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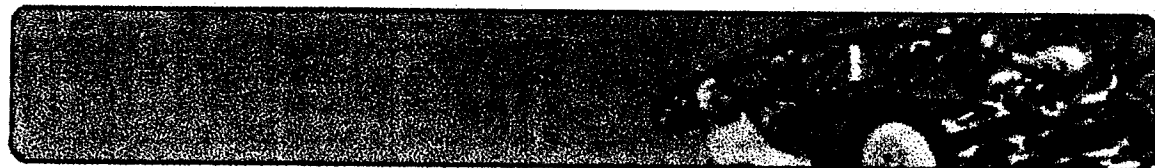
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OFF-HIGHWAY VEHICLES



Home

About Us

PCL Site

Contribute

Board of Trustees

PCL/PCLF Staff

PCLF Projects

Publications

Contact Us

Site Map

- Introduction
- Driving an OHV Always Affects the Landscape
- OHVs Harm Animals and Habitats
- OHVs Impact Archaeological Treasures
- Funding of OHV Programs
- OHV Trespass Runs Rampant
- Trail Closures and Maintenance
- Off-Roaders Come into Conflict with Other Users
- Lack of Law Enforcement
- Off-Highway Vehicles Degrade Air and Water Quality
- Snowmobiles and the Environment

INTRODUCTION

Off highway vehicle (OHV) use poses a dangerous threat to California's environment. As more and more enthusiasts take bigger, faster, stronger, and more destructive machines off road, our environment pays an increasingly heavy toll. At PCLF, we are working hard to prevent further destruction by seeking to develop and implement environmentally sustainable off-highway vehicle policies in California.

Off-highway vehicles rip up soils, rocks, sensitive habitat, and virtually any other terrain they cross, drastically increasing erosion and creating long-term environmental damage. In many areas around the state, OHV use has left the landscape practically barren. In addition to damaging the land, increasing OHV use is also taking a particularly heavy toll on air and water resources in California. Many OHV's are equipped with engines that emit up to one hundred percent more than the average amount of vehicle pollutants, and OHV use directly contributes tens of thousands of tons of water-clogging sediments each year.

In order to address the increasing threats posed by off-highway vehicles to California's environment, Planning and Conservation League Foundation is working with a coalition of environmental groups, OHV enthusiasts, policymakers, law enforcement personnel, and others to work towards solutions that minimize environmental damage from OHVs. Through our participation in the OHV Stakeholder's process, we are playing a key role in the development and implementation of new, consensus-based legislation that will result in a more environmentally sustainable program addressing off-highway vehicle use in California.

We are also currently undertaking a study in order to identify areas around the state that are suitable for acquisition as buffer zones around OHV recreation areas. As off-highway vehicle use increases, buffer zones are becoming increasingly important tools to help protect habitat and other environmentally sensitive areas from damage, and to head-off land use conflicts between OHV use and other incompatible land uses.

As we continue our work here at PCLF, we will keep you informed of these and other efforts to minimize damage from OHVs in California.

For additional information, please contact Virgil Welch.

[Back to top >>](#)

DRIVING AN OHV ALWAYS AFFECTS THE LANDSCAPE



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Driving an off-road vehicle has severe consequences for the surrounding landscape. There is no way to drive a vehicle across an unpaved road without in some ways adversely affecting the surrounding landscape. Soils and rocks are easily ripped up by vehicles, causing erosion, which leads to notches and gullies in the surface of the land. These gullies can grow as deep as six feet and take several years to heal. In many cases the soil has been eroded too deeply to heal properly. When hills are eroded with gullies, water carries soils away at a highly increased rate, washing away plants and causing the gullies to expand. In more heavily used areas, large gullies have caused thousands of tons of soil and silt to be washed downstream after one winter season.

Many illegal and unauthorized trails and dirt roads have been made which are not necessary for general travel or access. These areas will remain void of vegetation for years due to compaction and erosion of topsoil. In heavily used areas like Jawbone Canyon in Kern County, much plant cover has been stripped away and huge ruts have been carved along hills where off-road vehicles have been driven. In some cases in this area, all but the largest shrubs have disappeared from the hillsides. After a heavy rainfall, the plants at the bottom of a slope can also be completely covered from the mud sliding down the hills overhead. This not only kills the current plants, but also it is impossible for young plants to grow if the seeds have been buried below several feet of mud. Thus, an entire length of hillside could potentially be wiped out as a result of one off road enthusiast's reckless behavior.

