

## What Can I Do?



- ◆ Travel responsibly on designated roads and trails.
- ◆ Minimize wheel spin. On slick trails, moderate the throttle and use the clutch to gain maximum traction with minimum tailspin.
- ◆ On switchbacks, avoid roosting around the apex of the turn when climbing or brake-sliding during descent, both of which gouge the trail.
- ◆ Switchbacks are designed to maintain the stability of a trail. Cutting them destroys their integrity.
- ◆ Drive over, not around obstacles to avoid widening the trail.
- ◆ Cross streams only at designated fording points, where the trail crosses the stream.
- ◆ Avoid sensitive areas such as meadows, wetlands, and streams. Other sensitive habitats to avoid unless on designated routes include seasonal nesting or breeding areas.
- ◆ Do not disturb historical, archeological, or paleontological sites.
- ◆ Avoid “spooking” livestock and wildlife you encounter and keep your distance.
- ◆ Before and after a ride, wash your bike or vehicle to reduce the spread of invasive species.

Tips from Tread Lightly! <http://www.treadlightly.org/>

## Off-Road Vehicle Use Can Cause Nonpoint Source Pollution

The majority of pollution in water today comes from nonpoint source pollution. Pipes, factories, mines, and other pollution sources that are easily identifiable are considered point sources. Nonpoint source pollution is usually carried into waterbodies through runoff that picks up pollution on its way to streams and lakes. Off-road vehicle use can contribute to nonpoint source pollution. Off-road vehicle use can cause erosion. The sediment disturbed from these paths and stream crossings can get washed into waterways. Excess sediment:

- Blocks light needed by aquatic plants
- Covers and suffocates the insects and small aquatic animals living in the streambed
- Disturbs fish spawning areas
- Changes the equilibrium of the stream
- Can lead to unstable streambanks and damage to surrounding riparian vegetation.

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## Stay On Designated Trails



### How Off-Road Vehicle Use Impacts The Environment



*Honor and protect all life, land, and traditions on the Morongo Indian Reservation through unwavering environmental stewardship and community engagement.*



## Off-Road Vehicles Use

At Morongo and in many other surrounding areas, off-roading with all-terrain vehicles (ATVs) and dirt bikes is a popular means of recreation. The beauty and open space of the canyons makes it a very attractive place to want to ride in. While there are many roads and trails in these areas, some people like to head off of these and make their own paths. While this might be exciting, off-roading can cause damage to the environment.

Not only is there obvious damage to the ground, many other impacts may be happening:

- ◆ Plants are removed and soil compaction occurs
- ◆ Wildlife is disrupted
- ◆ Erosion occurs
- ◆ New sources of pollution are introduced to waterways
- ◆ Invasive species may be spread
- ◆ Other resources can be destroyed.

## Environmental Impacts

**Physical effects**—The act of driving beyond designated trails causes physical impacts to the structure of the ground itself.

- Tires crush and remove plants that protect the soil surface. When the plants are gone, the roots no longer help to hold the soil together.
- The unprotected, damaged soil is more likely to be affected by erosion (leading to ruts, gullies, and unstable trails).
- Soil can also become compacted. This is when it gets pushed together so tightly, water and air can no longer get to the roots of plants.
- New trails may put archeological, cultural, or historic resources at risk. These sensitive sites may not be known to the rider and artifacts can be damaged.

**Wildlife**—Animals can be hurt directly and indirectly.

- Wildlife are at risk of being hit or run over
- Breeding and nesting habitat can be damaged.
- Creation of new, open trails can increase exposure to predators
- Plants used for food are removed.
- Noise and increased human presence can cause disturbance to wildlife and affect behavior patterns like mating.

**Risks to people**—Off-roading can be more dangerous than staying on established trails and lead to an increased chance of accidents.

- The terrain can be hazardous.
- New paths can lead to unstable trails.

- Visibility is not as good.

**Invasive species introduction**—invasive species can be transported to new places on the wheels and underside of vehicles.

- Seeds of invasive species don't take much to get established and grow well in the disturbance created by ATVs and bikes.
- Invasive species outcompete native plants and may not be a good food source for wildlife.

### Other issues

- The risk of fire increase in remote, dry areas when people drive off road.
- Trash and litter are able to be transported to pristine areas.
- Once one person goes off road, others are more likely to try it. This adds up to multiple paths disturbing a much larger area.
- Pollutants, such as gas and oil, can get into the land and water from accidents or vehicles which have not been properly maintained.



*Hillside damage Hathaway Canyon, showing both an abandoned, rutted trail (left) and a new trail (right).*