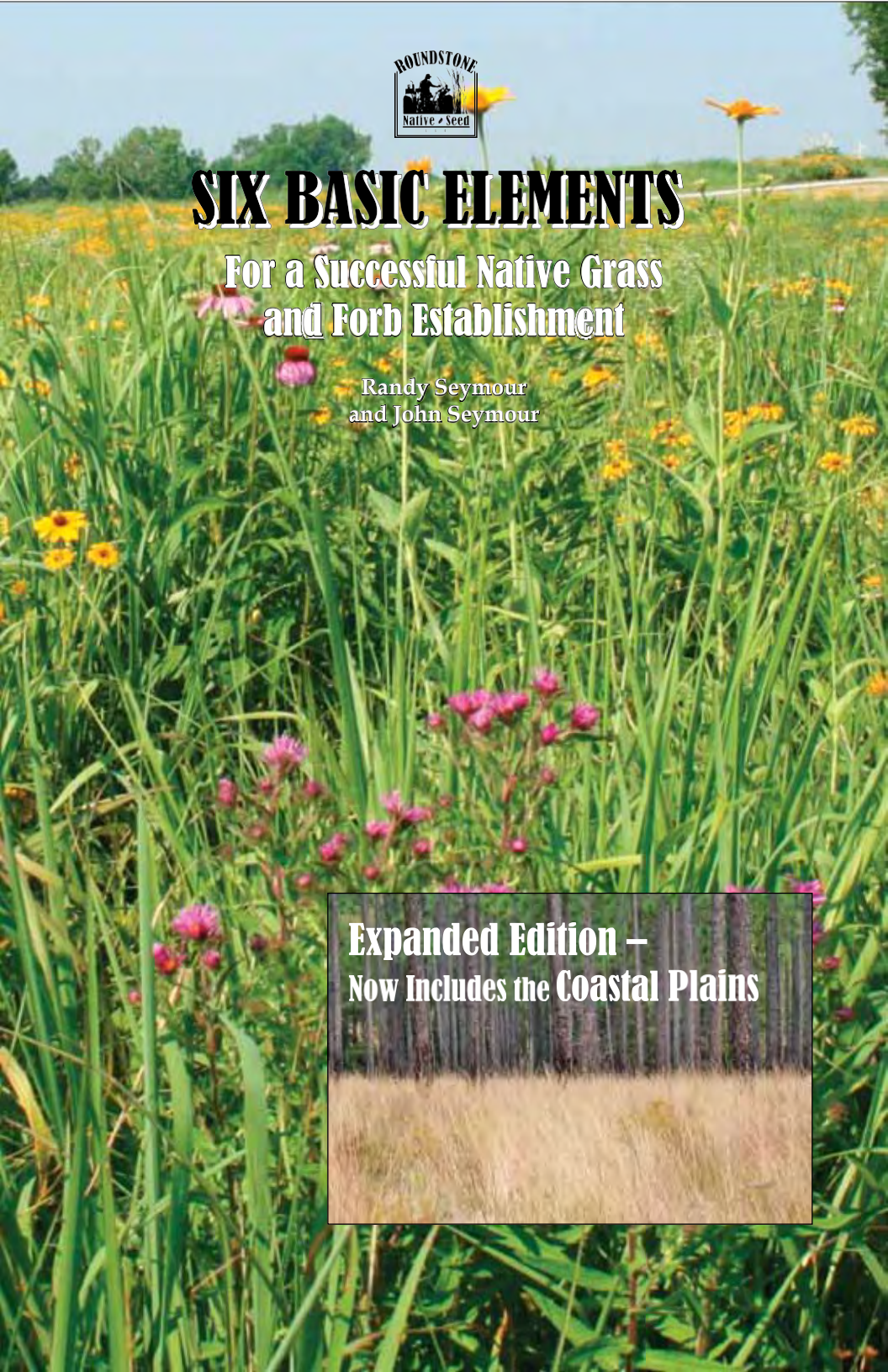

SIX BASIC ELEMENTS

For a Successful Native Grass and Forb Establishment

Randy Seymour
and John Seymour

Expanded Edition –
Now Includes the Coastal Plains

Six Basic Elements for a Successful Native Grass and Forb Establishment – Fifth Edition

By Randy Seymour and John Seymour

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Six Basic Elements for a Successful Native Grass and Forb Establishment

1. Understand How Native Warm Season Grasses and Forbs Grow

Native Warm Season Grasses (NWSG) are clump grasses, not turf grasses, as are most of the forage grasses we are familiar with. Please do not make the common mistake of evaluating and managing your NWSG planting based on your experience with cool season turf grasses that form dense mats.