In an attempt to be more environmentally responsible, the ORV industry came up with a campaign to educate ORV recreationists of the methods to use the land responsibly. This campaign is known as "Tread Lightly", in which off-road vehicle users are encouraged to cause as little impact as possible. Yet despite the efforts of the "Tread Lightly" campaign, damage still occurs, whether a vehicle drives over established dirt roads or goes completely off the trail. For example, it has been documented that a motorcycle driven 20 miles over flat desert can displace anywhere from 15 to 66 tons of soil, and an average four-wheel drive vehicle can move up to 300 tons of soil with just one pass over a steep slope.

The damaging effects of off-road vehicle use are clear. There are numerous examples:

- Tracks made in the 1940's by General Patton's army maneuvers are still visible in the desert.
- In the Dove Springs Canyon, more than 1,000 acres have been severely damaged and nearly 500 acres are now completely barren.
- Ruts and gouges from off-road vehicles are still highly visible, although the area has been closed since the 1970's.
- In the Lake Tahoe Basin, there are over 400 miles of roads, which are both legally and illegally created routes for vehicles.
- In addition, 200 miles of off-road vehicle trails cover the basin. Tons of sediment has been washing into Lake Tahoe as a result of severe erosion in recent years, which is gradually changing the color of the lake.
- In Clear Creek, about 160,000 tons of soil are lost each year, which is 45% above natural erosion rates in that area. A tremendous total of 38,000 cubic yards per square mile of sediment is eroded into Clear Creek each year. This erosion is so pervasive that it is affecting neighboring citizens, who must risk the hazards of asbestos in the air during the dry season.

[Back to top >>](#)

OHVS HARM ANIMALS AND HABITATS

Off-roading has had a visible impact upon animal populations in the areas where there is heavy ORV use. Just as ORVs adversely affect the landscape, they also affect the animals that inhabit the area. ORV roads, which cross through certain animals' territories, can fragment the animals' living range, leading to a decrease in the population size and a genetic bottleneck. Several different species of desert animals cross specific routes, but when the routes are driven over and destroyed by a passing ORV, the animal's territory is diminished.

Many endangered species live in areas that are commonly used ORV terrain, and even if people stay on designated trails, they can still accidentally run over burrowing animals. The flat-tailed horned lizard (*Phrynosoma mcallii*), an endangered species in the desert, will freeze when it senses danger, making it more vulnerable to being hit by a passing vehicle. This lizard will commonly burrow underground and can get crushed by a vehicle driving overhead. In some cases, animals are purposefully run over, maimed, shot, and taken from their land. Animals are especially vulnerable to capture as pets if they are rare and appear exotic.

By just driving through an animal's territory, ORVs affect the health and living conditions of many animals. Animals are disturbed by the noise, they are displaced by the lack of terrain, and they are limited in available food as the plants they eat are destroyed. In the Algodones Dunes in Imperial Valley, many areas of high ORV use are completely barren of any plants or animals. The desert tortoise (*Gopherus agassizii*) is an animal that is tremendously affected by ORV traffic. On a study plot in Fremont Valley, 40% of tortoises found dead were killed by gunshot, or were run over by vehicles either traveling cross-country or on trails. As of 1980, off-road vehicles ran through one-quarter of all tortoise habitat and more than two-thirds of desert land with high densities of tortoises. Even if someone on an ORV does not directly run over a

tortoise, he or she can destroy its sensitive ecosystem as it devastates necessary vegetation, habitat, and ruins soils.

In the 1800's, the population of bighorn sheep (*Ovis Canadensis cremnobates*) began to decline with hunting. Today, less than 500 sheep still live in the area between Palm Springs and the Mexican border. Bighorn sheep have been known to abandon areas after human disturbance.

