

THE TREAD LIGHTLY! GUIDE TO RESPONSIBLE MOTORIZED VEHICLE USE IN SAND DUNES

Introduction

We did not inherit the Earth from our parents,
We are borrowing it from our children.
-Native American Proverb

For many of us, enjoyment of the outdoors has become a major form of recreation—“to get away from it all.” Hunting, fishing, camping, trail riding, photography, canoeing, hiking, biking—you name it—have become very popular. One reason for this popularity is that off-highway vehicles (OHVs) have made remote areas of the country accessible.

The off-highway backcountry has brought out the Lewis and Clark in all of us, to explore and enjoy. But we have a responsibility to our outdoor home. We need to keep it neat and orderly, just as we would our own homes.

Throughout the *Tread Lightly! Guide to Responsible Motorized Vehicle Use in Sand Dunes*, we will help you prepare to responsibly enjoy off-highway outdoors experiences and to be a positive influence on nature and other recreationists.

Now, off to the wonderful world of responsible sand duning the Tread Lightly!® way.

WHAT IS TREAD LIGHTLY!?

Tread Lightly! is a national nonprofit organization with a mission to proactively protect recreation access and opportunities in the outdoors through education and stewardship. Tread Lightly!’s educational message, along with its training and restoration initiatives are strategically designed to instill an ethic of responsibility in a wide variety of outdoor enthusiasts and the industries that serve them. The program’s goal is to balance the needs of the people who enjoy outdoor recreation with our need to maintain a healthy environment.

In 1985, the U.S. Forest Service launched the Tread Lightly! program as a means of addressing concerns about the impacts from increasing numbers of visitors to the great outdoors for recreational purposes. In 1990, to maximize the program’s effectiveness, management responsibilities were transferred to the private sector, making Tread Lightly! an apolitical, nonprofit organization. Tread Lightly! is now the nation’s signature ethics message for recreationists that use motorized and mechanized vehicles in their outdoor pursuits.

Tread Lightly! has become an ethical and educational force in bringing together and unifying a broad spectrum of stakeholders including agencies, industry, media, conservation and enthusiast groups, and concerned individuals who share a common goal—to find a balance between humans and nature.

Our federal partners in spreading the message of responsible and ethical use of the outdoors include the National Park Service, Forest Service, Bureau of Land Management, Bureau of Reclamation, and the Army Corps of Engineers.

The message is simple: conserve our environment! Make the commitment to follow Tread Lightly! principles as summarized in the Tread Lightly! Pledge:

Travel Responsibly
Respect the Rights of Others
Educate Yourself
Avoid Sensitive Areas
Do Your Part

These are the basic tools for responsible recreation. In the following pages you will find in-depth information on how to Tread Lightly! by minimizing your impacts on land while sand duning. By practicing these principles and suggestions provided in the guide, you will help protect natural resources and preserve access to public lands.

Treading Lightly On Land

TRAVEL RESPONSIBLY on roads and trails or in permitted areas.

The Fundamentals...

- Travel only in areas that are open to your type of recreation.
- Stay on routes and trails designated for your type of travel.
- Don't create new routes or expand existing trails.
- Cross streams only at fords where the road or trail intersects the stream.
- Understand and practice proper techniques related to negotiating terrain.
- Always travel with a partner. Traveling solo can leave you vulnerable if you have an accident or breakdown.

Sand duning is a wonderful way to experience the outdoors, and if done properly, is an environmentally sound way to enjoy the area. Here are a few tips to help you negotiate the terrain while protecting the environment.

- Determine the boundary of the designated sand duning area. Don't travel outside this area.
- Avoid running over plants. Not only does it damage the environment, but it can also ruin your tires.
- Never take your eyes off the dunes, and watch your speed. Obstacles appear quickly.
- Be aware that the dunes are constantly changing: terrain features on the ride out may not be the same on the way back.
- On windy days with shifting sand, use stationary landmarks and/or global positioning system (GPS) units to help identify the way back.
- In coastal duning areas, watch for quicksand in the low unvegetated areas between dunes.
- Avoid areas adjacent to rivers, streams, and lakes. These areas in sand dunes are especially sensitive.

- In areas adjacent to sand dunes, travel on designated roads and trails. Ride in the middle of the trail to minimize widening it.

