percolate into the soil before reaching water sources.

Using a small trowel, dig a cathole 6-8 inches deep and 4-6 inches in diameter. If you start to dig and hit rocks or roots that prevent you from reaching the correct depth, then you should find another spot. After use, mix organic soil with the deposit using a stout stick. Fill in the cathole with the previously removed dirt and disguise with native materials. The stick can be tucked under duff or shrubs so it is not noticeable.

DO NOT deposit human feces under rocks or in burrow holes of animals. It will decompose slower under rocks and is more likely to be discovered by other people.

LATRINES: Catholes are recommended for most situations; however, there are some instances when a latrine should be used. Though catholes are relatively simple, they do require some thought and a little effort. When camping with children or youth groups it may be better to use a latrine. Though the decomposition rate is slowed down considerably with latrines, you can be assured that the feces are being put in the proper location. Sometimes younger campers cannot grasp the subtleties of catholes and as a result do not use them correctly. Commercial users on public lands are often required to use latrines.

Select a latrine site with many of the same considerations as a cathole. They should be far from water and camp, in an out-of-the-way spot where other people would not likely to camp and in soil that will allow you to dig a hole of sufficient depth. Waste concentrated in a latrine will decompose very slowly and pathogens may survive for years. Location is critical when selecting a site. The use of special enzymes packaged for use in RVs may increase the rate of decomposition. The ash from your campfire will also speed up this decomposition process.

URINATION: Urine in the backcountry creates very little impact but it is worth mentioning. Research has found that urine poses little threat to human health. In most mountain ranges of the western United States it is best not to concentrate urine in the same spot. A shady spot on organic soil is the best place to urinate. Urinating on sun-warmed rocks may create a strong odor. In wet mountain ranges such as the Cascades of the Pacific Northwest, problems can occur where salt-starved deer may paw at the ground to get salts deposited with the urine.

PROPER DISPOSAL OF TOILET PAPER

Improper disposal of toilet paper is a common problem in the backcountry. Although ecologically this is less important than the proper disposal of feces, it risks contaminating water sources. Perhaps the greatest problem comes from a social standpoint: Toilet paper found in campsites is unsightly and possibly unsanitary.

PACK IT OUT: The most ecologically sound method of toilet paper disposal is to pack it out. Toilet paper should be considered unnatural since it is a highly processed material. Some people believe it should not be left in the backcountry. By being careful and using double or triple bags, toilet paper can be packed out with little inconvenience or odor.

Do not burn toilet paper in the cathole. This requires a high temperature that cannot be reached with matches and the chance of starting a forest fire or grass fire is too great. An alternative is to store the used toilet paper in plastic bags until the next time you have a campfire and burn it then.

BURY IT: Use toilet paper sparingly and use un-dyed, un-scented toilet paper. When buried deeply, animals are less likely to dig up toilet paper and scatter it. Do not use pre-moistened wipes because they are highly scented and take a long time to decompose plus introduce unnatural chemicals into the environment. RV type toilet paper decomposes faster than the regular type and should be used when packing into the backcountry.

If there is a concern that the toilet paper will be dug up, an alternative is necessary.

LEAVE IT AT HOME: The low-impact camper willing to go the extra mile might consider foregoing toilet paper altogether and using natural alternatives. Popular forms of natural toilet paper include oak or poplar leaves, stones and smooth sticks. Fir cones or snow can also be used. Obviously some experimentation is necessary to make this practice work for you, but it is worth a try. Be sure to identify any plants or leaves as non-irritating before using them.

A recreation planner for the BLM in Utah is currently advocating the use of natural toilet paper. The area he manages has a high incident of animals digging up buried toilet paper. Although most people scoff at first, he has found a high level of compliance with this recommendation.

MANAGEMENT OF WASTE WATER FROM COOKING AND CLEANING

CLEANING DISHES: All dishes washing should be done well away from water sources. Soap is usually unnecessary for washing dishes. Hot water and a little elbow grease can tackle most cleaning chores and soap can sometimes be difficult to thoroughly rinse from dishes. Sand can act as a useful abrasive material for any burned on food. Scrape solid food waste from the dishes and place the waste in the trash bag.

Wastewater should be scattered over a wide area away from camps and all water sources. Remove all food particles from the water before disposing of it (a light weight strainer is handy for this) and pack out the refuse with excess food and other litter.

In some situations it may be more prudent to concentrate wastewater. Examples include bear camping or camping with a large group. In these cases it is best to make a sump hole well away from the kitchen where all wastewater is poured. Make sure to cover the sump with sand or dirt and camouflage it before leaving. This is a less effective way to Leave No Trace and at popular campsites the lingering odors often attract animals and flies.

