

MOWING FOR WETLAND AND BUFFER MANAGEMENT

TECHNICAL GUIDANCE DOCUMENT



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INTRODUCTION

Mowing after a project is established is conducted for a variety of purposes, including, control of woody vegetation, the management of cool-season grasses, promoting seedling growth after inter-seeding native species, and reducing the above ground growth of invasive species in preparation of herbicide application. Mowing can also be used to decrease competition for tree and shrub plantings by controlling weeds and providing additional sunlight and nutrients.

Where prescribed burning is not possible due to weather conditions or surrounding landuses mowing or haying can be an option for long-term maintenance of buffer areas. Using flail type mowers can help add nutrients back to the soil, and woody vegetation and cool-season weeds can also be set-back if the mowing is conducted when the plants have a higher percentage of their energy reserves in above ground growth. Burning can be more effective at reducing thatch layers and re-incorporating nutrients, and may maintain higher diversity levels than mowing.

Mowing or haying can be limited by hydrology conditions, as equipment may form ruts in moist soil allowing for the introduction of invasive species. Steep slopes and rough terrain can also be limiting factors for mowing.

Mowing equipment can be a vector for the spread of invasive species due to seeds becoming lodged on the mower, in dried clippings, or mud attached to equipment. It is important that seeds are removed from mowing equipment before the mower is brought to a new part of a restoration site, or to a new project. To the extent possible, mowing should be conducted shortly before invasive plants flower to prevent them from setting viable seeds.

Mowing that is conducted after the establishment phase of a project should be conducted at times that will minimize impact to ground-nesting birds. The nesting season is roughly between April 15th and August 1st. An



exception is when inter-seeding forbs to increase diversity in a grassland planting or unless needed to resolve specific maintenance issues. Program approval is typically needed to mow during the bird nesting season.

Typical equipment for mowing includes tractors with adequate horsepower, flail mowers, stalk choppers, and for small areas, brush saws with sickle bar attachments.

Mowing for Managing Cool-season Grasses

Cool-season grasses such as smooth brome grass and reed canary grass are active early in the growing season. Mowing in late spring can set-back these species to favor warm season species in buffer plantings. Repeated mowing of reed canary grass in wet meadows may decrease its vigor and promote the growth of native species by increasing light levels; species that grow lower to the ground will likely benefit the most. Haying of the cut material may be needed to prevent smothering of desirable species. Mowing can also be used to remove old growth and increase palatability of cool-season grasses for grazers as part of conservation grazing efforts. Mowing of reed canary grass is often combined with herbicide treatment for long-term control.

Mowing to Promote Seedling Growth

Inter-seeding involves adding plant diversity in restoration projects by seeding additional species. Inter-seeding is often conducted after a prescribed burn. As part of inter-seeding efforts, mowing is generally conducted every few weeks during the first year and into the second year if needed to decrease competition and allow light to reach seedling forbs and grasses. See BWSR's inter-seeding guidelines (www.bwsr.state.mn.us/grantscostshare/native-buffer.html) for more information about inter-seeding practices.

Mowing to Prepare for Herbicide Application

Mowing is sometimes conducted to prepare invasive species such as Canada thistle, reed canary grass, non-native phragmites, and many shrub species for broadcast herbicide application. Mowing of herbaceous species is often conducted shortly before flower heads are formed to prevent seed production. Mowing of grasses may be conducted more than once if herbicide application will occur in the fall. After mowing, it is common to allow vegetation to re-grow to around 1-3 feet tall so there will be sufficient leaf surface present for herbicide application. In the case of reed canary grass, mowing in August or early September can extend the window for treatment further into the fall when herbicide is effectively taken into rhizomes. Without mowing in late summer the grass can start going dormant during dry fall weather.

Mowing to Promote Woody Plant Growth

Mowing between planted trees and shrubs help to control competition for moisture, nutrients and sunlight. It is often necessary to flag seedling trees and shrubs before mowing, or to use brush saws to mow around seedlings before using mowers. See additional weed control methods in the "Tree and Shrub Care" section.

OTHER CONSIDERATIONS

Mowing can be used in combination with other techniques such as spot treatment of weeds, flooding conservation grazing, and prescribed fire to control weeds and promote the growth of native prairie, forest and wetland species.

COSTS

Costs associated with mowing vary depending on site conditions, the size of the project, and the need for an insured vendor. Costs vary between twenty and one hundred dollars per acre.

ADDITIONAL REFERENCES

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

Weed Seed Dispersal by Vehicles, Montana State University

Invasive Species Management While Working on DNR Administered Lands

http://files.dnr.state.mn.us/assistance/backyard/treecare/forest_health/invasiveSpecies_ManagementOnDnrLands_factsheet.pdf