

CONVERTING HAY TO NATIVE PRAIRIE OR POLLINATOR HABITAT

This guide outlines the process of planting and managing prairies and pollinator habitat in a former hayfield. Converting areas of non-native grasses to native grasses and wildflowers is difficult and requires significant effort and patience. If you have any questions regarding the planting or maintenance of habitat, please contact:

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PURCHASING SEED

- When you are establishing a prairie or a pollinator habitat planting through a Farm Bill Program such as the Conservation Reserve Program, Conservation Stewardship Program, Environmental Quality Incentives Program, or the Agricultural Conservation Easement Program (Wetland Reserve Easements), you are required to plant a seed mix that meets the standards and specifications of the program.
- A custom seed mix that meets standards and specifications has been developed for your project. All species substitutions and seeding rate changes must be approved by your Farm Bill Biologist or NRCS District Conservationist before you purchase seed. If changes are not approved, you risk delayed or forfeited payment.
- It is recommended that you get price quotes from at least 3 native seed vendors. Prices vary greatly between vendors.
- The seed vendor list maintained by the Indiana Department of Natural Resources is attached.
- Keep all seed tags and receipts. They will need to be turned in.

ERADICATING NON-NATIVE GRASSES

- You must plant seed into a vegetation-free, firm seedbed. This is very important.
- If the non-native grasses are not killed, the native grass and wildflower seeds you plant do not stand a chance of competing against them. Non-native, cool season grasses are very aggressive. Native grasses and wildflowers take 1-3 years to mature.
- Converting pasture to native grasses and wildflowers generally takes 2-4 herbicide applications.
- Glyphosate seems to work well. Read and follow all herbicide label instructions.
- Here is a timeline to follow.
 1. **In September 2020, cut and bale the hay.**
 2. **Let the vegetation reach 6-8 inches and spray the field with glyphosate.**
 3. **In March or April 2021, spray the field again with glyphosate if vegetation reaches 6 – 8 inches.**
 4. **In May of 2021, spray the field again with glyphosate, if needed.**
 5. **Drill the seeds using a no-till native grass drill before June 15, 2021.**



GENERAL SITE PREPARATION NOTES

- You must seed into a vegetation-free, firm seedbed. This is very important.
- Do not till the field if you can avoid it.
- Tillage will cause seeds to be planted too deep. The deepest native grass and wildflower seeds should ever be planted is ¼ inch. The shallower, the better. If you do till, you must use a cultipacker or roller to make the field firm prior to planting.
- Tillage will encourage a significant flush of plants that in some instances could outcompete the seeds you are going to plant. If you do till, you will need to spray the field after firming the seedbed and plants reach 6-8 inches. Read and follow herbicide label instructions.
- If you are about to plant your seeds and you feel that there is heavy plant pressure in the field, stop. Consult with your Farm Bill Biologist. You may need to spray the field or even delay planting until the next planting window. It is best to wait and plant it right the first time than to have to fix it later.

PLANTING DATES

- The dormant seeding window is December 1st – February 28th. Many native plant species require getting wet and freezing to crack open and germinate. Planting in the dormant seeding window will allow many seeds to germinate the first summer they are in the ground.
- The spring seeding window is April 1st – June 15th.

PLANTING METHODS

- Drill the seed with a no-till, native grass drill. Drilling is the best method for planting into areas with significant plant residue such as former pastures, lawns, and hayfields.
- Broadcast the seed with a broadcast seeder, fertilizer spreader, drop-seeder, or airflow seeder.

