

# TECHNICAL NOTES

UNITED STATES DEPARTMENT OF AGRICULTURE  
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NATURAL RESOURCES CONSERVATION SERVICE  
ALEXANDRIA, LOUISIANA

## PLANT MATERIALS TECHNICAL NOTE NO. 18

### Management of Native Plantings After Establishment

A producer will often spend a considerable amount of time and money planning, buying native seeds, and planting, but will fail to look at the long term management needs of a planting after establishment. As such the time and money spent for planting is often wasted if the landowner fails to consider management activities needed to maintain the planting over time.

If a planting is not properly managed, plants tend to become rank and unattractive, productivity is decreased, species composition changes, and certain planned land uses such as for wildlife benefit will diminish.

Management activities are needed to; set back succession; change desired vegetative composition; improve structure; and improve overall stand health and longevity.

Management is especially critical in Louisiana, where average annual precipitation exceeds 50 inches and growing seasons are relatively long. If not properly managed, succession will take over and any old-field or site planted to natives will usually revert back to a shrub/tree dominant community.

Post establishment management activities are needed to set back succession, but also to create the vegetative composition and structure desired by the landowner. Includes below are commonly used management activities that could be used by the landowner to help maintain and manage native grass plantings.

When managing native plantings established under government programs, most notably the Conservation Reserve Program, there are established guidelines and timeframes for “mid-contract management practices” (e.g. disking, burning, herbicide applications, and mowing). Landowners and managers should consult the appropriate agency prior to carrying out management practices under an active contract to ensure desired activities meet program guidelines and are included in the conservation plan.



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## **Management Activities**

### **PRESCRIBED FIRE /CONTROLLED BURNING**

Prescribed fire or controlled burning is the controlled application and use of fire under specified environmental conditions, used to achieve management goals. The main objectives of using fire as a grassland management activity is to reduce litter buildup, set back succession, increases nutrient availability and to stimulate herbaceous growth conditions. The effect of a prescribed burn will vary greatly with frequency, fire intensity, season of burn, amount and type of vegetation burned, moisture and temperature, wind speed and method of burning.

Burning fall into two categories (e.g. dormant-season burns and growing-season burns) each related to the time of application and management objectives.

Dormant-season burning is accomplished in late winter/early spring, just before spring green-up. The objective is to reduce vegetative litter buildup, increase nutrient availability, and stimulate conditions for herbaceous growth and increased plant diversity. Dormant-season burning reduces winter cover only for a short time and does not disrupt spring nesting or birthing periods for grassland birds or small animals. Burning at this time of the year helps to create an open structure at ground level increasing light penetration and heat buildup at the soil surface. If the field is not disturbed periodically, litter builds up on the surface and overall plant growth and performance is reduced. Dormant-season burnings removes residue buildup and increase the chances for early spring green-up, seed germination, and improved plant health.

Growing-season burning is accomplished after spring green-up into late summer/early fall. Some of the main objectives of planning a growing season burn include setting back succession, changing species composition, and reducing litter buildup. Growing-season burns tend to be more difficult to accomplish because of the leaf moisture content. One of the greatest advantages of using a growing-season burn is its ability to reduce woody succession in a field. It's been proven that most young trees and shrubs are most susceptible to fire after bud break when leaves are present and the tree is actively growing. While the tops may be killed with a dormant-season fire, the root system remains alive, usually resulting in prolific sprouting the following growing season. With a growing-season burn you are more likely to kill the entire tree, including the root system. One potential negative effect of a growing-season burn is the dramatic increase in smoke production. Growing-season burns can be used when native warm season grass plantings have become too dense and the landowner wishes to change or increase the species composition of a planting.

Using prescribed fire or controlled burning is efficient, effective, cheap and easy; however, planning and experience are necessary. When used properly fire can cause planned changes to occur across the planting and help to achieve the landowner's objectives.

Proper burning permits should be obtained from the state forestry agency before using fire and all burns should be conducted and/or overseen by properly trained and experienced personnel. It is important to understand how fire behaves under various conditions and to burn only when conditions are suitable to meet the landowner's objectives.

## DISKING

Disking involves the use of some type of mechanical farm disk to disturb the soil, set back plant succession and influence plant composition in field. Disk types commonly used for this operation may include; a tandem disk, an offset disk, or a single gang disk. Within certain areas this piece of farm equipment may also be referred to as a disk harrow. Of all the management options discussed disking is considered one of the simplest, potentially most effective, and least expensive techniques that land managers could utilize to manipulate native plantings.

