

**Restoration of native plant communities after road decommissioning in the Northern Rocky Mountains: effect of seed-mix composition, seeding density, and road-removal method on vegetative establishment.**

**ASHLEY S. GRANT\***

\*College of Forestry and Conservation, University of Montana, Missoula, MT 59812.

**Abstract**

Road decommissioning is increasingly being recognized as a critical first step in the restoration of terrestrial and aquatic habitats. Federal agencies are currently removing more than 3,000 km of roads per year, in an effort to decrease habitat fragmentation, stabilize slopes, and improve water quality. Rates of road decommissioning are likely to increase in the future, as the US Congress recently appropriated \$40 million for road removal and restoration in the western United States (Wildlands CPR). Despite this relatively large public investment, little is known about the efficacy or ecological effects of road-removal practices. One particularly important issue that has not received enough attention is the impact of post-road-removal revegetation strategies. Conventional revegetation treatments, which are implemented after road decommissioning in order to immediately stabilize soils on highly disturbed sites, include the use of low-diversity nonnative seed mixes that are applied at high seeding densities. However, seeding with nonnative species may inhibit establishment of native plant communities, thereby detracting from restoration goals. In contrast, seeding with ecologically appropriate native species may facilitate ecosystem restoration, but there are concerns about both the high cost of seeds and speculated slow rates of establishment. The proposed study will evaluate 1) the short-term effects of road decommissioning on plant community composition and 2) the effects of seed origin (native vs. nonnative), seed-mix diversity, seeding density, and road-removal method on vegetation establishment on recently decommissioned roads in the Northern Rocky Mountain region. Results from this investigation will reveal whether ecologically appropriate native species can revegetate disturbed sites as effectively as nonnatives. This information will be valuable to land managers interested in ecologically sound restoration of disturbed areas and is directly applicable to recently adopted Forest Service policies regarding the use of native cultivars for revegetation.