NWSG plantings are slow to establish, devoting most of their energy the first year to developing a root system. Do not expect to see a lush green carpet and full ground cover the first year. Keep in mind that these are clump grasses that spread by rhizomes, and a single plant may be one to two feet in diameter when mature. A single plant every square foot will, in time, produce a very good stand.

Forage planting at 90 days

Depending on the effectiveness of the site preparation, you can expect some degree of weed competition to be present, however, it can be prevented or controlled with proper prevention and maintenance practices.

CRP planting at 45 days

Using developed protocols for establishment, it is possible to produce harvestable first-year stands of some NWSG for forage, but site preparation is critical. A primary goal for Farm Bill Program plantings, however, is wildlife habitat. For this reason Farm Bill Program plantings often use low seeding rates, which may add to the difficulty of establishment, especially when inadequate site preparation results in heavy weed competition. At these extremely low seeding rates it is imperative that every single seed possible germinate and survive to insure a viable stand.

2. Competition Control

No single factor, with the possible exception of seeding depth, is as important to a successful establishment of NWSG as ***control of competition***. NWSG and native forbs are slow to establish and cannot withstand shading or competition for moisture, especially in some Farm Bill Programs where site preparation may be limited due to time constraints. These native plants mostly devote their energy to putting down a root system the first year and if the minimal leaf area produced cannot get sunlight the plant will simply wither and die.

Know what weeds you are going to try to kill before you start

The first and perhaps most important step in controlling competition is to take a botanical inventory of the establishment site. Determine what weed seeds are most likely to be present throughout the growing season before you start planning your competition control. Once you have determined what weed seeds are going to be a problem you can then chose a herbicide or combination of herbicides tailored to your specific competition or decide on the optimal timing of cultivation if that is your control method of choice. For example, weed species such as Dogbane, Sumac, Multifora Rose, Bermuda Grass, Bahia Grass and many others are not effectively controlled by Roundup® alone. Other herbicides, such as Crossbow®, may be necessary for such hard to kill species. Imazapyr based herbicide may be effective for Bermuda Grass and Bahia Grass. See your herbicide dealer for specific recommendations for your list of weed problems.

Control of cool season weeds

Control of cool season weeds and unwanted grasses is fairly simple. It is just a matter of choosing the right site preparation method, the right herbicide, and the right time of application. Cool season plants such as fescue most often suppress species such as Nodding Thistle, Serecia Lespedeza, Foxtail, Crabgrass, Texas Panicum, Ragweed, etc., and their seeds may lay dormant in the soil bank for years and appear as major warm season problems after the cool season plant has been eliminated. Ahead in this booklet you will find a recommended set of weed control practices. You will want as little remaining dead plant material on the establishment site at the time of seeding as is possible.

Control of warm season weeds

Control of warm season weeds and unwanted grasses is not so simple and is paramount to a successful establishment. The problem with the warm season weeds is that they do not emerge and their seeds do not germinate until about the same time or later than you will want to seed your NWSG and forbs. While you can effectively kill most growing warm season weeds and grasses, it is the unsprouted seeds of these competitors that will be your primary problem. The goal is to select and time your herbicide treatment for maximum killing effect and to include an effective pre-emergent herbicide that will suppress germination of these warm season competitor seeds.

Weed Control & Site Preparation – Important!

Not properly controlling weeds and not preparing the site will almost guarantee establishment failure.

A reasonable kill on the fescue but failure to bush-hog will make it nearly impossible to get seed into the ground through the horizontal fescue stems.

A single early burndown without a pre-emergent herbicide treatment has given the competition so much of a head-start that it will smother out the seedlings.

An example where only a single burndown was made, but too late to get a kill, leaving too much vegetation to effectively drill through.