The main objectives of disking involve the purposeful disturbance of the planting and soil to reduce litter accumulation, create areas of bare ground, stimulate germination of dormant or covered seeds, and rejuvenate aged perennial plants. Disking promotes the decomposition of thatch buildup in a field, which improves soil nutrient availability, and encourages the natural re-vegetation of annual plants (grasses and forbs) that are a major wildlife food source. Disking can also improve and provide important brood rearing habitat. Disking promotes plant diversity by exposing the soil allowing seeds of annual plants to germinate and grow. Disking can provide many of the same positive attributes as burning, especially in areas where burning is not possible. Two factors that must be considered when using a disk as a management tool includes the timing (when to disk) and disking intensity (light vs. heavy).

The decision on when to disk (timing) needs to be guided by the landowners desired vegetative composition of the planting and management objectives. Disking during different seasons of the year will greatly influence vegetation composition.

Disking in the fall and winter generally produces a different suite of plants than disking in the spring. Disking in the fall and winter normally stimulates more desirable forbs, while disking in the spring may stimulate certain grasses to grow. Be aware that a spring disking potentially will also stimulate seeds of less desirable grasses such as johnsongrass and crabgrass to germinate and grow. Disking strips across the field and altering disked areas with undisked areas every 3 to 4 year will provide the landowner a good diverse mixture of species and habitats that would be beneficial to wildlife.

Disking intensity is a correlation between how much plant residue is left standing as compared to how much of the soil surface is exposed following the operation. The goal is to cut the existing vegetation, incorporate at least 1/3 to 1/2 of it into the soil, and expose areas of soil thus providing open spaces for new seed germination. Remember that a disk is also a primary tillage implement used to destroy and incorporate both living and dead plant residue. Done improperly disking could result in the total destruction of a

native grass planting. Disking intensity is influenced primarily by the amount and type of plant residue on a site along with the soil texture and available soil moisture.

Although some disk types such as an offset disk will break the soil surface and incorporate residues much better than a tandem disk. The type of soil texture and available soil moisture will greatly influence the number of passes needed to achieve the desired intensity. Disking under low soil moisture conditions often require 5 or more passes just to cut a few inches into the soil, particularly if heavy residues are present. Comparably disking under optimum soil moisture conditions may only require one or two passes to cut the existing vegetation and thatch layer exposing the soil surface.

Regardless of soil texture or soil moisture, if the field is covered with thick tall or rank vegetation it may not be possible to disk unless other management techniques (e.g. burning or mowing) are first used to reduce the amount of standing vegetation. This is especially important if the only option available to the landowner is the use of a light tandem disk.

## HERBICIDES

The use of herbicides as a management tool for native grass planting is often overlooked or not considered. Using herbicides can be very effective to reduce coverage of undesirable forbs and grasses, eliminate or reduce woody species, and to reduce plant population where stands have become too dense. Using herbicides alone will not help reduce plant litter buildup from years of unmanaged grass stands but when used with other management option such as burning or disking it can provide a cheap cost effective tool to landowners.

Herbicides may be applied across the entire field, applied in strips or used as a spot-spray treatment over troubled areas. Problematic woody species could be easily controlled by spot-spraying plants with woody specific herbicides. When undesirable plants occur over the entire field spraying herbicides using a broadcast sprayer has proven to be very effective. Boom sprayers may be used if the planting is of a uniform height and the spray pattern is not affected by different plant height. When using any herbicide be sure to follow labeled recommendations and be aware of crops growing in adjacent fields that potentially could be affected by spray drift.

## MOWING AND BALING

Mowing is considered the least-preferred method of managing established fields of native grasses due to the fact that it leaves a tremendous amount of plant residue at ground level. Over time the thatch layer increases and bare-ground space is eliminated which reduces the opportunity for new seedling development. Mowing can be very effective in reducing weed competition during the first three years of establishment for native plantings, especially when herbicide applications or burning is not possible.

If a field cannot be burned or disked, and mowing is the only option, it should be done at a specified time of the year that would leave the least amount of biomass on the surface and have the least amount of impact on wildlife. This is generally a period of time from

late winter to just before spring green-up. If mowing is needed during the growing season it should be preformed along with haying or baling, which would remove excess residues from the field. The timing of haying or baling during the growing season is of real concern when considering nesting and brood-rearing periods. If a field needs to be mowed during the growing season mow only once and consider mowing in strips or established blocks on a 2 to 3 year rotation. Mowing strips or blocks on a rotation provides brooding, nesting and escape areas for wildlife all in the same field or general area.

## CONCLUSION

Prescribed fire and disking are strongly recommended for managing fields of native grasses forbs and legumes. When used correctly (with respect to frequency, timing, and intensity), both provide excellent tools to not only set back succession and establish plant species composition, but will greatly influence wildlife habitat and forage quality if the field is being grazed.. Using herbicides, mowing or mowing/baling should also be considered when other options are limited due to location, time, or available resources. One method of managing native warm season grasses fields that was not discussed include grazing by livestock. Grazing is the most natural method of grassland management and if the landowner has animals available should be used along with the other management activities discussed above.

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