



## Establishing Native Warm Season Grasses For Upland Wildlife

*In recent years, there has been increased interest in establishing native warm season grasses (NWSG) and forbs as wildlife habitat. Commonly known as prairie or prairie grass, native grasslands and savannas, a forest/grassland complex with less than 50% tree coverage, historically dominated the landscape across much of the United States. These grasses and forbs grow during the warmer months of the year as opposed to cool season grasses such as fescue and brome.*

*Native wildlife are adapted to these grassland environments and will flourish in them when given the opportunity. Unfortunately, most of this once dominant ecosystem has been lost to crop production, closed canopy forests and/or conversion to non-native pastures. For example, only 4% of the once vast tallgrass prairie exists today, with most of those acres now producing corn and soybeans across the Midwest. Similar losses have occurred in the longleaf pine savannas, pine/oak savannas and oak savanna grasslands.*

*Reestablishing native grasses and forbs can be a big first step in getting bobwhites and other grassland birds back on the farm. However, reestablishing NWSG and forb communities is not quite the same as raising a grain crop or even a stand of most non-native grass species. It is a little harder and takes much longer to establish. The information presented here will answer some of your questions about planting NWSG and forbs.*

*First, you should understand that native grasses may take up to four years to become fully established so never give up on a stand after the first year or two. I've planted native grasses since 1973 and the results usually go like this: 1st fall after planting looks like a complete failure, 2nd fall after planting there are scattered native grass seed heads here and there, 3rd season after planting a miracle has occurred with a wonderful stand of native grass across the entire field. So, don't give up. Even during those early establishment years when most of what you see growing is not what you planted, the site can provide excellent habitat for quail and other upland wildlife.*

### Planning a NWSG planting

*Planning a NWSG planting project should begin during the previous growing season. Do not use a long-residual herbicide on the site during the previous cropping year. Grass seedling damage may occur. Short-residual herbicides are less likely to pose a problem to seedling grasses and may be used to produce a weed free seedbed. The seedbed for native grasses and forbs must be firm and weed-free. For many years, the preferred seedbed has been the stubble of a weed-free sorghum crop from the previous year. Late-planted forage sorghum where the plants are frost-*

*killed is also an ideal seedbed for native grasses. Native grasses are seeded directly into the standing stubble with no additional tillage.*

*If pre-plant tillage is required to create a clean, weed-free seedbed then there must be sufficient tillage to create a firm, friable seedbed. You will probably have to cultipack or roll the site a couple times to get the required firm seedbed.*

### **Seed selection**

*If the goal of the NWSG and forb planting is to provide wildlife habitat, then choose a mix that has several grass species adapted to your soils and location and with as many native forbs as you can afford. Native forb seed is often expensive and there is a tendency to delete those from the species list, but that is a mistake. The forbs provide the greatest benefit in attracting insects for young birds and seed production for fall and winter-feeding. We generally recommend at least  $\diamond$  to 1 pound of native forbs, however even a few ounces of several native forbs in a blend may be sufficient to get these species started in your new planting.*

*Native grasses are purchased and planted in terms of pounds of pure live seed (PLS) per acre. For wildlife plantings, we recommend 3 lbs. PLS per acre of native grasses. Many early plantings used from 6 - 10 lbs. PLS per acre of native grass; however, after a few years those stands become much too thick for upland wildlife use.*

*Some of the most common native grass species used in wildlife plantings include big bluestem, little bluestem, Indiangrass, switchgrass, sideoats grama, dropseed, sand lovegrass, purpletop, and Eastern gamagrass. Although they are common in some mixes, you should probably avoid the use of Canada or Virginia wildrye due to the documented injury to long-haired hunting dogs from the sharp grass awns penetrating the body through the skin, throat or nasal cavity.*

### **Planting NWSG**

*Planting season for NWSG can begin in the late fall when daytime temperatures are below 55 degrees and extend to spring. Optimum planting dates are from one month before to three weeks after the average last frost date in spring.*