Recommended process of weed control for a native warm season grass planting

Most Farm Bill program producers will not have the opportunity to follow this set of guidelines in its entirety.

1. Herbicide treat warm season weeds and grasses such as Johnson Grass, Giant Foxtail, Crabgrass, Texas Panicum, Pigweed, etc. prior to seed formation in the year prior to establishment to prevent a weed seed crop from infesting your site after seeding of the natives. If this is not possible, the use of a pre-emergent herbicide with Imazapic as the active ingredient will suppress germination of these warm season weed seeds until after your native plants have had a chance

to get started. Our experience indicates label rates may prohibit germination or kill native seedlings under stress conditions. In the Deep South, where Bermuda Grass or Bahia Grass can be a major problem, a herbicide containing Imazypryr can be used in late summer or fall. Check with your supplier or NRCS for recommended rates.

2. In the fall prior to the establishment year remove as much vegetation and thatch as possible from the site by burning, haying, grazing, or mowing. Mowing is the least desirable method because of the residue left on the ground. If this is not possible due to time or program restrictions in the fall, then removal of thatch should be done in the spring. On steep slopes it may be advisable to not remove existing thatch until spring due to the potential for erosion. Mowing should not be used in the spring due to the difficulty the seed drill will have in cutting through the horizontal vegetation. Drills will do a better job of getting the seed in the soil in standing vegetation than in newly mowed vegetation and will avoid pressing thatch into the ground to wick moisture away from the seed and preventing good seed to soil contact.

3. In the fall or spring following at least 6" of regrowth or new growth of the dominant cool season plants, especially fescue, a selected herbicide should be used for a complete burndown. Spring is preferred for this burndown due to the need for vernal weed control, however, a fall burndown may be best due to the difficulty of timely getting into wet fields in the spring to make the herbicide treatment. If the site is a reasonably clean bean, corn, or other crop field, a spring or fall herbicide burndown is probably not needed. Where a crop field or planting site needs a cover crop or nurse crop, depending on the time of planting, oats, millet or annual rye can be used. In a cover crop situation, the crop planted would be killed back with herbicide prior to planting.

4. Seven to ten days prior to seeding, a combination herbicide treatment should be applied. This herbicide treatment should include a selected burndown herbicide to kill any remaining cool season plants surviving the early spring burndown and any warm season plants that have emerged prior to seeding. In addition, this treatment, as needed, should include 2 to 4 ounces of an Imazapic-based herbicide to suppress the germination of many warm season weed seeds.

CRP Planting in a pasture field following effective competition control practices.Practices included bush-hogging in the fall,a spring burndown,and a pre-emergent Roundup® burndown with an Imazapic-based herbicide included to suppress warm season seed germination.

3. SEEDING METHOD

Most native warm season grass and most native forbs and legumes will not emerge if planted below 1/4" in depth. This needs repeating. They simply won't sprout if planted too deep. The seeding method and equipment chosen must ensure really good seed to soil contact and prevent burying the seed too deep. For very sandy soils that quickly lose surface moisture, especially in the coastal plain, a compromise of seeding depth should be made to ensure moisture availability, especially late in the year.

Native warm season grass species such as Big Bluestem, Little Bluestem, Wiregrass, and Indian Grass have long awns and hairy appendages that make the seed extremely light and fluffy. In addition, most of the seed on the market contains typically 20 to 40 percent chaff (stems and leaves). Seed that has not been debearded (had the awns and hairs removed) or that contains high percentages of inert matter (stems and leaves) **MUST** be planted with a specialty warm season no-till grass drill, which compensates for the light fluffy seed and trash with picker wheels for seed pickup and oversized tubes to reduce clogging. Even with the specialty drills, non-debearded seed and seed with a high chaff content will clog seed delivery tubes and will require constant monitoring

Debearded seed with the chaff cleaned out can be run through a conventional drill or can be broadcast when special care is taken as will be explained later in this booklet. A possible exception to this is Little Bluestem and Side Oats Grama, which can rarely be debearded completely without damaging the seed. Mixes with minor percentages of debearded Little Bluestem should be okay to run in a conventional drill with careful monitoring. We recommend the use of specialty warm season no-till drills even for debearded seed due to other features normally included that aid in accurate seed placement. With the extremely low Farm Bill Program seeding rates it is critical that every seed possible be placed to maximize germination.

