# Roadside revegetation: Native plants and noxious weeds

(***Rob Ament, Monica Pokorny, Jane Mangold, Noelle Orloff***)

**Introduction:** Roads are important features of the western landscape, providing transportation routes for people, goods, and services. Exposed soil along roads is often susceptible to invasive plant establishment; once invasive plants are established, roads can vector spread of invasive plants to adjacent lands. Establishing diverse, perennial plant communities on roadsides through revegetation is a proactive approach to sustainable road management, including management of noxious weeds and other invasive plants (photo right). The objective of this study was to evaluate roadside revegetation projects for establishment of seeded species and abundance of invasive species.

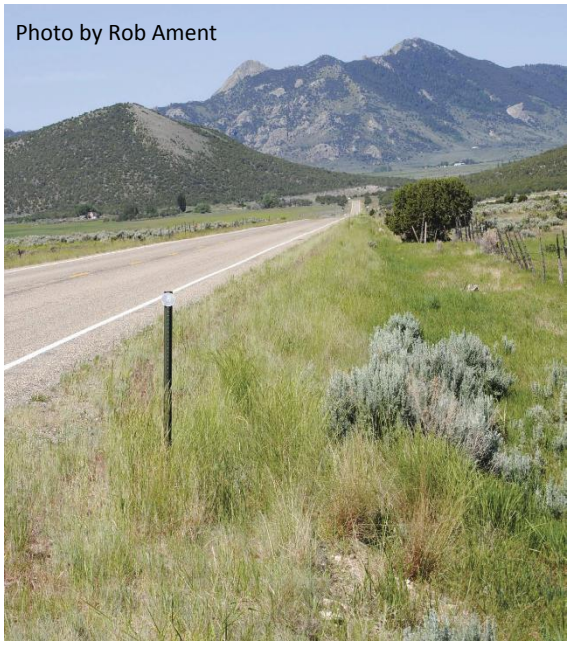
Photo by Rob Ament

**Methods:** We evaluated 17 (16 in Idaho, 1 in Montana) roadside revegetation projects representing six different EPA Level III Ecoregions, thus accounting for variation in climate, topography, and soil type. Projects had been implemented by Idaho Transportation Department or Montana Department of Transportation between 2003 and 2011; an average of 5.25 years had elapsed between the conclusion of each project and our monitoring. Percent canopy cover of each species was recorded in 50 frames at each site. Across the 17 sites, 61 species were seeded including 27 grasses, 23 forbs, and 11 shrubs. Site preparation, seed mix, and revegetation methods differed by sites due to specific objectives and characteristics of each site.


Photo by Rob Ament

**Results:** Of the seeded grass species, 21 of 27 established. Bluebunch wheatgrass (*Pseudoroegneria spicata*) (photo right) and Idaho fescue (*Festuca idahoensis*) were the best-performing native grasses. Seeded grass species that consistently established but had a low mean canopy cover (2–5%) included sheep fescue (*Festuca ovina*), western wheatgrass (*Pascopyrum smithii*), and basin wildrye (*Leymus cinereus*). Seeded forbs and shrubs had low establishment success and low mean percent canopy cover (~1%). Alfalfa (*Medicago sativa*), silky lupine (*Lupinus sericeus*), western yarrow (*Achillea millefolium*), and sulfur flower buckwheat (*Eriogonum umbellatum*) were the best performing forbs. Noxious weeds (Idaho or Montana state-listed species) were present at 47% of the sites; the most common noxious weeds were spotted knapweed (*Centaurea stoebe*) and St. Johnswort (*Hypericum perforatum*), occurring at 4 of 17 sites. Field bindweed (*Convolvulus arvensis*), oxeye daisy (*Leucanthemum vulgare*), and rush skeletonweed (*Chondrilla juncea*) were the next most common noxious weeds, each occurring at 2 of 17 sites. In general noxious weeds were a small component of the plant community along roadsides, likely due to control activities (i.e. herbicide applications). Invasive plants other than noxious weeds were ubiquitous, occurring at 100% of the sites. Cheatgrass (*Bromus tectorum*) occurred more frequently than any other invasive plant, being present at 14 of 17 sites. Invasive plant canopy cover was generally low, averaging less than 10% for all but two sites. For more details about this study, see Ament et al (2007) Native plants for roadside revegetation in Idaho. Native Plants Journal 18(1):4-18.

