

Wildlife Habitat Planting

Natural Resources Conservation Service - Indiana – October 2019 (ver. 1.0)

420- Wildlife Habitat Planting

PURPOSE

Establish and restore perennial native habitat for wildlife. Other benefits include reducing soil erosion, improving water quality, and creating or enhancing for pollinators and other beneficial insects.

SPECIFICATIONS

The following are Indiana specifications for establishing native habitat for wildlife.

LOCATION

When a specific species or group of wildlife is the target, use the appropriate habitat evaluation guide for that species. When general wildlife habitat is the target, use land use-based Indiana Wildlife Habitat Evaluation Guides (WHEG). Plantings can be located nearly anywhere, as long as the plant species selected for the site are suitable for the soil, light-intensity, and geographic area. Consider locations such as old fields, marginal areas, field borders, orchard edges, pivot corners, etc. When specific species of wildlife are the target, plan the location with respect to season of use, life history, home range, condition of adjacent habitats, and landscape context.



SITE PREPARATION

Site preparation is the most critical step in the establishment of habitat. Even the most well-planned seed mix will fail if the site preparation is not thorough. A well-prepared seedbed will increase the likelihood of establishment and reduce maintenance and management in the future. Weed control efforts should begin as early as 12 months prior to planting and may require multiple applications over the course of one to two year. Pay attention to sites where noxious and potentially invasive species are likely to occur, or areas of sod, such as old fescue pastures. Many of these species are perennials that spread through seed and roots, and many have rhizomatous root systems that will persist and negatively impact the planting.

Site preparation can use a combination of methods, include herbicide treatment, prescribed burning, mowing, and tillage. Each of these methods must be used with the appropriate timing and combination to maximize effectiveness. Disking should be used with caution, as soil disturbance can release additional weed seeds, creating a larger problem. Mowing alone is not likely to be sufficient and should be combined with chemical, prescribed fire or additional mechanical treatments. Non-chemical methods and organic methods are possible but are labor intensive and will likely take longer. These methods are most suited for smaller sites. See Indiana Specification Sheet 315 Herbaceous Weed Control- Site Preparation, for more information.

SEEDING RATES AND SPECIES

The following are required when wildlife is the primary concern

- All plantings will include at least 2 graminoids (grasses, sedges or rushes)
- At least 5 species of flowering plants, including at least 1 perennial legume, and at least 1 flowering species in each bloom period (early, mid, late). More diverse mixes, including greater than 5 species of flowering plants are encouraged.

- Seeding mixes should be 20-40+ seeds per square foot, depending on the overall objective. More seeds per square foot offer improved establishment.
- Seeding rates and species selection for wildlife habitat will be determined using the Indiana (IN) Natural Resources Conservation Service (NRCS) *Seeding Tool Wildlife Seeding Calculator*.
- Any pre-packaged mixes must be approved before seeding.
- Plantings designed as buffers, field borders, or corridors will be based on wildlife species requirements. Habitat buffers, borders, and corridors will be a **minimum width of 30 feet**.
- Consider linear or block plantings of native flowering shrubs on an 8 ft. x 8 ft. spacing (681 shrubs per acre). Shrubs provide early flowers, shelter from weather, and protection from drift.

Site-specific requirements are listed on the attached Specifications Sheet.

COMPANION/NURSE CROPS

A companion/nurse crop will be used when erosion control and weed suppression are needed. Companion/nurse crops include Oats, Barley, or Cereal Rye; native Wildryes (i.e. – *Elymus sp.* such as Canada, Riverbank, and Virginia Wildrye) and other species are also effective.

Companion crops will be clipped after jointing, but before seed head pollination unless otherwise directed (control of Wildrye species is not necessary so that they persist as part of native seedings). A second and subsequent clipping is necessary if re-growth provides competition. Clipping height should be above developing seedlings. Where excessive growth has accumulated, the vegetation will be chopped rather than swathed.

SEEDING DATES

Plant the selected species within the dates specified below. For native vegetation, dormant seeding is the preferred timing of planting.

Seeding Date Criteria

Table 1: SEEDING WINDOWS for PERENNIAL VEGETATIVE COVER IN INDIANA										
Plant Species	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec-Feb.
Non-Native cool season grasses			1				1			Dormant ²
Forage Legumes										Dormant ²
Native warm season species										Dormant ²
Native cool season species										Dormant ²

¹ Tall Fescue and/or Perennial Ryegrass only, with a mulch cover, Primarily for Critical Areas.