The Arroyo toad (*Bufo californicus*) is a third species whose life is threatened as motorcycles and four-wheelers destroy its territory. The Arroyo toad dwells in shallow pools and sandy banks in the desert. Currently, about 75% of its habitat has already been destroyed by development, dams, water diversion, and agriculture, in addition to ORV use. The toad's habitat is quickly demolished by traffic as it passes through breeding pools at sites where roads cross streams. In 1991, a fence protecting a toad breeding pool was cut, allowing a vehicle to destroy a sandbar that protected at least 12,000 tadpoles. Since then, the US Forest Service has prohibited off-road access in areas where the Arroyo toad lives and breeds, and several other steps have been taken to ensure the survival of the toad population.

[Back to top >>](#)

OHVS IMPACT ARCHAEOLOGICAL TREASURES

In the deserts of California lay ancient, rare geoglyphs, which are huge spiritual designs carved into the ground by indigenous people and can only be seen from the sky. The designs were formed thousands of years ago by the removal of dirt from the desert floor or by laying rocks down to form the outline of the shape. The shapes on the ground vary from horses, serpents, or other animals to mazes, rings, and human figures. One of the oldest geoglyphs dates back over 2,600 years, and most of them are ancient. There are also many petroglyphs and other remains of ancient people painted throughout the caves in the deserts of California. Because many of these carvings are difficult to see from the ground, they are easily run over by off-road vehicles. Many of these geoglyphs have no barriers around them to protect them from any vehicles passing over which disturb the sites, and in fact there are a few roads that pass directly through some sites. When fences are installed, they are often destroyed or ignored by ORV riders.

According to BLM reports, "Fragile desert pavement surfaces have been cracked, causing the surface archaeology to be diminished or lost. In some instances, off-road vehicles have provided easy access for illegal artifact hunting, vandalism, theft of rock art panels, and even grave robbing" (qtd. Shore, Off-Road to Ruin).

One of the main problems in protecting the geoglyphs is the fact that law enforcement is very low in the remote areas where the geoglyphs are located. If the fences are being bypassed or destroyed by riders, there should be rangers to enforce the boundaries, yet there are simply not enough officers available to protect these sites. The BLM is attempting to recruit volunteers and also protect a few of the rare sites with new monitoring, protection, and planning programs. Yet unless further measures are taken to protect these extraordinary works of art, they will be lost. Once these fragile geoglyph carvings have been driven over and destroyed, there will be no way to replace the cultural heritage they represent. They are rare archaeological treasures, yet they are quickly being destroyed by carelessness and ignorance.

[Back to top >>](#)

FUNDING OF OHV PROGRAMS


A common misnomer is that the "Green Sticker" program funds California's entire ORV program. After paying a user fee of \$20 for two years per legally registered but non-street legal vehicle, riders receive a green identification sticker for the vehicle, hence the name. Most ORV riders believe that these fees fund the entire ORV program in the state of California, but they only actually contribute 6.8% of the revenue to the program. The main bulk of ORV funding comes from the State Fuel Tax, which was based on a study conducted in 1990 by the CalTrans-Department of Parks and Recreation. The purpose of the study was to determine how many vehicles were used off-road in California and also the amount of fuel used by those vehicles. Those numbers would be the basis for determining the amount of funding available for ORV programs. Yet, because there are many more unregistered vehicles than were originally claimed, the Fuel Tax Study was inaccurate and allowed more funding to be available to ORV programs. This funding is available through transfers into the Conservation and Enforcement Service Account (CESA), which is used to fund conservation and enforcement. CalTrans includes the fuel taxes attributable to unregistered ORVs in their transfers into the CESA, resulting in huge overpayments to the fund. By including unregistered vehicles in determining the amount of fuel tax transfers, the ORV Division allows illegal ORV use to subsidize the ORV program.