*Native grasses and forbs must be planted on a very firm seedbed and very shallow; no more than  $\diamond$  inch deep. In my experience, when I'm finished planting, if half of the seed is still on top of the ground I know I did it right. In fact, some of the best stands are achieved when the seed is broadcast on a clean, firm seedbed and then cultipacked to provide seed-to-soil contact.*

*Drills used for NWSG typically have picker wheels that extend into the seed box to pull seed into the drop tubes and agitators in the seed box to keep the seed fluffed and around the picker wheels. Planting depth is controlled by double disk furrow openers with depth bands to ensure the correct planting depth. Packer wheels are preferred to achieve the good seed-to-soil contact. Common farm drills used for wheat, oats, alfalfa, etc. do not work well with the light, fluffy NWSG seed.*

*Calibrating the drill for correct seeding rate is important especially since NWSG are purchased and planted by the PLS pounds, which can differ greatly from the bulk pounds running through the drill. To determine the*

amount of bulk seed to be planted, first consult the seed tag for the percent PLS, which is (germination X purity), divided by 100. The bulk pounds to plant is then (the desired seeding rate in PLS pounds divided by the percent PLS) X 100. For example, let's say a big bluestem seed lot has a germination of 80% with an additional 5% "hard or dormant" seed. The total germination is then 85%. The seed tag shows a purity of 60%. Therefore, the percent of PLS in the bag is 51% ( $0.85 \times 0.60 = 0.51$ ). You want to plant 3 PLS pounds per acre. The amount of bulk seed to set the drill to deliver is then 3 divided by 0.51 = about 5.9 bulk pounds per acre.

If a NWSG drill is not available, the seed can be broadcast on a firm, clean seedbed with any type of truck or tractor broadcast. You will need to use a carrier with the NWSG seed thoroughly blended within to get the seed to flow in the broadcast seeder. Typical carriers are palletized lime, fertilizer (not nitrogen fertilizer), or even grains such as wheat. After broadcast seeding, you should cultipack the site to achieve good seed-to-soil contact.

### **Weed control**

If the planting site has undesirable cool season grasses or other competitive plants present, then glyphosate (RoundUp® or equivalent) can be applied as a pre-plant herbicide. Glyphosate is a non-selective post-emergent herbicide that will kill nearly all growing plants. Do not use glyphosate after NWSG has emerged.

Imazapic (Plateau® or equivalent) is an excellent herbicide for use in most NWSG establishment. Imazapic is highly selective as a pre- and post-emerge herbicide with residual control of non-tolerant plants. Many native grasses and forbs are tolerant of the herbicide whereas most plants that typically compete with NWSG plantings are not tolerant. Consult the product label prior to using imazapic to determine if it is suitable for your NWSG and forb mix. Unfortunately, Plateau® is restricted for purchase and is generally not available to most landowners.

As an alternative to imazapic, a new herbicide that is a blend of imazapic and glyphosate is available, that can be used on new NWSG plantings. Journey® is not a restricted-use herbicide and is widely available. Journey® is applied at planting time. It will provide control of existing competing plants and residual control for several weeks after NWSG planting.

Always read and follow label directions when using any herbicide, especially on new NWSG and forb plantings, as some plants are tolerant to selective herbicides and some are not.

### **Long-term management**

Native grasses and forbs evolved in a fire-dominated ecosystem and prescribed burning is the best tool for long-term management of your planting. Burning removes accumulated litter, stimulates vigorous NWSG growth, reduces tree and shrub invasion, and promotes most wildlife use especially improving the quality as brood habitat. Be sure there are adequate firebreaks prior to the burn, that you have lined up sufficient equipment and help, and that you have fulfilled all of the local permitting requirements. For wildlife purposes, it is usually best to burn only ½ to ¼ of the site annually so that adequate unburned nesting cover remains.

*If burning is not possible on your site, selective haying is a suitable substitute. Haying is better than just rotary mowing since haying removes the accumulated litter that reduces the stand's value to many small game species. Haying should not occur during the peak nesting period of April through mid-July.*

*For more information on establishment and management of native warm season grasses and forbs, consult your state wildlife agency District Wildlife Biologist, Agricultural Extension Agent or local NWTF biologist.*