

Meadow Restoration

Mount Rainier National Park
National Park Service
U.S. Department of the Interior



Every year millions of people visit Mount Rainier National Park to enjoy the spectacular subalpine wildflower display. The majority of these people visit the easily accessible areas of Paradise and Sunrise. Such concentrated visitor use and the unfortunate off-trail travel which often goes along with it, can severely damage fragile plants. Once the vegetation has been trampled and killed, the stage is set for erosion of both the thin loam topsoil and deeper soil layers. Centuries may pass before natural meadow processes can replace lost soil and heal erosional scars. In places where damage has been caused by off-trail trampling of fragile vegetation, the National Park Service is attempting to restore natural meadow conditions.



Repair of an eroded area begins with measuring and mapping the damage. Based on the size of the damaged area, resource management specialists estimate the material needed for repair, the number of hours/days/years a meadow rehab crew will need to complete the work, and the expected cost. Should extensive repair be necessary or if materials need to be transported by helicopter to the damaged site, the cost of rehabilitating a particular area can be extremely high.

Assuming funding for the project is available, the next step is actually doing the work itself. First, wooden or rock stabilization bars are placed across the eroded area to stabilize soil and thus prevent additional soil loss. Second, new soil and gravel are deposited to replace soil previously washed away. The nutrient composition, pH, and texture of the new soil closely resembles that of the soil in the surrounding meadow. To prevent alien plant species from accidentally being introduced the new soil is also steam sterilized before being deposited. This precaution ensures the genetic integrity of the original wildflower meadows. Third, deeply eroded tracts are filled to above grade thereby allowing for eventual compression of the soil to the surrounding ground level. Fourth, the site is revegetated. All plants and seeds used in the revegetation of the damaged area come from plants which grow close to that specific site. This maintains the native species composition of the entire area. The fifth and final step in the meadow repair process is covering the site with excelsior. Excelsior lessens surface erosion, moderates ground temperature fluctuations, and retains moisture thus reducing seedling mortality and enhancing plant growth.



Even though the National Park Service is actively trying to rehabilitate areas damaged by concentrated use and off-trail trampling, our ability to repair such damage is limited. To a tremendous extent the meadows must repair themselves. Only with time will they be able to completely stabilize the soil in their eroded areas and restore plant diversity to the extent of that present in undisturbed meadows.



For this reason, the National Park Service requires all visitors hiking at Paradise and Sunrise to stay on the constructed trails. This requirement is strictly enforced. Do your part, help protect these beautiful meadows. **DON'T BE A MEADOW STOMPER.**