In California, the ORV system includes eight State Vehicular Recreation Areas (SVRA's), which equals about 84,000 acres and 450 miles of designated trails. SVRA's are essentially state parks for off-road vehicles. There are also 61 Forest Service areas and 27 Bureau of Land Management (BLM) riding areas, totaling millions of acres. Additionally, there are 19 National Forests in California that offer 20 million acres and 4,200 miles of trails to off-roaders. Although state grants can enable these federal grantees to reduce

environmental impacts by better management, there is strong evidence that resources on federal lands continue to suffer much environmental degradation and damage. The ORV Division can evade stricter environmental policies of state-owned ORV areas if it gives grant money to Federal Agencies, selling out the environmental issues and giving up the responsibility. Together, the U.S. Forest Service and the BLM have received over 80% of all state grants, equaling over \$147 million. Although state law requires that up to 50% of the ORV Division's annual budget can be awarded as grants to cities, counties, and other agencies, only a small portion actually goes to them.

[Back to top >>](#)

OHV TRESPASS RUNS RAMPANT

 As ORV riders get bored with the old terrain, they want to explore new territory, so they frequently roam into regions that are closed off to them. New trails spur off into completely closed wilderness regions, private property, and into areas designated for hikers only. Trespassing into closed areas, private property, and wilderness areas is a common against off-road vehicle riders. Trails are fenced off or marked with signs showing that the area is off-limits, yet these notices are still ignored. Although signs are posted when areas are closed, they are often removed, vandalized, or ignored, and off-roaders venture into the closed area anyway, causing the destruction of many sensitive species and habitats. There is usually little to no law enforcement in remote areas, so there are few consequences for the ORV rider who ventures into closed areas.

Although wilderness areas are completely off-limits to ORV use, they are often trespassed upon. Wilderness areas are quickly destroyed by off-road vehicle traffic. Despite the use of signs and closed trails marked by fences, wilderness areas continuously suffer due to the proliferation of ORV use. In 1998, the California Wilderness Coalition conducted a comprehensive survey to discover that 675,449 acres of wilderness have been lost and degraded in the past 20 years alone. In August 1999, a blaze broke out near Willow Creek, burning 63,000 acres, several homes, and dozens of vehicles. This fire was "strongly suspected to be from OHV riders leaving an unattended campfire" (qtd. Shore, *Off-Road to Ruin*). Even when the area was very sensitive after the fire, ORV riders were returning to the area to explore the newly exposed land.

[Back to top >>](#)

TRAIL CLOSURES AND MAINTENENCE

One of the largest debates between environmentalists and ORV advocates revolves around the closure of trails. ORV riders want trails to remain open at all times unless they are specifically marked as closed; environmentalists want a standard practice of trail closure unless the trail is designated open. The problem with keeping trails open unless marked as "Closed" is the simple fact that a rider can bypass a sign, or even remove it, if he or she feels the urge to do so. Whether an area is open or remains closed can be strongly influenced by the demands of ORV users. For example, Rock Creek in El Dorado County was closed in order to protect the dwindling Pacific deer herd. Although many studies have already been done which document the impacts of ORVs on wildlife, the area was opened again so that the effects of ORVs in the critical habitat could be studied, following many demands by dirt bikers for the area to remain open. Trails are also closed for maintenance. Although many California state grants include funds for road or trail maintenance to reduce watershed and wildlife impacts, the public has no means of monitoring if and when these closures take place.

Trails can be closed if they need work or if they become too degraded for use any longer. After too much erosion, huge ruts can form on the trails. In order to avoid these ruts, ORV riders will ride around them, thus expanding the size of the trail, damaging the nearby plants, and adding to the levels of erosion along the trail. When a rut or gully is formed on a trail, there are a few options to attempt to repair the damage. Most options offer short-term, quick fixes. For example, the standard Forest Service practice for trail maintenance is to fill the ruts with dirt taken from another nearby trail. While this temporarily fixes the problem, the dirt is far less stable than the original soil. As soon as an ORV runs over the trail again, the filler dirt is eroded away, and the trail can revert to its original condition within one season of ORV use. And once the trail has been eroded and filled, it grows much wider because the supporting vegetation has been damaged. If this trail is downhill toward a stream, the dirt that is eroded flows directly into the stream, causing extra sedimentation and pollution.