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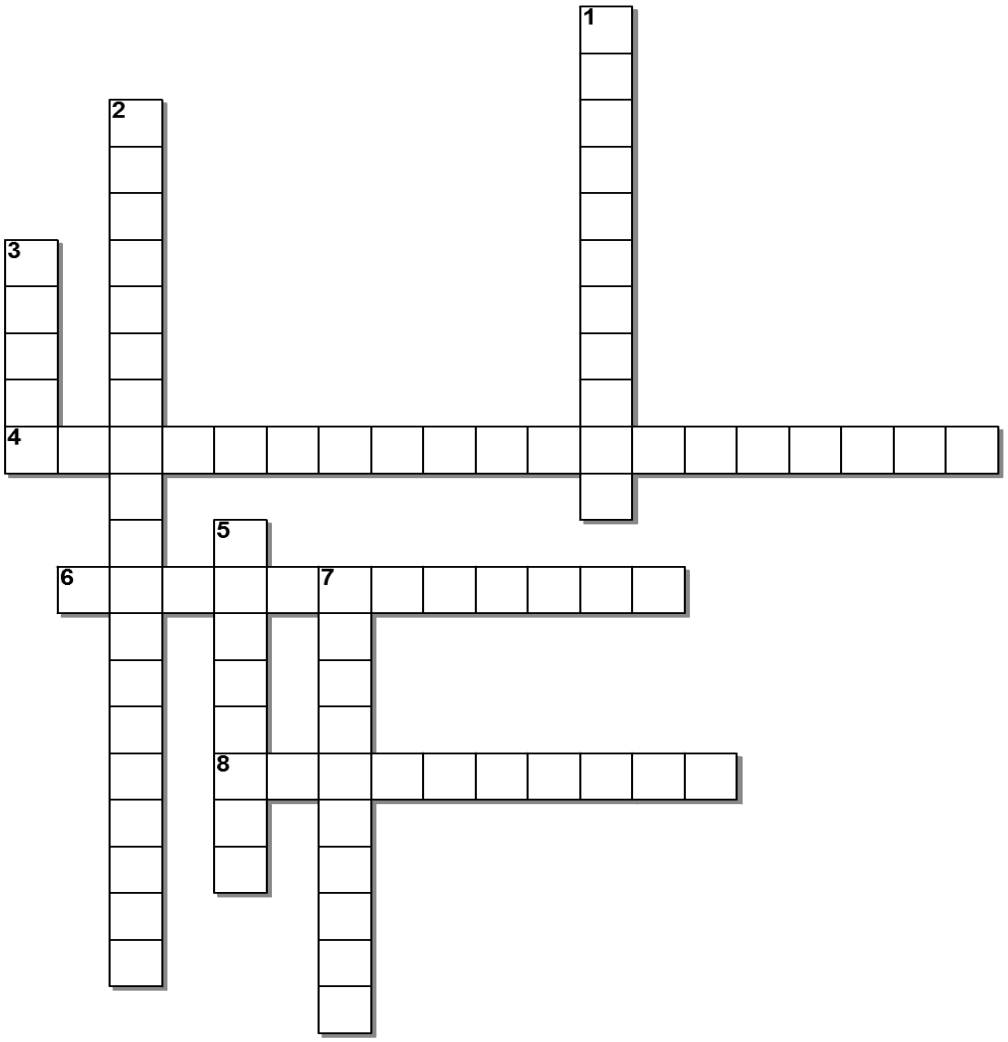
## Test Your Knowledge of Roadside Revegetation: Native plants and noxious weeds




**Across:**
4 one of the best performing grasses across the 17 study sites
6 proactive approach to weed management
8 ubiquitous invasive plant found across 17 study sites

**Down:**
1 measurement commonly used for monitoring vegetation
2 this was one of the most commonly occurring noxoius weeds along monitored roadsides (but don't get depressed about it)
3 this plant form did not establish well along the roadsides in the study
5 roads provide movement of these, not to mention people and goods
7 designations accounting for climate, topography, and soil type variability

*Solutions are posted to the MSU Extension Invasive Rangeland Weed website:*
http://www.msuinvasiveplants.org/extension/monthly_weed_post.html

MONTANA STATE UNIVERSITY EXTENSION

Montana noxious weed Education Campaign