Terrain Features

- If you overdrive your line of sight by traveling too fast you may inadvertently wedge yourself in a “witch’s eye” or “blow hole” (a ravine or depression in the sand).
- Watch for slip faces. Often found on the leeward (downwind) side of a dune, slip faces build up with unstable loose sand, which slips and runs down slope creating steep drop offs.
- As you approach the top of a dune crest (razorback), drive parallel to the edge to avoid shooting over a steep drop-off. Try to do this on the driver’s side so you have a better view over the razorback.
- Heat haze and midday whiteouts can distort terrain. Reduce speed to allow more time to react.
- Scout an area before traveling at higher speeds. When traveling at higher speeds in unfamiliar dunes it is easy to miss terrain features that may cause accidents or lead to serious injury.
- When traversing, maintain speed and possibly accelerate to maintain momentum to stay on hills. Turn your wheels upslope and use throttle to hold your height on the hill. Traversing can help in spotting exit routes and getting around obstacles.
- When jumping hills or dunes, use a spotter.

Driving Tips

- When driving a sand rail, know how to operate a clutch, shift smoothly, and select gears that maintain the middle RPM range.
- Decelerate into corners and accelerate through corners to smoothly track the desired course.
- Braking should be smooth to minimize “locking up.”
- Use momentum to climb hills; downshift early to avoid stalling.
- If you stall mid-slope, shift into reverse and use the clutch and throttle to start a straight backing movement. Before the vehicle gains too much momentum, turn to the most favorable side, turn to face downhill, then shift into first gear.
- Berms created near campsites by repetitive riding (also known as “worm tracks” or “speed bumps”) are difficult to spot and extremely hazardous. Keep speeds low in these areas.

RESPECT THE RIGHTS OF OTHERS including private property owners and all recreational trail users, campers and others to allow them to enjoy their recreational activities undisturbed.

The Fundamentals...

- Respect and be considerate of other users so that all may enjoy a quality outdoor experience. Keep a cheerful, pleasant attitude. A gracious “Hello” goes a long way to building a friendly relationship with other trail users.

- Yield the right of way to those passing you or traveling uphill and always yield to horses. When driving also yield to hikers, and bikers. Leave gates as you find them unless otherwise posted.
- If crossing private property, be sure to ask permission from the landowner(s).
- Keep the noise and dust down.
- Don't be a trail hog. Share with all those who recreate, regardless of their means of travel.

Respect and common courtesy go a long way. By valuing the environment and those who enjoy it, you keep recreational opportunities available for you and others to enjoy. Remember these basic rules and you will find your outdoor experience to be more rewarding.

- Yield right of way to drivers on the uphill grade or those who may overtake you.
- Non-motorized travelers maintain the right of way. Yield to bicycles, horses, and hikers.
- When encountering pack animals use extra caution. Slow down, move to the side of the trail, stop and ask the handlers how to proceed. If you are wearing a helmet, remove it to look human to the animals and don't make sudden movements.
- Ranchers use public lands to graze livestock. It is important to leave gates as posted or if there are no signs leave gates as you find them—open if open, closed if closed.
- Do not idly ride around in camping, picnicking, trailhead, and residential areas.
- Make no wake – slow down in “Courtesy Speed Zones” around crowds and camping areas.

EDUCATE YOURSELF by obtaining travel maps and regulations from public agencies, planning for your trip, taking recreation skills classes, and knowing how to use and operate your equipment safely.

The Fundamentals...

- Know local laws and regulations.
- Know which areas and routes are open to your type of recreation.
- Make your trip safe. Have the right information, maps, and equipment and know how to use them.
- Make sure the vehicle is compatible with road or trail conditions.
- Make sure your vehicle is mechanically up to task. Be prepared with tools, supplies, spares and a spill kit for trailside repairs.

With a little preparation and education, you can make your next backcountry experience fun and safe while protecting the environment. Always plan for the expected as well as the unexpected. If the opportunity presents itself, take a course or workshop related to your favorite outdoor activity. Universities, community education programs, and outdoor retailers and outfitters often offer classes related to recreational activities. Education and preparation will make your trip easier and more enjoyable.