Drilling warm season grass seed using warm-season specialty drills.

The following drill features and operation suggestions will aid correct seed placement:

- No-till drills need trash plows or coulters. Trash plows and coulters cut through crowns of existing vegetation to allow placement of the seed in soil rather than on top of roots and dead vegetation. In addition, the trash plows level the soil in front of the double disc openers to aid accurate seed depth placement. This can be especially important when drilling across rows in crop residue fields.

Agitator Screw & Picker Wheels

To ensure a dependable constant measurement of seed delivery.

- Excessive drilling speed should be avoided when using trash plows to prevent throwing dirt into the excavation made by the adjacent plows.

Trash Plows

To level planting area for depth control and to scalp the site to insure seed to soil contact.

- Drills with depth bands on the double disc openers to prevent placing seed too deep are highly recommended. A good rule of thumb for accurate seed depth placement is to expect to see about 1/3 of the seed exposed on top of the ground.

Depth Bands

to prevent burying seed too deeply. Seed buried deeper that ¼" will not survive.

Gear Reduction Assembly

To allow quick change and exact seed delivery calibrations.

- Caution is urged to ensure alignment of trash plows, discs, and packer wheels. The discs should ride in the center of the trough cut by the trash plows and the packer wheels must align with the groove cut by the coulters to effectively press the seed into the soil.
- Caution is urged to ensure proper pressure settings for trash plows and packer wheels. Do not cut with the trash plows any deeper than is absolutely necessary to expose soil consistently. Make sure the packer wheels have pressure on them.
- When drilling a mix of grasses and forbs where the seed has been debearded, there is no problem in mixing the grass and forb seed together and drilling all of it through the same box of most drills as long as they have agitators.

It is recommended, however, that the seed box of most drills as long as they have agitators only be filled to ⅔ capacity to compensate for any separation that might occur. When the seed is not debearded and the trash has not been cleaned out, it is recommended that the small smooth seed in the mix be run through the legume box and the larger smooth forb seed be run in the cool season box. Otherwise the smooth seed will settle to the bottom resulting in areas with no grass seed and areas with no forb seed.

If you have purchased debearded seed with the chaff cleaned out and have elected to use a conventional seed drill or to broadcast seed your site, here area few suggestions that will help ensure a successful establishment:

- Carefully calibrate the seeding rate on your drill and test the calibration over a large known area to ensure you do not exhaust your seed prior to seeding the entire site. Additional reduction gears will allow calibration with very close tolerances on most native warm season grass drills. Native seed can be expensive and nobody wants to buy it twice.
- Check your seeding depth often and choose to err on the side of too shallow rather than too deep.
- Inspect your seed delivery hoses often to keep them from clogging, especially if Little Bluestem or Side Oats Grama is included in the seed mix.
- Do not attempt to broadcast seed on other than conventionally tilled ground. Cultipack the site prior to broadcast seeding and then cultipack again after seeding to firmly press the seed into the soil. Failure to cultipack prior to broadcast seeding will result in a large percentage of the seeds being placed too deep to germinate and has been a cause of numerous establishment failures.
- When broadcasting, a carrier may be needed to evenly distribute the light grass seed, especially Little Bluestem and Side Oats Grama, as well as the lighter forb seed. It is best to broadcast at a half rate and seed over the area twice with the second pass at a right angle to the first pass.
- Fertilizer is not recommended as a carrier. Your native grasses will not need the fertilizer in the first year and any addition of fertilizer will only give the competition a boost.
- Farm Bill Programs in some states require an increase of 20 to 25 percent seed weight per acre to compensate for seed that does not get good seed to soil contact when broadcast seeding.

4. TIMING AND RATE OF SEEDING

Most native warm season grass seed and many native forbs will not germinate until the soil temperature is above 55 degrees and for many the optimum temperature is 73 degrees. There is therefore little incentive to plant early and there are plenty of reasons to delay planting until the appropriate time.