² Dormant/Frost seeding from December thru February. Increase seeding rates by 25% for Non-Native Species only. **Not for Critical Areas or new forage establishment.**

Legend

Suitable seeding dates for all of Indiana

Flood plains and ponded soils

SEED PREPARATION

Be aware that blending seed of varying size, shape and weight can make calibration of equipment and seeding uniformity difficult. Some seeding mixtures contain seed that is extremely small and thus have very low seeding rates. This may make it difficult to set seeding equipment to uniformly seed these low rates. To add enough volume to the mix for proper metering, a carrier or coated seed may be desirable. The carrier should be no larger than the largest seed species and have similar shape, density and texture to the majority of seeds in the mix. The carrier can be an inert material (i.e. cracked corn) that does not have abrasive properties that may cause damage to the equipment or the seed. Inoculate legume seed before seeding with the proper rhizobia bacteria specific for the species. Re-inoculate seed if it was pre-inoculated more than 60 days prior to seeding or beyond dates specified on the seed / inoculant tag. Pre-inoculated seed will have a coating that changes the pure live seed per pound and thus the bulk seeding rate per acre.

PLANTING METHODS

No matter which planting method is selected, it is important that the seeding equipment is properly calibrated to deliver the correct amount of seed to the proper depth. Properly calibrate your broadcast seeder based on your seed mix. Purdue University Extension has resources on how to calibrate different types of seeders.

Broadcast Seeding: Seed may be broadcast if completed in a uniform manner. Properly calibrate your broadcast seeder based on your seed mix. Purdue University Extension has resources on how to calibrate your seeders. See resources at the end of this job sheet. The seed bed should be prepared enough to allow good seed to soil contact. When frost-seeding, the freeze-thaw conditions of the soil will work the seed into the ground, preventing the need for additional culti-packing. In growing season months, the seedbed will be culti-packed before broadcasting if Tillage was included as part of the site preparation. The entire site will be culti-packed after seeding to ensure good seed-to-soil contact. Wind speed should be 15 miles per hour or less when broadcasting.

No-Till seeding: Use a no-till drill with seven (7) inch or less row spacing. Ensure the drill is designed to handle the type of seed being planted (especially important for native grasses). Seed should be drilled shallow- no more than ¼ inch deep. It is acceptable to see up to one-third (⅓) of the seed on the soil surface. Planting too deep will result in poor establishment. Many native seed require light to germinate. Soils that are too wet or too dry can also cause improper seed placement.

Conventional Seeding: Prepare a fine firm seedbed to a depth of three (3) to four (4) inches. Be sure to firm the bed prior to seeding or the risk of planting the seed too deep increases. Use a drill with seven (7) inch or less row spacing, or a culti-packer seeder designed for the seed to be planted. Seed should be drilled shallow- no more than ¼ inch deep. It is acceptable to see up to one-third (⅓) of the seed on the soil surface. Planting too deep will result in poor establishment. Many native seed require light to germinate. Soils that are too wet or too dry can also cause improper seed placement.

WEED CONTROL DURING ESTABLISHMENT

The presence of annual weeds (such as foxtail, common ragweed, and marehail) is not a concern, as these plants are important sources of food for wildlife, especially bobwhite quail. Maintenance may be needed to control excessive density of these annuals, especially during the establishment years, but is not intended to eliminate this group of plants. Control competing vegetation by mowing when competing weeds are taller than the planted vegetation, and at a height above the planted vegetation, typically greater than six (6) inches (no more than 3 years after planting). Use selective herbicides and/or spot spraying of perennial weeds or tree and shrub encroachment to protect the desired species.

OPERATION AND MAINTENANCE

Maintain the planting according to your conservation plan. Maintenance activities are needed to maintain stand health, eliminate noxious weeds or any plant species whose presence or overpopulation may jeopardize the cover or have detrimental effects to the surrounding land. Once the stand is established, supporting practices such as 647 Early Successional Habitat Management/Development and 338 Prescribed Burning, can be used to maintain the desired vegetative condition.

Minimize maintenance activities from April 1 through August 1 to protect ground-nesting wildlife, and to ensure habitat is available through the fall for insects. Minimize maintenance mowing of native forbs and grasses overwinter, as they provide winter cover, food sources, and hibernation habitat for wildlife and insects. Disturb no more than one third to one half of the habitat during this timeframe. Inspect the vegetation annually and after storm events and repair any gullies that have formed; remove unevenly deposited sediment and/or crop residues that will disrupt the function or kill desired vegetation; and reseed high mortality and disturbed areas.

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