

## 46. Off Road Vehicles

**Overview:** Off road vehicle use has increased greatly in recent years and is creating environmental concerns in our delicate desert.

**Objective:** Participants will get an overview of ORV issues and perform a simple related experiment at the track box with model vehicles, comparing and analyzing tracks left by different tire treads.

**Time Needed:** approximately 45 minutes

**Group Size:** Small group or whole class

**Age Appropriateness:** any

**Site:** Track box or any smooth sandy area.

**Background Information:** Dirt bikes, four-wheeled all-terrain vehicles, and motorcycles are used frequently to enjoy remote areas in the Yuma region. If used improperly or unwisely, they threaten the integrity of our desert ecosystem. They physically scar the landscape when riders leave established routes or trails and gouge new routes. The delicate desert does not easily recover from this abuse and scars can last for decades and destroy plants and animal habitats. Once the “skin” of the desert floor is broken it also lends itself more easily to wind and water erosion. Off road vehicles also spread weed seeds, causing undesirable plants to take root and compete with native vegetation. Indiscriminate use will lead more restrictions and less access to wilderness areas.

**Materials:** Model ORV's with a variety of tire treads.

**Preparation:** Smooth an area of the track box and have ORV models on hand.

**Pre Activity:** Prior to coming to the Garden, students could research the outcomes when the desert floor is disturbed by ORVs.

**Procedure:**

1. Smooth and level an area of the track box
2. Gently pull each of the ORV models across the sand
3. Examine the tracks left by each vehicle
4. Compare and discuss the differences in tracks
5. Discuss the need for appropriate equipment when driving off road and how the tracks left could effect the fragile desert floor.

6. Pull only one of the models across the sand
7. Pull it again along side the first set of tracks with a person added extra downward force.
8. Compare the two sets of tracks with the same tires but difference force.
9. Discuss any differences seen with extra weight and the implications on the habitat.

**Modifications:** Students could try other vehicles and other variables. This experiment could also be repeated on soil.

**Extensions:** Web sites and books could be researched for pictures of examples of damaged environments.

A tire dealer could be contacted to demonstrate the effect of different treads on tires.

A class debate could be held with students arguing the points of view of the environmentalists and the recreationalists.

### Reference List:

<http://www.nps.gov/asis/orv.htm>

Article including some rules and regulations

<http://www.sierraclub.org/policy/conservation/offroad.asp>

Environmentalist point of view

[http://www.michigan.gov/dnr/0,1607,7-153-10365\\_15070-73699--,00.html](http://www.michigan.gov/dnr/0,1607,7-153-10365_15070-73699--,00.html)

Rules and Regulations

<http://www.wilderness.org/WhereWeWork/Idaho/orv.cfm?TopLevel=Orv>

Article about ORV impact

**Time of Year:** any time