Some types of trail maintenance practices employed by the BLM and the Forest Service can actually cause more erosion than if nothing were to be done at all. According to Howard Wilshier, retired USGS geologist, former OHV commissioner, and expert on the effects of ORVs on soils, the practices of "grooming" (i.e., filling an eroded trail with dirt from another trail) are actually extremely damaging to the landscape. He points out that after a new trail is formed, the rate of erosion is at a maximum, but as the trail is used, the rates of erosion decline rapidly until after a period, quasi-equilibrium is reached, especially if ruts have formed. Although this is much higher than if the trail was never built at all, it is still much lower than initial rates of erosion. When a trail is then "groomed", the action pushes the erosion back to the peak again. Thus, trail maintenance not only increases erosion rates and levels of soil loss, but it also increases water

and air pollution.

Back to top >>

OFF-ROADERS COME INTO CONFLICT WITH OTHER USERS

There are millions of acres of land that is open and available to ORV use throughout California. California contains 100,000 miles of roads and trails for off-road vehicle recreation, including 44,000 miles of vehicle routes in California's national forests. In fact, the amount of public land open to off-road use in California is double that of any other state. Still, conflicts occur at high rates as more people try to find the perfect wilderness experience. With increased population rates and massive urban sprawl throughout California, it is obvious that certain areas are going to stop being accessible to wilderness users. Conflicts between ORV riders and other people still occur at an outstanding rate. People complain about the way they ORVs up the land, the noise, and the exhaust they create. When ORVs encroach on land that is closed to their use, they increasingly add to the risk of bodily harm to an innocent party. As drivers pass over trails, they tear up the ground, leaving loose rocks and huge ruts in the trails. Hikers, birders, fishermen, horseback riders, and all other types of people in the wilderness are distracted and disturbed by ORV traffic. One of the most pervasive and annoying conflicts between ORV riders and other outdoor enthusiasts is noise. In a quiet forest, the noise from the average motorcycle can be heard from up to 7,000 feet away. The louder engines can be heard from over 11,500 feet, which is a distance of over two miles.

There are other health hazards carried with off-roading besides the risks of getting run over. An asbestos Superfund site is located within the Clear Creek ORV area. Although they are given adequate warning to avoid the area because of the lethal dust, off-road vehicle riders still enter the area and kick up dust that is laden with asbestos when riding through this terrain. This is a threat to the riders' health and also to the health of adjacent landowners, who have threatened to sue over the potential public health hazard.

ORV parks are usually located in close proximity to areas that other outdoor enthusiasts also frequent. In multi-use areas, conflicts almost certainly occur. When sharing the same trails, off-road vehicle riders sometimes come very close to hitting other people who share the same trails. Many hikers, mountain bicyclists, and equestrians have encountered near-miss situations on multi-use trails when faced by off-road vehicle riders, whether they are riding responsibly or not. In many popular ORV areas, off-roaders regularly dump trash into the environment, race across private property, and trample the chaparral. And at the Algodones Dunes near El Centro, all family recreation has been pushed out of the area due to a proliferation of drug and alcohol use in the area.

Conflicts between ORV riders and other outdoor enthusiasts are bound to occur, especially in popular areas that are shared by many different types of people. Yet the conflicts can be curtailed if trails are designated and clearly mapped for all users. Additionally, all users must respect the boundaries that are set and also respect the right of other people to be able to enjoy the areas, too.

Back to top >>

LACK OF LAW ENFORCEMENT

Although millions of dollars in grants have been given to ORV areas over the years, law enforcement is still very inadequate in ORV ranges. More money needs to be designated to law enforcement funds. Together, only a handful of officers and rangers patrol over 17 million acres of land. If ORV areas are to be expected to function properly, they must be maintained and all users should be aware of the boundaries, the rules, and the consequences of breaking these codes.

There is simply not enough law enforcement to make sure that off-roaders stay in designated areas. Yet, even when off-roaders are cited for driving into restricted or closed areas, the fines are fairly low: the fine for driving through a National Forest Wilderness area is \$150; and while it is also prohibited to operate any vehicles in a manner which damages or unreasonably disturbs the land, wildlife, or vegetation resources, the fine for that action is \$250. In addition, only certain officers are even permitted to give citations or make arrests. In National Forests, only Law Enforcement Officers (LEOs) and Forest Protection Officers (FPOs) can issue citations. On BLM land, only LEOs can issue warnings, and there are only about 60 LEOs throughout the state. With this rampant lawlessness, it is no wonder why off-roaders can be so destructive.

