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.

RESTORATION GUIDE

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.

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.

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

WHEN TO PLANT AFTER WEED TREATMENT?
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.

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.

### WHEN SHOULD SEEDING TAKE PLACE?

<table>
<thead>
<tr>
<th>Seeding Method</th>
<th>Seeding Timeframe</th>
<th>Moisture Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>October/November</td>
<td>Spring snow and precipitation</td>
</tr>
<tr>
<td>Spring</td>
<td>Snow melt off to Early May</td>
<td>Spring snow and precipitation</td>
</tr>
<tr>
<td>Summer</td>
<td>Late Spring-Mid Aug</td>
<td>Irrigation system</td>
</tr>
</tbody>
</table>

### 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.
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.

### 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/](http://www.soiltestinglab.colostate.edu/)
- Utah State University Analytical Laboratory [http://www.usual.usu.edu/](http://www.usual.usu.edu/)

Seed mixes can be purchased from:
- Big R Ranch & Home - (307) 201-1646
- Pawnee Buttes Seed - (800) 782-5947
- Wilson Hardware - (307) 731-9664
- Wind River Seed - (307) 568-3361

### References


### Compiled by: