

HAYING FOR WETLAND AND BUFFER MANAGEMENT

TECHNICAL GUIDANCE DOCUMENT

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INTRODUCTION

Haying can be used as a management tool to remove weed growth and thatch to provide sunlight for establishing native species and to help control woody plants in prairies and wetlands. Haying can also be used to help maintain diversity levels. Rave et. al (2013) found that the total number of species and proportion of native species was similar between plots that were hayed in the fall and plots where early season prescribed burns were conducted in planted grasslands. Haying can be a good alternative to prescribed burning where burning is not feasible due to the presence of desirable woody plants, unfavorable weather or surrounding landuses. Another role of haying can be to remove tall growth of weeds or woody plants prior to burning, herbicide treatment or flooding.



Reed canary baled prior to flooding

If allowed by conservation programs, and consistent with project goals, haying of uplands can also provide forage for cattle producers and biomass for energy production. When considering haying as a management strategy it is important to consider potential influences on bird nesting, soil disturbance, soil nutrients, and long-term diversity levels.

APPLICATION

HAYING FOR WEED MANAGEMENT

The date of haying is an important consideration. Haying should be planned during times that will minimize impact to ground-nesting birds. The nesting season is generally considered to be between April 15th and August 1st. As a result, prescribed haying is commonly conducted in August or September.

Typical cutting heights of grass for haying are between 4-6 inches. Cutting at this height leaves more leaf area for rapid re-growth to rebuild root reserves for future growth. Cutting height should be increased if the cutting date is delayed or if the site has a slow growth rates.

In some cases, haying is conducted to remove grass thatch in preparation of applying herbicide. After haying, vegetation should be allowed to re-grow for a few weeks to ensure sufficient leaf surface for the herbicide application. Haying has been used for some wet meadow restorations to remove reed canary grass thatch and above ground growth after the nesting season. For mowing to be conducted in wetland sites, water levels must be low or drawn down in the fall. It is important that soil disturbance does not occur as part of the practice, as this may promote the establishment of additional invasive species. Haying alone does not have a significant effect on reed canary grass, but it can provide light for native species to grow. Herbicide treatment or flooding is typically needed to significantly decrease reed canary grass dominance after haying.

Mowing equipment can be a vector for the spread of weed seeds due to seeds becoming lodged on the mower, in dried clippings, or mud attached to equipment. It is important that seed be 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.

When mowing is conducted to control woody plants, most species (cottonwood, Siberian elm, buckthorn, boxelder) require stump treatment with herbicide. It is important to treat cut stumps within a few hours to prevent re-sprouting. If herbicide cannot be applied soon enough, follow-up foliar application may be needed.

HAYING FOR FORAGE AND BIOMASS PRODUCTION

Forage or biomass production sites are typically hayed once a year or every other year to allow for adequate growth of plant material. The re-growth is essential for rebuilding root reserves and for providing important nesting and wintering cover for grassland wildlife. The yield gained from a second cutting in one season will often reduce yields by the same amount the following year.



To avoid significant impacts to wildlife, it is recommended that no more than fifty percent of a field be hayed in any given year.

This can dramatically improve production in the future and maintain adequate cover for wildlife habitat. It can also help maintain species diversity that otherwise might be lost by harvesting the same time each year. While a rest-hay rotation may seem inefficient, prairies managed under this scenario can produce as much tonnage from one-half of the prairie as when the entire prairie is hayed annually. The rested portion will often produce enough forage the year after resting to compensate for production lost the year of rest. Brushy vegetation will be less of a concern even in a rest-hay rotation, especially if prescribed burning is introduced. A rest-hay rotation will also help lower equipment and fuel costs for the operator.

OTHER CONSIDERATIONS

Haying can be used in combination with other techniques such as spot treatment of weeds, biological control, prescribed grazing and prescribed burning. It can be an effective strategy to remove thatch before using herbicide application to remove reed canary grass and other perennial weeds.

COSTS

Costs of haying depend on site conditions, travel distance for equipment, the need for an insured vendor, and whether agreements can be set up to exchange haying services for the resulting bales. In some cases there may be no cost if the hay is of high enough value to the farmer or vendor haying the site. In some cases, landowners may be paid between \$3-\$25 per acre for the harvested biomass.

ADDITIONAL REFERENCES

Comparison of an Autumn Biomass Harvest with a Spring Burn in Restored Native Grass Field, Rave, D.P., Fieberg J., Kotts, K., (Wildlife Society Bulletin 37(3), 2013.

BWSR RIM-Clean Energy Program Guidelines and Standards

Minnesota – Clean Energy Program Guidelines and Standards, A Working Lands Conservation Program for Growing Native Perennial Crops for Bioenergy, BWSR

State of Missouri and Minnesota Department of Natural Resources