Preparation

- Obtain a travel map of the area you wish to explore. After selecting a destination, determine which areas are open for your type of use. Select the safest route for your ability, and determine what special rules and regulations may be in effect.
- Contact the land manager to see if there are certain times or specific areas to avoid: times when wildlife are particularly sensitive to disturbance (e.g. nesting or birthing seasons) or when soils are wet and prone to rutting; areas that are particularly sensitive to disturbance because of rare or endangered plants and animals, critical wildlife habitat, or fragile soil or vegetation types; and problem areas that are extremely crowded or where environmental impacts are severe.
- Check the long-term weather forecast for the location you will be visiting. Dress and pack gear accordingly. A storm that you aren't prepared for can be a miserable experience at best and an outright disaster at worst.
- Make a realistic plan and stick to it. Let someone know where you will be and when you will return, even on a day trip. Have an itinerary of your overall trip and leave a copy with family or friends in the event of an emergency.
- Carry local trail maps and area highway maps to get the best idea of your location and proximity to towns, roads, and trails. Better yet, invest in a global positioning system transceiver (GPS) to accompany your maps.
- Be familiar with the different signs that you will see on the trail and proceed accordingly.
- If you are towing a trailer of any sort make sure it is properly maintained and the taillights work.
- Contact the land management agency responsible for managing the area. They have specific information on road and trail conditions, temporary or seasonal closures, special permits, or low-impact driving practices that apply to off-highway vehicle use.
- If the area you wish to reach is on private property, contact the land owner(s) to obtain permission to access their land. Ask about restrictions.
- Check to see if the state requires special licensing or safety certification for the driver(s). Is any special equipment required?
- If needed, get your vehicle serviced or repaired before the trip.
- Become familiar with the different signs you see in the dunes and proceed accordingly. If the area you wish to reach is on private property, contact the land owner(s) to obtain permission to access their land. Ask about restrictions.
- Whips and approved flags may be required on all vehicles in sand dunes at certain locations. Contact your local land manager(s).
- Check tire-pressure prior to any trip and daily on multiple day trips.
- First-time duners should always travel with someone who has experience in the area.

Safety

- Be certain each member/vehicle in your party has a map and knows where the group is headed. Select predetermined rest stops and designate meeting places in case of separation. If you do become separated, stay on the correct trail and let the group find you. Taking different trails could facilitate you becoming lost.
- Don't overextend daylight hours. Plan your schedule to allow being back at the base, campsite, or designated meeting place at a predetermined hour.

- Always travel with a basic first aid kit and survival supplies.
- Be prepared in case of an emergency that requires you to spend the night in the backcountry.
- A cellular phone is a smart, potentially lifesaving link to help in case of an emergency. Before your day's trip, write down local emergency telephone numbers and bring them with you. Keep in mind, however, that you may not have service in the area. In some locations only satellite phones provide service.
- Travel with a partner. Not only is there fun in numbers, but traveling with at least one companion is also essential to your safety. Remember that you're traveling in the backcountry, sometimes into remote areas at great distance from roads and towns. The buddy system is vital to avoiding tragedy in case of emergencies such as a mechanical breakdown or an accident.
- Do not reach the point of mental or physical exhaustion. Have fun, and end the day's trip before you are too tired to travel safely.
- Use of a two-way radio or cellular phone may be very helpful on a trip. Keeping in touch with others in your party is essential and can alert them if you are having a problem.
- Don't drink and drive! Off-highway driving requires every bit of skill and judgment you can command. Drugs and alcohol can lead you and your companions into dangerous situations. If you are on medication, which carries a vehicle/machinery operation warning, let someone else drive.
- Maintain a reasonable distance between you and your fellow OHV drivers. Tailgating can lead to serious injury to you, your vehicle, and others.
- Start every trip with a full fuel tank. Mechanical problems, weather conditions, or other unforeseen problems can turn even a short trip into a long trip.
- A multiple-use road or trail is not a racecourse. Emulating racers you see on television or at sanctioned events can be exciting, but remember, those events are typically held on closed courses and sites monitored for safety. Aside from the potential for creating environmental damage, reckless driving endangers you and others sharing the road or trail.
- Ride at your skill level. Don't try to keep up with others if their riding is outside your ability.
- Keep your group together. Slow down if someone lags behind and make all riders accountable for the person riding behind them. Use two-way radios to communicate and designate lead and clean-up riders.
- It is easy to get separated or lost in the dunes. If this happens, climb the tallest nearby hill and make yourself visible.
- In crowded areas make your camp easy to find by flying a distinctive flag and using unique lighting after dark. Consider use of a GPS.
- GPS can be an invaluable tool in sand dunes. Not only do they help navigation, but they also help you from getting lost and assist in locating you during rescue.
- Avoid running your vehicle completely out of gas. If you are running low, travel to the edge of the dunes and then make your way back to camp. If you do have to walk out, it is much easier and safer on stable ground.
- A midday "white out" or sun glare may cause loss of depth perception. Use goggles with gradient lenses and reduce your speed when such conditions occur.