Keep in mind that the biggest cause of establishment failure is a failure to control competition. Often the most critical factor in reducing competition is to control warm season grasses and weeds. Like the natives you are trying to establish, these warm season grasses and weeds won't germinate until the soil temperature is around 55°F. By waiting you will allow these warm season grasses and weeds to emerge so they can be effectively killed with your herbicide application. Planting too early also has the disadvantage of exposing your seed to erosion, predation, and becoming buried too deep for emergence.

The danger in planting late is the increased possibility of reduced soil moisture. **Generally, the optimum time for seeding NWSG seed in the southeastern United States is mid-May to mid-June. In the Deep South, seeding may begin as early as March 15.** Two weeks earlier is okay if you are absolutely certain there will be no warm season grass and weed competition. In normal to moderately below normal moisture years successful plantings have consistently been completed as late as the last week in June. At these later dates it is even more important to eliminate competition for soil moisture.

A wildlife habitat planting 12 months after seeding. This field was seeded on June 21 in a dry year.

Very careful calibration of the specialty warm season drill is vital for correct seeding rates and is often difficult. Often these drills will not have the needed extra gears or have the adjustment mechanisms necessary to adjust the seed output in less than 1- or 2-pound increments. If borrowing a Fish & Wildlife Resources drill or renting one from a dealer, have the Dept. of Fish & Wildlife Resources personnel or the dealer calibrate the drill for your contract mix. Running out of seed prior to seeding the contract area and having to go back to the seed vendor for more seed is an expensive—and all-too-common—problem.

Late winter (January-March) dormant seedings can be successful when prior-year competition has been carefully implemented. Dormant seeding in corn, bean, cotton or cereal crop fields that have been herbicide treated in anticipation of a dormant seeding can be very effective. Seeding rates for late winter dormant seedings should be increased by 25% to compensate for seed lost to rot, predators and frost heaving. Late winter dormant seedings have the advantage of subjecting the seed to a natural cold/moist stratification, and especially increases forb density in the first year.

Fall and winter dormant seedings were not recommended in the past, but, as with all things, advancements in research and techniques has allowed fall and winter plantings to not only become common place, but to be actually preferred in some instances. Natives are not restricted to warm season plants and many species, such as the wild ryes, actually do much better in dormant plantings.

In the past dormant plantings were not recommended due primarily to anticipated difficulties with weed competition control. It has been demonstrated that with the proper herbicide treatment regime dormant plantings can be as good, and in some cases better, than spring plantings. This is especially evident in plantings into crop fields where weeds have been suppressed for years.

5. SEED QUALITY AND CONDITIONING

Quality seed is free of chaff and weed seed, and has a current seed test showing Purity and Germination.

If your seed is no good, full of trash, and contains lots of weed seeds, it doesn't matter how much care you take in seeding your contract, how hard you work to prepare your site, or how much effort and expense you put into controlling competition. You simply won't get a stand.

Do not let price alone be the determining factor when purchasing your seed. Shop wisely and don't be afraid to ask questions about the seed you are about to purchase. Just because a bag of seed has a tag on it does not insure that what is on the tag is what is in the bag.

Seed shipped out directly to consumers evades any quality inspection by state regulatory services or any other agency designated to protect consumer interests. Such practices create a dumping ground for old, mislabeled, and poor quality seed. Seed industry analysts are reporting that low demand over the past few years has resulted in large inventories of old seed stored in bins without heat and moisture control.

Recommended considerations when purchasing your seed

- **Buy ecotype (locally adapted) seed if available**. Ecotype seed evolved in your soils, climate, rainfall, geology, and pests. It will simply perform much better.
- **Buy seed by PLS (pure live seed) weight** and demand a current test. The law requires a current test and any reputable dealer will comply.
- **Don't buy seed with high percentages of inert matter** (chaff). Such seed will cause problems when drilling. In addition, if the producer cannot clean the stems and grass out, then they cannot clean out the weed seeds.
- **Examine the seed you purchased for weed and crop seed** regardless of what is printed on the tag.