PERSONAL WASHING: For personal washing many people like to use soap, as it is more effective in cleaning off oily dirt and in washing hair. In these cases lather yourself and rinse off at least 200 feet from water sources. This will help prevent the soap from entering the water sources. Use a collapsible water jug or cooking pot to carry water and ask a friend to help pour for you if necessary. For sanitary reasons it is a good idea to wash your hands after using a cathole and before cooking a meal. In these cases, the judicious use of soap is recommended. Remember, the point is to prevent soap from getting into the water sources.

A final word about soap. All soap is “biodegradable” if given enough time. In the cool mountains it takes a very long time even for biodegradable varieties to decompose. Try to use a soap that contains no phosphates (“biodegradable” on the label) and use it sparingly.

CONCERNS WHILE FISHING AND HUNTING

There are two exceptions to packing out left over food or other organic waste. The first occurs when traveling in grizzly country, which will be explained below. The other is the disposal of fish viscera or the inedible remains of animals you have hunted and killed. Fish viscera are generally a natural part of the ecosystem. In high use areas consider burying them in a cathole to reduce the chance that other people will come across them. If you are just out fishing for the day, consider taking your fish home to clean them and dispose of the entrails there. In remote areas that receive little use, viscera can be scatter widely out of sight and away from campsites. In bear country or where other animals might present a problem keep fish odors safely downwind and away from people, trails and campsites. Puncture the air bladder and throw the viscera far into lakes or fast moving water. This will mask the odor and place it where it would naturally occur.

If you are a hunter, be courteous to other hunter and backcountry visitors by field dressing game animals well away from camps, trails and water. Leaving gut piles, lower legs or hides in camp creates a serious social impact. Carefully disposing of these items will help prevent some of the misunderstandings and tensions that sometimes occur between hunters and other users groups. This will also help reduce encounters between people and scavenging wildlife. Remember that hunting is not allowed on some public lands and it is usually carefully regulated where it is permitted. If you have any doubt about fishing or hunting in an area in which you will be traveling, check with the local managing agency for regulations or suggested practices.

SPECIAL CONSIDERATIONS FOR BEAR COUNTRY

When traveling in bear country, whether there are black bears or grizzly bears present, camp organization and cleanliness take on a whole new significance. The primary concern here is safety, both for the visitor and for the bear. Personal safety is the first priority; a bear can be very dangerous if provoked or habituated to humans. Safety of the bear is also a concern. Once a bear is habituated to people, usually because it associates people with food, it can rapidly become a “problem bear” and will have to be dealt with accordingly, often at the expense of its life.

Though black bears are often perceived to present less of a threat than grizzly bears, the potential for personal injury does exist and precautions should be taken.

KITCHENS: Messy kitchens with strong food odors and food that is readily available can attract bears. In bear country, kitchens should be placed at least 100 yards from sleeping sites. Avoid creating large amounts of left over food because cooked food has a strong scent. Try to eat all leftovers promptly. If you still have leftovers, either triple bag or quadruple bag them, or burn them a bit at a time in a hot fire in a tin can. The food residues will be contained within the can, which can be stored with the food and packed out.

WASTE WATER: In remote country with a lot of bear activity, small amounts of gray water from cleaning dishes can be deposited directly into large and rapidly moving streams. (Fast moving water can absorb small amounts of waste without undue impacts.) If the stream is small, use a sump hole in the kitchen area to concentrate the wastewater and odors. The intent is to minimize food odors in the kitchen that may attract a bear.

FOOD STORAGE: All food must be properly stored to make it unavailable and uninviting to bears. This includes canned food, pop, beer, grain and sweetened horse feed, pet food, garbage, and scented or flavored toiletries.

The main methods of food storage are hanging and the use of animal-resistant containers. If your method is hanging, it must be hung at least 12 feet off the ground and 4 feet away from the trunks of trees. Wildlife carcasses or parts of carcasses must be stored like food. In some areas carcasses must be hung 100 yards from any sleeping area, trail or recreational site. Even with this precaution black bears who are particularly adept at climbing, may still reach your food. Food hangs, like kitchens, should be located downwind of sleeping areas. Food brought to your tent invites danger to your sleeping area as the bear searches for the source of the food odors.