Rarely are citations even given for resource damage, although most of the environmental damage is caused by illegal user-created trails and intrusions into wilderness areas. It is common practice for off-roaders leave the designated routes and to drive through closed areas, wilderness habitats or private property. When an ORV driver leaves the trail, the damage to the landscape is tenfold. Hills are quickly eroded, and tracks across the desert floor can take years to heal. During 1998 and 1999, the U.S. Forest Service only issued 64 citations for closure violations. In 1999, the Bureau of Land Management only issued 10 citations in the entire state of California. Most citations that are administered on federal lands involve registration, helmet, or spark arrester violations and have nothing to do with environmental impacts, even though the majority of reported violations involve land use issues.

Many areas have been destroyed and overrun by off-roaders mainly as a result of a lack of law enforcement. One area is the remote Knoxville Recreation Area, located at the junction of Napa and Lake counties. The area is practically not monitored at all, so random target shooting, unregulated motorcycle riding, and massive dumping of garbage is common practice. Bullet casings litter the ground along with empty beer bottles, old tires, and general garbage. Local citizens avoid the area because it is well known for its chaos and strong element of danger. Another area that completely falls short of necessary law enforcement strength is at the Algodones Dunes near El Centro. The BLM office in El Centro usually has a full-time staff of 12 officers. But during the summer of 2000, there were only three rangers and one chief ranger who were all responsible for patrolling the Algodones Dunes area and also the entire 1.2 million acres of desert managed by the BLM office. This is a region that can be visited by up to 100,000 people in the park on holiday weekends. Lawlessness in this area has escalated to the point of near-riot conditions. Drug and alcohol use is rampant. Officers have been threatened and run over by dune buggies. During Halloween 2000, three people were killed in accidents and several others were severely injured.

The lack of law enforcement can bring some tragic repercussions, as was evident at the Algodones Dunes on Halloween, 2000. Because of a severe shortage of law enforcement officials, three fatalities and three cases of paralysis occurred over the weekend. The BLM law enforcement sector had become dreadfully understaffed: in 2000, the BLM spent less than half of their authorized funds on law enforcement, filling only 29 out of 46 enforcement slots in the California Desert District. The force lacked basic necessities such as crowd control training, riot batons, gas masks, and even a reliable radio system, and several vehicles that were originally purchased for law enforcement have since been swapped to other uses. In fact, law enforcement had been low in the area prior to that weekend. In 1999, the BLM reported nearly 2,000 incidents in the district, including shooting of firearms, exploding numerous firearms, incendiary devices, assaults, and many other offences.

With all the problems that occur as a result of a lack of law enforcement, it is a surprise that so little has been done to assuage the troubles. The basic problem is a lack of funding, and until that is solved, these transgressions will continue to occur with regularity in ORV lands. Obviously, more officers and rangers need to be hired who can carry the authority to hand out citations, patrol remote areas, and make their presence seen and felt.

[Back to top >>](#)

OFF-HIGHWAY VEHICLES DEGRADE AIR AND WATER QUALITY

Besides massive amounts of erosion, tearing up rocks, soil, plants, and anything else that may lay in their way, ORVs have some nasty environmental effects that do not show their faces immediately. The effects of driving an ORV have tremendous repercussions for the environment. By dumping fuel, antifreeze, oil, and other chemicals into the air and water, ORVs are changing the environment faster than we can measure immediately measure. The long-term damage is incredible. Yet, the effects of ORV fuel, oil, and emissions in the air and in the water are still largely ignored in the off-road community because they are quantitatively harder to spot than damage inflicted directly upon the land.