- **Buy seed that has been stored under temperature and humidity control**. Avoid seed that has been stored in grain bins through the hot summer.
- **Buy only debearded seed if available**. Only debearded seed can be cleaned effectively. Debearded seed aids in seed to soil contact, won't clog drills, and provides approximately 15% more numbers of seed per PLS pound of seed purchased.
- **If in doubt about the quality of the seed you have purchased, send a sample of the seed to your state regulatory services to be tested.**
- **Be sure to keep a sample for your records.** In case of failure, a test can quickly determine if the seed is at fault. Some programs will partially cost-share replanting if an act of nature is the cause of failure rather than seed quality.
- **When receiving seed, keep seed from being exposed to extreme heat.** When seed gets hot it loses germination rapidly.

Using high quality cleaned and conditioned seed pays.

6. Stand Maintenance

Experience has shown that for many landowners, contractors or agencies that use quality seed, prepare their site, and use effective pre-emergent competition control, there is still the challenge of post-emergent weed control. Mowing can be an effective method of competition control and is the most commonly used practice the first year. Care must be taken, however, to ensure that mowing height is above emerging native grasses and forbs. Some of the forbs and legumes such as Partridge Pea and Blackeyed Susan in the Farm Bill mixes are annuals or short lived biennials and are dependent on first-year seed production to maintain their presence. Mowing too late in the season to allow regrowth and seed production can destroy these plants from your stand. A major disadvantage to mowing is that it does not kill plants such as Johnson Grass, leaving the roots to reinfest your stand in the future. It is better to start mowing early and to mow frequently than it is to let the competition become tall and thick. If the competition is allowed to become too thick and then mowed, the resulting thatch can be as harmful in smothering out young seedlings as the growing vegetation would be.

In areas where weeds or undesirables tower above the native plants, wicking has proven to be an effective and relatively inexpensive treatment. A rope wick applicator functions like a sponge mop, absorbing and holding the herbicide. The chemical is then wiped directly onto the weed. Rope wick applicators are available in hand-held, 4-wheeler-mounted and tractor-mounted models.

Many mixes are, or can be, designed to be Imazapic herbicide tolerant, at least to some degree. Imazapic herbicides may burn some of the forbs and legumes rather badly but will not kill many of them except at very high rates. Applications of Imazapic will control most problem weeds and unwanted grasses, however, it is a selective herbicide and will not kill all problem plants. The following are tips for using Imazapic herbicide based on our experience, you should, however, confirm with the manufacturer to make sure they will stand behind the products when following these tips:

- **Never** apply Imazapic herbicide until all seedlings are 6" to 8" tall.
- The use of Imazapic in early summer of the second year will take care of most weed problems where seed mixes were designed to be tolerant; most programs, however, are not designed to reimburse for this second treatment.
- Do not use a surfactant in post-emergent applications or in first-year stands.
- Post-emergent applications should be at 8 ounces per acre or less.

**This may not have been done in your state. Check the Plateau® label before using on the specific forbs in your mix.*

If possible, fire should be a part of your long-term maintenance planning.

Avoid using direct applications of broadleaf herbicides such as 2-4D to prevent killing of forbs and legumes. Roundup can be used to kill cool season weeds in warm season plantings during the early spring when the warm season plants are dormant, however, if some warm season plants winter over as rosettes, they may be damaged or killed. Herbicide applications, even using broadleaf herbicides, have been effective using a wick applicator above native grasses and forbs. Long term maintenance may include mowing, strip disking , and/or burning. Remember, these plants evolved dependent on fire and any effective management plan should include, if possible, periodic use of prescribed burns. You should discuss this, or any maintenance option, with your local district conservationist or Fish & Wildlife Resources representative.

If you plan to use fire as a maintenance method, you should plan for a fire lane around your fields at the time of establishment. Fire lanes should be planted in a specific mix of species that will be green and resist burning in February and March when most controlled burns are performed. Planting fire lanes in White Clover or Winter Wheat are good options. Fire lanes can also be very effective wildlife food plots when managed.

Preparing a "Burn Plan" is critical to using fire as a maintenance method. You should work with your local District Conservationist, Fish & Wildlife Resources advisor, Forestry personnel, or find a government technical services provider in your area. If using a private contractor to perform your controlled burn, make sure they are in compliance with all state regulations.