ATV and Dirt Bike Riding

- Carry only the number of passengers your ATV is designed for or, as local regulations require. Certain areas prohibit double riding; contact your local land manager(s).
- Always wear a helmet, eye protection, long-sleeved shirt, sturdy pants, over-the-ankle boots, and gloves. Specialized riding jerseys and pants can keep you cool yet dry to combat premature fatigue, while a chest protector and knee pads can be cheap insurance against injuries.
- Pace yourself. ATV and dirt bike riding are physically demanding and can be compounded by high altitude, heat or cold. Drink plenty of water before and during the ride to avoid dehydration. Know your limitations and keep your body “fueled-up” at regular intervals throughout the day. Don’t be too proud to take a less challenging route if you feel tired.
- If your ATV or motorcycle is equipped with a headlight, riding with it ON at all times will allow other trail users to see you sooner.
- Be sure youngsters ride the right size ATV or dirt bike. Supervise riders younger than 16.

Side By Sides (or UTVs) and Sand Rails

- Every occupant should be buckled in, even if you are planning on driving slowly.
- Make sure your golf cart is equipped with seat belts and a roll bar.
- Lifted golf carts can be unstable and easy to roll at high speeds. Ride at a reasonable pace.
- Side by sides (UTVs) stock brakes are not designed to stop at high speeds. You may want to consider upgrading your cart’s brakes.
- All side by sides, sand rails and four-wheel drive vehicles should carry a fire extinguisher. They are required in some areas.
- A five-point harness with a crotch belt will hold the lap and shoulder belts down and keep riders in the sand rail.
- Safety features to look for in your sand rail or side by side include suspension that will take rough terrain, seats mounted to the frame of the vehicle, properly installed seatbelts, a sturdy roll cage, a skid plate mounted under the seat, and sand tires mounted on bead lock wheels.

AVOID SENSITIVE AREAS such as meadows, lakeshores, wetlands and streams, unless on designated routes. This protects wildlife habitat and sensitive soils from damage.

The Fundamentals...

- Other sensitive habitats to avoid unless on designated routes include cryptobiotic soils of the desert, and seasonal nesting or breeding areas.
- Avoid disturbing historical, archeological, and paleontological sites.
- Avoid “spooking” livestock and wildlife you encounter and keep your distance.
- Motorized and mechanized vehicles are not allowed in areas designated Wilderness.

With the number of recreationists rapidly growing every year, the repeated and often unintentional misuse of land creates environmental damage especially in sensitive areas. By

using common sense and taking a few precautions, recreationists will ensure that the natural places they frequent will remain available and in good condition for future use.

- Always stay on designated roads and trails or other areas open for use (e.g. sand dunes).
- Leave what you find. Avoid picking wild flowers or taking plants and cultural artifacts. These things are best left in their natural environment.
- Avoid “spooking” livestock (horses, mules, cattle, sheep, llamas) or wildlife you encounter on the trail. Move slowly and keep your voices low. These animals should be treated with prudence. Proceed with caution.
- Remember, designated Wilderness areas are reserved for the most primitive outdoor adventure. These areas were set aside by Congress to protect the natural landscape and the wilderness experience. These designated areas are solely for non-mechanized travel—by foot or horseback. OHVs, snowmobiles, personal watercraft, or mountain bikes are not allowed. Please respect the legacy of these areas and leave it to those traveling by foot or with pack animals.

DO YOUR PART by leaving the area better than you found it, properly disposing of waste, minimizing the use of fire, avoiding the spread of invasive species, restoring degraded areas, and joining a local enthusiast organization.

The Fundamentals

- Leave it better than you found it. Carry a garbage bag and pick up litter left by others.
- If you encounter repairable damage on the road or trail, don’t pass it by. Stop and pick up litter, and repair damage as best you can.
- Properly dispose of garbage, sanitary waste, and gray water.
- Follow practices to avoid spreading invasive species.
- Protect the soundscape by preventing unnecessary noise.
- Join a local enthusiast group. They provide great opportunities to learn more about your sport and local recreation areas, volunteer events, and a community to share your experiences with.

Taking a little extra time and effort to minimize your impacts and mitigate the impacts of those who came before you will keep your favorite recreation spot open and beautiful today and in the future.

Minimize Use of Fire

- Observe all fire restrictions. If you must build a fire use existing fire rings, build a mound fire, or use a fire pan. Keep fire small and allow it to burn only while in use.
 - ◆ The best place to build a campfire is an existing well-maintained fire ring in a suitable campsite.
 - ◆ Using a fire pan is a good a good way to minimize impacts. A fire pan should have three-inch high sides and be placed on rocks or lined with mineral soil so the heat won’t scorch the ground.
 - ◆ Mound fires are a great alternative in situations when there is no fire ring or you can’t carry a fire pan. To build a mound fire collect soil, sand, or gravel from an already disturbed site. Lay a ground cloth on the fire site and then spread soil in a

circular, flat-topped mound at least six inches thick. Thickness of the mound is important to insulate the ground from the heat of the fire. Make sure the circumference of the mound is larger than that of the fire. The ground cloth under the mound allows for quick clean-up of the fire remnants. Replace the soil where you found it.

