SUPPLEMENTAL PLANTING

TECHNICAL GUIDANCE DOCUMENT

Document No.: WRG 6A-9
Publication Date: 1/28/2012

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INTRODUCTION

Inter-seeding of a Construction Area

Re-planting is conducted when seeded species have failed to establish, when invasive species have been removed, or when native species have been eliminated as part of invasive species control. In many cases, re-planting native species will minimize the chances that invasive species will colonize areas of bare soil. The risk of invasive species establishment often influences decision making about whether re-seeding is necessary. Small areas may fill in on their own from seed dispersal from surrounding native vegetation, but larger areas may require re-planting. Inter-seeding into existing vegetation is also sometime needed to increase diversity levels to meet project goals.

Some mortality is typically expected with newly planted tree and shrub seedlings due to drought, damage from maintenance activity, disease or animal damage. As a result, re-planting of woody plants may be needed to meet project goals.

APPLICATION

Re-seeding is typically conducted with seed that is purchased, collected on-site or from nearby plant communities. Re-seeding is conducted by hand unless large areas are being re-seeded. Hand seeding generally involves dispersal of seed over the bare area and then working in the seed with a harrow or rake. Larger seed should generally be worked into the soil, while smaller seed can be broadcast on top of the soil. It is also recommended to roll the seeded area with a garden roller or walk over the area to create seed to soil contact. It is helpful to mulch the seeded area; in some cases, dead stems from surrounding native vegetation can be used, but the stems should be spread thin enough to allow light to penetrate to the seeded area. When re-seeding large areas water levels may need to be decreased if possible to allow for access of equipment

inter-seeding may be needed at some sites to increase diversity levels. Inter-seeding is most effective in stands where grass is not overly dominant; it generally does not work well in monoculture stands of switchgrass or reed canary grass, or in Kentucky bluegrass sod. Both forbs and grasses can be inter-seeded. Forbs are

generally broadcast seeded while grasses are typically drilled. Individual species should be chosen based on specific site needs and project goals. Seeding rates should be based on the density and diversity of existing vegetation, and project goals. Site preparation for inter-seeding generally involves the removal of non-native vegetation and thatch through burning, haying or herbicide treatment to decrease competition and open areas for establishment. A full year or more may be needed for site preparation if perennial weeds are dominant

In native stands inter-seeding is most commonly conducted after a prescribed burn. Forbs are commonly broadcast in the fall or late winter. Seeding during this time of year provides more time for forb and sedge seeds to be stratified. Late winter seeding is generally conducted when there is less than a foot of snow and temperatures are around freezing or slightly higher. An advantage of seeding in late winter is that freeze thaw action can help incorporate seed into the soil.

Inter-seeding can be conducted in spring or early summer, but some type of packing or dragging is beneficial. A potential strategy is to broadcast forb seed followed by seeding grasses with a seed drill that is equipped with a roller that can enhance establishment by promoting seed to soil contact.

During the first two years after inter-seeding burning should be avoided to prevent damage to seedlings. Mowing is an important method to promote seedling establishment and growth after seeding. Frequent mowing (every two to three weeks if possible) to a plant height of 6-8 inches is recommended for two seasons in non-native grasslands and restored/reconstructed native prairie. A second year of mowing is particularly important if seeding was conducted in the previous spring and not all forb seed had a winter for stratification (breaking dormancy).

In the case of trees and shrubs, hand planting of individual trees and shrubs within existing rows is usually needed unless widespread loss has occurred. In that case, a tree planting machine can be used. Re-planted seedlings will generally require some watering unless there is sufficient soil moisture/rainfall (approximately one-inch per week).

OTHER CONSIDERATIONS

Weed control is often needed before re-seeding. The seedbed should be prepared in a way similar to the original seeding. Vegetation maintenance should also be conducted on the re-seeded area, generally involving mowing and spot spraying. Young trees may require weed control by mowing the first couple of years.

COSTS

The costs for supplemental planting vary depending the size of the area to be re-planted, seed mixes or plants needed, and vendor or staff time to conduct the planting. Re-planting woody plants, or diverse seed mixes typically have the highest cost while projects where seed can be collected and spread on the project site may have the lowest cost.

ADDITIONAL REFERENCES

Going Native, A prairie restoration handbook for Minnesota landowners, Fuge

The Tallgrass Restoration Handbook for Prairies, Savannas, and Woodlands, Packard, S., Mutel, C.F.

Restoring Canada's Native Prairies: A Practical Manual, Morgan, J.P., Collicutt, D.R. and Thompson.

BWSR Inter-seeding Guidelines: www.bwsr.state.mn.us/grantscostshare/native-buffer.html