Commonly Used Native Grasses and Wildflowers

Big bluestem • *Andropogon gerardii*

Eastern gamma grass • *Trypsacum dactyloides*

Indiangrass • *Sorghastrum nutans*

Little bluestem • *Schizachyrium scoparius*

Sideoats grama • *Bouteloua curtipendula*

Switchgrass • *Panicum virgatum*

River Oats • *Uniola Latifolia*

Purple top • *Tridens flavus*

Wiregrass • *Aristida stricta*

Pineywoods dropseed • *Sporobolus junceus*

Toothache grass • *Ctenium aromaticum*

Lopsided indian grass • *Sorghastrum secundum*

Blackeyed susan • *Rudbeckia hirta*

False sunflower • *Heliopsis helianthoides*

Greyheaded coneflower • *Ratibida pinnata*

Partridge pea • *Cassia fasciculata*

Purple coneflower • *Echinacea purpurea*

Bergamot • *Monarda fistulosa*

New England Aster • *Aster novae-angliae*

Illinois Bundleflower • *Desmanthus illinoensis*

Roundheaded lespedeza • *Lespedeza capitata*

Butterfly milkweed • *Asclepias tuberosa*

Rigid goldenrod • *Solidago rigida*

Spiked blazing star • *Liatris spicata*

Hairy lespedeza • *Lespedeza hirta*

Sensitive briar • *Mimosa quadrivalvis*

Rattlesnake master • *Eryngium yuccifolium*

Lance leaved coreopsis • *Coreopsis lanceolata*

Wild senna • *Cassia marilandica*

Florida tick trefoil • *Desmodium floridanum*

NATIVE WILDFLOWERS

Arrowhead	Sagittaria latifolia
Bergamot	Monarda fistulosa
Blackeyed Susan	Rudbeckia hirta
Blanket Flower	Gaillardia aristata
Blazing Star	Liatris squarrosa
Blue False Indigo	Baptisia australis
Blue Flag	Iris virginica
Blue Vervain	Verbena hastata
Boneset	Eupatorium perfoliatum
Browneyed Susan	Rudbeckia triloba
Buckwheat	Fagopyrum sagittatum
Butterfly Milkweed	Asclepias tuberosa
Button Bush	Cephalanthus occidentalis
Calico Aster	Aster lateriflorus
Canada Tick Trefoil	Desmodium canadense
Cardinal Flower	Lobelia cardinalis
Common Milkweed	Asclepias syriaca
Culvers Root	Veronicastrum virginicum
Cup Plant	Silphium perfoliatum
Cutleaf Coneflower	Rudbeckia laciniata
Downy Sunflower	Helianthus mollis
Early Goldenrod	Solidago juncea
Erect Goldenrod	Solidago erecta
Maryland Meadow Beauty	Rhexia mariana
Maximilian Sunflower	Helianthus maximiliani
Mexican Hat	Ratibida columnaris
Mistflower	Eupatorium coelestinum
Monkey Flower	Mimulus ringens
New England Aster	Aster novae-angliae
New Jersey Tea	Ceanothus americanus
Ohio Spiderwort	Tradescantia ohiensis
Partridge Pea	Cassia fasciculata
Passion Flower	Passiflora incarnata
Pennsylvania Smartweed	Polygonum pensylvanicum
Perplexed Tick Trefoil	Desmodium perplexum
Plains Coreopsis	Coreopsis tinctoria
Prairie Blazing Star	Liatris pycnostachya
Prairie Dock	Silphium pinnatifidum
Prairie Rosinweed	Silphium terebinthinaceum
Purple Coneflower	Echinacea purpurea
Purple Prairie Clover	Dalea purpurea
Ragweed	Ambrosia artemisifolia
Rattlesnake Master	Eryngium yuccifolium
Rigid Goldenrod	Solidago rigida
Rosemallow	Hibiscus moscheutos
Roundheaded Lespedeza	Lespedeza capitata