- For firewood, use only fallen timber. Gather firewood well away from your camp. Do not cut standing trees. There should be enough wood that its removal for a fire is unnoticeable.
- For cooking, use a camp stove. They are always preferable to a campfire in terms of impact on the land.
- Never burn trash in a campfire.
- Let your fire burn down to a fine ash. Ensure your fire is completely extinguished.

Waste Disposal

- Wash 200 feet away from streams and lakes. Use biodegradable soap and scatter strained wash water so it filters through the soil.
- Do not wash in streams and lakes. Detergents, toothpaste and soap harm fish and other aquatic life.
- In areas without toilets, use a portable latrine if possible and pack out your waste.
- In areas where use of a cat hole is necessary, human waste should be disposed of in a shallow hole (6"- 8" deep) at least 200 feet from water sources, campsites, or trails. Cover and disguise the hole with natural materials. Choose sites in un-traveled areas with good organic soils and, if possible, in direct sunlight to aid in decomposition.
- Cat holes in desert environments require holes to be only 4"- 6" deep and the site should be in direct sun to aid in decomposition. Avoid sandy washes where water flows during storms.
- In sand dunes you must pack solid waste out. Sand has no viable microorganisms to break down human solid waste.
- It is recommended to pack out your toilet paper and hygiene products.
- High use areas including river canyons may have other restrictions so check with a land manager.
- Repackage snacks and food in baggies. This reduces weight and amount of trash to carry out.
- Pack out what you pack in.
- Don't litter in the sand dunes! Blowing sand easily covers trash that will reappear at a later date. Broken bottles and sharp objects hidden beneath the sand can damage tires and ruin trips for you and others. Glass bottles are prohibited in some areas.

Invasive Species

Invasive species are non-native plants and animals that out compete native species for valuable resources within a particular habitat. Sometimes referred to as noxious weeds or aquatic nuisance species, these organisms damage the environment, are costly to remove, and once established are almost impossible to eradicate.

- Following a trip, always wash your gear and support vehicle to reduce the spread of invasive species.

- Learn how to identify invasive species in your area and contact land managers if you discover an outbreak.
- Invasive species are one more reason to always travel on trails. Traveling off trails increases your chances of encountering and spreading these species.

Protecting the Soundscape

Natural sounds are essential to the health of the environment. Man-made noise can reduce the quality of the natural experience and can be detrimental to the wildlife in an ecosystem.

- Check with a land manager to determine if sound restrictions exist for your form of recreation.
- Make sure your engine and exhaust system are well tuned. Your vehicle will run smoother and quieter.
- Avoid revving your engine or running at full throttle, both of which create unnecessary noise.
- Four-stroke engines run quieter than two-stroke engines and meet the 96-decibel sound level supported by national OHV enthusiast organizations.
- If you are traveling on or around water, remember sound travels faster on water.
- Respect others' desire for quiet solitude and the sounds of nature. Early morning and late afternoon is often the time when people enjoy peace and tranquility.
- Don't overstay your welcome. When traveling by OHV move around and stay away from camping and picnicking areas.
- When camping, remember that others want to enjoy the sounds of nature. Please refrain from playing radios and music loudly.
- Be aware that continued exposure to unnatural noise could cause chronic stress to wildlife. Take appropriate measures to reduce travel in areas inhabited by wildlife.

Minimum Impact Camping

Often our travels with our OHVs are coupled with backcountry camping. An overnighter or extended camping trip requires proper preparation. Here are some helpful tips to assist you in camping with minimum impact.

Respect others who camp

- Choose camping supplies in neutral colors that blend with the natural surroundings and are less intrusive to other campers' experiences.
- Be respectful of those camping in the same general area. Keep noise to a minimum, especially in the early morning and evening hours.
- Be considerate of other campers' privacy; keep your distance and avoid traveling through their campsites.

Plan Your Camping Trip

- Plan for small groups, especially in remote backcountry areas. Smaller campsites are easier to find.
- Prepare a list of all the required camping gear for your trip and use it to pack.
- Talk to land managers about the location of established campsites in backcountry areas to help plan your travel itinerary.

Campsite Selection

- Whenever possible, use existing campsites. Camp on durable surfaces and set up tents and cooking areas on a non-vegetated area. Take the time to search for a suitable campsite in areas without designated sites.
- Select a campsite approximately 200 feet off trail and at least 200 feet from any water resource. Camp near boulders or vegetation to screen you from other campers.
- Avoid camping near historical, archeological, or paleontological sites or in areas of sensitive or critical habitat.