

## **Vehicles aid in weed seed dispersal**

Summary: A new Montana State University Extension publication describes field studies that measure the extent to which vehicles pick up and disperse weed seeds. This research showed that vehicles can pick up large numbers of seeds, especially when driven off-trail and under wet conditions.

BOZEMAN – Noxious weeds are often found growing along roads and trails and vehicles have long been suspected of picking up weed seeds and dispersing them to new locations. A new Montana State University Extension publication describes field studies conducted by the university's weed ecology and management group that showed the extent to which vehicles pick up and disperse seeds.

Three separate field studies quantified the number of seeds gained and lost by vehicles over varying distances. The first study determined how many seeds all-terrain vehicles pick up driving on and off-trail in Montana. The second study examined the number of seeds gained by military vehicles (Humvees, trucks, ATVs and tanks) in military training areas in Montana and Idaho. The final study determined how long seeds stay attached to a truck before they are dispersed when driven along paved and unpaved roads under both wet and dry conditions.

In the first study, ATVs collected a large number of seeds in both spring and fall when driven on and off-trail. Not surprisingly, ATVs picked up more seeds when driven off-trail than on-trail. In the fall, up to 5,500 seeds per mile were picked up off-trail compared to about 400 seeds per mile on-trail. The number of seeds picked up in spring was much lower. The study at the military sites determined that many times more seeds were collected by vehicles driven under wet conditions than under dry conditions and tracked vehicles picked up more seeds than wheeled vehicles. The final study found that up to 99 percent of seeds stayed attached to a truck after traveling 160 miles under dry conditions, but seed retention was much lower under wet conditions, where seed retention varied from zero to 60 percent, depending on where the seed was attached to the vehicle and whether the road was paved or unpaved.

This research showed that vehicles can pick up large numbers of seeds, especially when driven off-trail and under wet conditions. If seeds are picked up in mud, which then dries on the vehicle, they can travel almost indefinitely until it rains or the road surface is wet, allowing for extremely long distance transport of seeds.

Outdoor recreationists who drive on remote roads to trailheads or who ride ATVs off-road or on designated trails may unknowingly spread weeds with their vehicles. Preventing the spread of weeds into non-infested areas is the most effective and efficient way to manage weeds over the long term. To help prevent the spread of weeds, washing vehicles frequently is beneficial with particular concentration on wheel wells. Washing vehicles is especially important before and after driving on roads with high densities of weeds along the edges or after driving off-road or trail.

Read more about this research in the MSU Extension publication "Weed Seed Dispersal by Vehicles" (MT201105AG). The publication is free and can be downloaded or ordered through MSU Extension publications online at <http://www.msuextension.org/store/>; by calling (406)994-3272; or by sending an email to [orderpubs@montana.edu](mailto:orderpubs@montana.edu).