Evening Primrose	Oenothera biennis
False Aloe	Manfreda virginica
False Sunflower	Heliopsis helianthoides
Flat Topped Aster	Aster umbellatus
Florida Tick Trefoil	Desmodium floridanum
Goats Rue	Tephrosia virginiana
Golden Alexander	Zizia aurea
Gray Goldenrod	Solidago nemoralis
Great Lobelia	Lobelia siphilitica
Greyheaded Coneflower	Ratibida pinnata
Hairy Lespedeza	Lespedeza hirta
Hairy Mountain Mint	Pycnanthemum pilosum
Heath Aster	Aster pilosus
Illinois Bundleflower	Desmanthus illinoensis
Indian Blanket	Gaillardia pulchella
Iron Weed	Vernonia altissima
Joe-Pye Weed	Eupatorium fistulosum
Lance Leaved Coreopsis	Coreopsis lanceolata
Lance-Leaved Goldenrod	Euthamia graminifolia
Lead Plant	Amorpha canescens
Lemon Mint	Monarda citriodora
Lupine	Lupinus perennis
Sawtoothed Sunflower	Helianthus grosseserratus
Seed Box	Ludwigia alternifolia
Sensitive Briar	Mimosa quadrivalvis
Showy Tickseed	Bidens aristosa
Slender Blazing Star	Liatris gracilis
Slender Mountain Mint	Pycnanthemum tenuifolium
Smooth Aster	Aster laevis
Smooth Beardtongue	Penstemon digitalis
Sneezeweed	Helenium autumnale
Spiked Blazing Star	Liatris spicata
Splitbeard Bluestem	Andropogon ternarius
Swamp Milkweed	Asclepias incarnata
Sweet Blackeyed Susan	Rudbeckia subtomentosa
Tall Coreopsis	Coreopsis tripteris
Tall Dropseed	Sporobolus compositus
Tall Goldenrod	Solidago altissima
Virgins Bower	Clematis virginiana
White Prairie Clover	Dalea candida
White Wingstem	Verbesina virginica
Wild Quinine	Parthenium integrifolium
Wild Senna	Cassia marilandica
Yellow Wingstem	Verbesina alternifolia

Other specie available.

NATIVE GRASSES, SEDGES AND RUSHES

Big Bluestem	Andropogon gerardii
Blue Gramma	Bouteloua gracilis
Blunt Broom Sedge	Carex scoparia
Bottlebrush Grass	Elymus hystrix
Broomsedge	Andropogon virginicus
Bushy Bluestem	Andropogon glomeratus
Canada Wild Rye	Elymus canadensis
Creeping Spike Rush	Eleocharis palustris
Deer Tongue Grass	Panicum clandestinum
Eastern Gamma Grass	Tripsacum dactyloides
Fall Panicum	Panicum anceps
Fowl Manna Grass	Glyceria striata
Fox Sedge	Carex vulpinoidea
Frank's Sedge	Carex frankii
Green Bulrush	Scirpus atrovirens
Hop Sedge	Carex lupulina
Indian Grass	Sorghastrum nutans
Little Bluestem	Schizachyrium scoparium
Lopsided Indian Grass	Sorghastrum secundum
Muhly Grass	Muhlenbergia capillaris
Nodding Sedge	Carex crinita
Ovate Spike Rush	Eleocharis ovata
Path Rush	Juncus tenuis
Pineywoods Dropseed	Sporobolus junceus
Prairie Cordgrass	Spartina pectinata
Prairie Dropseed	Sporobolus heterolepis
Purple Love Grass	Eragrostis spectabilis
Purple Top	Tridens flavus
Red Top Panicum	Panicum rigidulum
Rice Cut Grass	Leersia oryzoides
River Bank Wild Rye	Elymus riparius
River Oats	Uniola latifolia
Rough Blazing Star	Liatris aspera
Rufous Bulrush	Scirpus pendulus
Shallow Sedge	Carex lurida
Side Oats Gramma	Bouteloua curtipendula
Silky Wild Rye	Elymus villosus
Slender Indian Grass	Sorghastrum elliottii
Soft Rush	Juncus effusus
Squarrose Sedge	Carex squarrosa
Switchgrass	Panicum virgatum
Upland Bent Grass	Agrorostis perennans
Virginia Wild Rye	Elymus virginicus
Wiregrass	Aristida stricta
Wool Grass	Scirpus cyperinus

Other specie available.

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