PLANTING USING A NO-TILL, NATIVE GRASS DRILL

- Seeds may be drilled during both the dormant and the spring seeding windows.
- Do not use any random drill. You need to use a drill that was designed for planting native grasses and wildflowers. The seeding mechanisms in the boxes are made specifically for this purpose. These drills are also fitted with depth bands that do not allow the seed to be planted deeper than ¼ inch.
- Large seeds can be placed in the middle box of the drill and small seeds can be placed in the small seed box on the front of the drill or all of the seeds can be mixed with a filler such as cracked corn and placed in the large seed box on the back of the drill.
- After planting, you should see some seeds on top of the ground.
- Since prairie grass and wildflower mixes require low seeding rates and contain very small seeds, a filler should be used to allow more even distribution of the mix across the field. Mix the seed with an inert filler like cracked corn at a ratio of about 1-part seed to 5-parts cracked corn by volume. You can add more filler if needed. For more information, consult the attached Purdue Extension publication on Seed Fillers and Carriers for Planting Native Warm Season Grasses and Forbs.
- It is recommended to start with a low output and increase the seeding rate if needed.
- If time allows, divide the seed in half and go over the field twice, planting half of the seed in a North-South direction, and then planting the other half of the seed in an East-West direction. This will allow even coverage across the field and provide a failsafe if you are seeding at too high of a rate.
- Do not drill in muddy conditions.
- If you need help locating a native grass drill, contact your Farm Bill Wildlife Biologist or your local Soil and Water Conservation District office.



BROADCAST PLANTING

- Seeds may be broadcast during the dormant and the spring seeding windows.
- Seeds can be broadcast using a broadcast seeder, fertilizer spreader, drop-seeder, or airflow seeder.
- Fields should be 70% - 100% bare if seed will be broadcast or dropped on the ground.
- Non-native grass residue can be eliminated by burning it, baling it, or shallow tilling it. If tillage is used to eliminate residue it is strongly recommended to wait until spring to plant to allow for a spring herbicide application to eliminate any weed seeds brought into the germination zone. If residue is burned off the field, you must have a written burn plan.
- If seeds are broadcast in the spring seeding window, the field will need to be rolled or cultipacked before and after the seeding.
- Ground should be frozen or dry enough to get equipment in field without causing ruts.
- Ideally, time seeding prior to a snow or when temperature fluctuations are going to cause the ground to freeze and thaw. The freezing and thawing of the ground will incorporate the seed into the germination zone. If seed is spread on frozen ground and there is no snow or thaw for a while, seed can blow away.
- Since prairie grass and wildflower mixes require low seeding rates and contain very small seeds, a carrier should be used to allow more even distribution of the mix across the field. Mix the seed with an inert carrier like non-clumping, non-scented cat litter or pelleted lime at a ratio of about 1-part seed to 5-parts cat litter or pelleted lime by volume. You can add more carrier if needed. For more information, consult the attached Purdue Extension publication on Seed Fillers and Carriers for Planting Native Warm Season Grasses and Forbs.
- It is recommended to calibrate the spreader with just your carrier before adding the seed mix.
- If time allows, go over the field twice, planting half of the seed in a North-South direction, and then planting the other half of the seed in an East-West direction. This will allow even coverage across the field and provide a failsafe if you are seeding at too high of a rate.
- Do not broadcast seed if the windspeed is higher than 15 mph.



MAINTENANCE & MANAGEMENT

Year 1: Don't expect your planting to look great in Year 1. In fact, it is going to look terrible. During the first growing season, native wildflowers and grasses put most of their energy into root development and many will not grow more than a few inches. Some seeds will sit in the ground for a year or more before breaking dormancy and germinating. Most habitat plantings will look *weedy* during establishment. Annual weeds including ragweed and foxtail are great sources of food and cover for wildlife. These plants typically dominate sites during the first year and are almost never a problem. The weed pressure in most plantings will diminish in year 2. However, if you feel that the weeds in your planting are thick enough to shade out the new seedlings, the site can be mowed in year 1. The site should not be mowed shorter than 12 inches. If you mow the site shorter than 12 inches, you will kill some of the grasses and wildflowers you planted. I recommend consulting with your Farm Bill Wildlife Biologist before mowing.

Year 2: You will see many new species the second growing season. Monitor the site for invasive plants such as turfgrass, Canada thistle, reed canary grass, autumn olive, etc. Consult with your Farm Bill Wildlife Biologist if you have questions on invasive plant identification and control.

Years 3+: You should be able to find most, if not all the plants that you seeded. Once the vegetation is well-established, you should start managing with rotational disturbance. Prescribed burning is the best management option. Please seek professional assistance prior to burning. Typical burn windows are March 1 to April 1 & August 1 to November 1. Other management options include tillage and herbicide applications. Management should be performed on a 2 to 3-year rotation and limited to 1/2 (2-year rotation) or 1/3 (3-year rotation) of the total area in any given year.



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