RESTORATION GUIDE

Invasive species have the ability to damage ecosystems by degrading habitat, altering nutrient cycling, and displacing native plants and animals. Removing the invasive species is only one part of the solution. The restoration of disturbed land is essential to habitat recovery. The goal of this pamphlet is to provide the steps necessary to combine invasive plant control with the establishment of desired plant species to help improve the chance of restoration success.

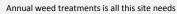South Park Elk Feedground Restoration Site

MAKE A GOAL

Defining project goals and objectives is the most important step in planning a weed management or restoration project. To restore habitat most effectively, planners need to clearly identify the target species and why they are doing it.

SITE SELECTION & PREPARATION

Total Acreage and Infestation Density - Determine the number of acres that are weed infested and in need of revegetation. Areas where invasive plants make up more than 30% of the total species are key candidates for revegetation (Goodwin, et al., 2006). These areas with dense weed infestations are better suited for revegetation because there are few desirable species in the area to naturally reseed. Sites with small weed infestations can be brought to the desired goal state by controlling the weeds and allowing the vegetation to fill in.

Which whitetop infested site requires revegetation?

Annual weed treatments is all this site needs

Ideal site for weed control and revegetation

Weed Control - Treatment may take several years to reduce the weed seed bank enough to make revegetation viable. Generally, at least two weed treatments per growing season are recommended to ensure that seed production is minimized. Contact Teton County Weed and Pest for a weed management plan.

Soil Condition – Before starting a project have a soil sample analyzed. Good soil health is imperative to the success of restoration. Topsoil may have been removed or compacted during construction; add amendments before seeding.

WHEN TO PLANT AFTER WEED TREATMENT?

Chemical	Common Uses	Plant Back Interval
2,4-D	Broadleaf lawn weeds	7 days
Milestone/Chaparral	Oxeye daisy, knapweed	1 yr grasses; 2 broadleaves
Escort/Telar	Toadflax, mustards, houndstongue	4 months
Matrix	Cheatgrass	12 to 18 months
Plateau	Cheatgrass	4 months
Roundup	Non-selective	1 month

PLANTING METHODS

Broadcast seeding – When seeds are broadcast, seeding rates are typically greater than 20 lbs/acre or one seed every 2.5 inches (Pawnee Buttes, 2013). To improve success of broadcasting it's a good idea to increase seed to soil contact – which can be as simple as raking the seeds into the site or on a larger scale using a harrow. To further protect the seeds from predation and exposure – use of certified weed free mulch like straw can help successful establishment.

Broadcast seeding after cheatgrass removal

Hydro seeding –Hydro seeders apply the seeds to the soil surface in a water based slurry with a mulch tacking agent and often include fertilizer. It usually has a high degree of success and is often the best option for sites that have slope and potential erosion issues. There are several companies that provide this service in our area check the contacts page on our website.

Drill seeding – A drill seeder places seeds at a desirable depth, covers them with soil, and can seed at various rates. Drill seeding can be successful at rates as low as 8-12 lbs/acre. Drill seeders work well on flat and gently rolling sites but, may be dangerous on slopes – always refer to the user's manual for guidelines. There is a rangeland drill available to rent at the TCWP office.

Drill seeder rental available at TCWP office

WHEN SHOULD SEEDING TAKE PLACE?

Seeding Method	Seeding Timeframe	Moisture Source
Fall	October/November	Spring snow and precipitation
Spring	Snow melt off to Early May	Spring snow and precipitation
Summer	Late Spring-Mid Aug	Irrigation system

SEED MIXES

Choose the seed mix based on your project goals. The native grass mix can be used for a variety of sites where the goal is restoration to native species but where weed management will continue. The pasture grass mix is introduced grasses known for production and their competitive ability for resources with noxious weeds. The forbs mix is a list of native species that may be inter-seeded into sites following successful weed control.

Native Grass Mix		Non-Native Pasture Grass		Forb Mix
Species	Variety	Species	Variety	Species
Bluebunch Wheatgrass	Snake River	Intermediate Wheatgrass	Rush	Western Yarrow
Indian Ricegrass	Nezpar	Tall Fescue	Forager	Lewis Blue Flax
Slender Wheatgrass	Pryor	Meadow Bromegrass	Regar	Firecraker Penstemon
Thickspike Wheatgrass	Critana	Timothy	Climax	American Vetch
Sheep Fescue	Paradise	Orchardgrass	Potomac	Evening-Primrose
Streambank Wheatgrass	Sodar			
Sandberg Bluegrass	High Plains			

SITE MANAGEMENT

Management of the site following seeding should be designed to encourage the desirable plants while reducing the vigor of the weed populations. This plan could include mowing or herbicide applications, but when it comes to revegetation, it is imperative to control the weed problem first to give the native grasses a competitive advantage.

Resources

Teton Conservation District - (307) 733-2110
Colorado State University Soil Testing Lab http://www.soiltestinglab.colostate.edu/
Utah State University Analytical Laboratory http://www.usual.usu.edu/

Seed mixes can be purchased from:
Big R Ranch & Home - (307) 201-1646   Wilson Hardware- (307) 733-9664
Pawnee Buttes Seed - (800) 782-5947   Wind River Seed - (307) 568-3361

References

Dow Agro Sciences LLC (2012). Grasses, Revegetation, and Conservation Reserve Program (CRP Guidelines). Techline Online February 2012.

Pawnee Buttes Seed Inc. (2013). Retrieved on 1-28-15 from: http://www.pawneebuttesseed.com

Goodwin, K., Marks, G., & Sheley, R. (2006). Revegetation Guidelines for Western Montana: Considering Noxious Weeds. Montana State University Extension EB 170.

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