Bear resistant panniers and containers make food storage much easier in bear country. They are made of high-strength materials such as aircraft aluminum, with recessed lids and locking mechanisms. An approved container or pannier does not need to be hung. The Interagency Grizzly Bear Committee will approve containers that meet the specifications. Check locally for the possibility of renting such containers.

Packing out feminine hygiene products in grizzly country requires special care. It is best to triple or quadruple bag these items and pack them out with the food garbage. Do not burn these items, do to the odor caused when attempting to burn them and the fact that they will not burn even in very hot fires. In bear country, be sure to treat used sanitary products as food garbage. Leave them in the kitchen and hang them with food and trash while in camp. Under no circumstance should they be left in your personal gear and stored near sleeping areas.

5. BE CONSIDERATE OF OTHER VISITORS

Many people go to the backcountry to enjoy the peace and solitude a wilderness setting can provide. With increasing numbers of horse packers and backpackers, this solitude can be hard to find. Being considerate of others and practicing good camp and trail etiquette helps ensure that everyone enjoys the visit.

Sound travels easily in the wilderness. Be aware of your noise level. If you use bells, try to keep them away from other groups. If you bring pets (check local regulations), keep them under control at all times. A well-behaved dog can be an excellent companion on a backcountry trip. Conversely, a rambunctious dog can create impacts by digging, barking, and frightening horses and wildlife. This can detract from your experience and from other people's experience.

Respect private property. Always get permission to use or cross private land.

Few hikers know they should pull off the trail on the downhill side when meeting stock users. If a horse is going to spook at a hiker, the path of least resistance is downhill. This may not be the best place for you or your horse. Explaining this to a hiker will help them to understand why you are asking them to step off the trail on the downhill side. You may need to ask them to hold up while you pass and ask them to speak to show your horses that they are just people with strange looking packs on their backs. If instead, you are the one being overtaken, remember the hiker is packing a load and has a right to be on the trail too. Find a good spot to let them pass. Again, a little conversation as you pass each other may reduce the chance of your horses being spooked.

Riding in small groups will reduce dust. It will also make meeting and passing other groups easier and safer especially in rough, rocky terrain. Exercise caution when meeting loose dogs, llamas, pack goats, bicycles or motorized vehicles.

Any efforts you make to promote understanding and appreciation between different user groups are important. All users must work together for the common goal to Leave No Trace. Antagonism between groups only stymies these efforts, as well as understanding and enjoyment of the backcountry.

6. RESPECT WILDLIFE

Respect for others includes wildlife. We have the potential to greatly impact wildlife through direct contact and through habitat destruction. Never feed animals or leave food scraps where they might be eaten. This practice habituates them to human food that can disrupt their natural food cycles or make them more aggressive toward humans (i.e. bears). Observe wildlife from a distance using binoculars or a long camera lens. If you travel with pets, ensure that they are never allowed to harass the wildlife whether mole, marmot or deer.

7. LEAVE WHAT YOU FIND

Allow others a sense of discovery by leaving rocks, plants, archaeological artifacts, and other objects of interest as you find them.

AVOID DAMAGING LIVE TREES AND PLANTS: Never hammer nails into trees for hanging gear or hack at them with hatchets and saws. Never cut live trees for poles. Avoid girdling thin-barked tree trunks with tent lines. Cutting boughs for use as a sleeping pad creates minimal benefit and maximum impact. Inexpensive sleeping pads are readily available at stores catering to backcountry travelers. Lightweight nylon tents eliminate the need to cut poles for wall tents.

Enjoy an occasional edible plant, but be careful not to deplete the surrounding vegetation. In remote areas a good rule of thumb is to harvest only abundant species and take only 10-20 % from any site. In popular locations and national parks you should not pick any vegetation. Take pictures or sketch the flowers but leave them growing to reseed in the future.

LEAVE NATURAL OBJECTS AND CULTURAL ARTIFACTS: Natural objects of beauty or interest such as antlers or petrified wood are appealing when you find them in the backcountry. They should be left for others so that they too can sense the experience and that sense of discovery. In national parks and some areas it is illegal to remove natural objects.

The same ethic is applicable to the discovery and removal of cultural artifacts from public land. The Archaeological Resources Protection Act protects cultural artifacts, and it is illegal to remove them from any public lands. This act protects all artifacts ranging from seemingly insignificant potsherds and arrowheads to ornate pots and clothing items. More importantly, removing these artifacts takes them out of context and removes a chapter from an interesting and important story. It is considered stealing from the heritage of many native peoples. If you discover an artifact, enjoy it where it is. Take some photos or draw a sketch, then leave it as you found it. Help preserve the past for the future.

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