One of the worst consequences of driving on unsurfaced roads is the fact that erosion, which is initiated by ORVs, leads directly to water pollution. Not only do off-road vehicles release large amounts of smog into the air, they also cause massive erosion as they drive along trails, which dislodges soil and allows it to be transported into the water and block streams by a buildup of sediment. 61% of California's water originates in Sierra Nevada watersheds, yet watershed damage is one of the main consequences of off-road use as sediment from dirt roads and ORV trails fills creeks and streams. Dirt roads and motorcycle trails in the Rock Creek OHV area alone produce over 1,693 tons of sediment a year, 435 tons of which go directly into nearby streams. Riparian and aquatic areas are the most damaged ecosystems in the Sierras and also the most fragile. Off-road motorcycles and other ORVs like snowmobiles and jet skis run on two-stroke engines. The emissions of one two-stroke off-road motorcycle or ATV equal the emissions of 118 passenger cars on a per-mile basis. Only 10 models of off-road vehicles have been certified to meet California's new air quality standards, yet the vehicles that do not pass regulations continue to be operated illegally.

The engines employed by ORVs spill unused fuel directly into the environment. Off-road motorcycles and ATVs use two- and four-stroke gasoline engines, which allow up to 30% of their unburned fuel and oil to pass directly from the engines, into the environment. Two-stroke engines are responsible for 90% of the 34 tons of smog precursors released each day in California by off-road motorcycles and ATVs. Jet skis also use two-stroke engines and dump as much as one-third of their unburned fuel directly into the water as they travel. If a jet ski flips over in the water, it can easily dump the contents of its oil and gasoline tanks, spilling toxic pollutants into the environment. The effects of jet skis are so obvious that they were recently banned from use in Lake Tahoe in an attempt to keep the water blue and to prevent excess pollution.

It is obvious that ORVs affect air and water quality in profound ways. In order for things to improve, changes need to take place on several levels. Rangers and other law enforcement need to take a more prominent role in ORV recreation areas to make sure that riders stay in designated areas. ORV riders need to clearly understand the repercussions of their actions. Funding needs to restore severely damaged and eroded areas.

[Back to top >>](#)

SNOWMOBILES AND THE ENVIRONMENT

The last thing most people want to hear on a quiet, snowy winter's day is the sound of engines roaring. Yet that is the sound that echoes through the forest as snowmobilers take to the slopes. As the snowmobiles flourish, cross-country skiers, sledders, downhill skiers, and other winter enthusiasts must find new areas. Human inhabitants of the winter terrain are annoyed by the onset of snowmobile traffic, and the animal populations who live in these winter regions have been forced out of their natural winter rangeland and hibernation areas. For example, recently it was decided that in Rock Creek, a large portion of previously closed areas, which included the winter range of the declining Pacific deer herd, would be opened again. In past years, this critical portion of the winter range had been closed to protect the deer, which must subsist largely on stored fat from summer foraging. Not only do they disturb wildlife in secluded areas, they also dump 25 to 30% of their fuel directly into the air and water, and can cause irreparable damage to fragile habitats. If a snowmobile turns over, it can dump the contents of its gasoline and oil directly into the snow, creating a toxic environment. Additionally, highly used snowmobile paths can still carve ruts into the earth below as the snow melts and the ground lays exposed. Snowmobiling represent a fraction of outdoor winter recreation activities, but the use of these vehicles in close proximity to other recreationists like skiers and snowshoers has the potential for causing serious accidents, disturbs the silence of the snow, and leaves deep tracks across popular snowmobile routes.

Popular paths can have 6-inch ruts formed in the soil from repeated passes by snowmobiles. Also, when snowmobiles venture off marked trails, they can destroy meadows, trees, creeks, and damage property. The recent popularity of commercial snowmobiling has also increased the frequency of conflicts between users. While commercial snowmobile companies use certain routes for their tours, people who own their snowmobiles are forced to find new trails and other options. They move into terrain that was originally used by cross-country skiers, sledders, or snowshoers. Often times, wilderness areas do not have signs specifically indicating that areas are closed to snowmobile use, so snowmobile riders will drive into areas that are off-limits to all other forms of motorized vehicles.

Snow grooming is the process of evenly dispersing the snow cover to make routes for snowmobiles. Even though federal and state law requires that all areas that are groomed must be evaluated for environmental impacts, environmental analysis has yet to be done. All the while, the practice of snow grooming continues so that snowmobilers can have a smoother, faster ride, the impacts of which remain unknown.