United States Department of Agriculture

NRCS Natural Resources Conservation Service

CREP
Practice CP4D

Indiana - October 2010 (ver. 1.0)

Permanent Wildlife Habitat Program Job Sheet

PURPOSE
Permanent Wildlife Habitat plantings are used to reduce soil erosion, improve water quality, and create or enhance wildlife habitat by providing food and cover.

WHERE PRACTICE APPLIES
This practice applies to fields that meet eligibility requirements for the Conservation Reserve Enhancement Program (CREP) as determined by the Farm Service Agency (FSA).

CREP POLICY
CP4D plantings will consist of at least five (5) **native** grasses, forbs and legumes, including 20% of the acreage being planted to trees and/or shrubs. The selected grasses, forbs, legumes, trees and shrubs will be planted in blocks or strips best suited for wildlife species in the area.

CREP Permanent Wildlife Habitat are only eligible as buffers on **cropland** that is adjacent and parallel to streams, sinkholes and karst areas, wetlands, and permanent bodies of water such as lakes/ponds.

The width of CREP Permanent Wildlife Habitat will be a minimum of 35 feet, and a maximum of 180 feet, from the edge of the eligible body of water. NOTE: An average maximum width of 300 feet is allowed when area to be enrolled involves a predominance of alluvial soils. If the site already contains existing vegetation, these acres will be included in the calculation of maximum width and included in the CREP Plan, but will not be eligible for payments.

SEEDING RATES AND SPECIES
Seeding rates and species selection for this practice will be determined by using the Indiana (IN) Natural Resources Conservation Service (NRCS) Seeding Tool (Use 645 – Upland Wildlife Habitat Management). If applicable, see the attached Specifications Sheet for firebreak establishment. Any pre-packaged mixes must be approved before seeding. Site-specific requirements are listed on the attached Specifications Sheet.

GRASS PLANTINGS
A) Companion/Nurse Crops
A companion/nurse crop will be used when erosion control and weed suppression are needed. Companion/nurse crops include Oats, Winter Wheat (after the Hessian Fly-free dates in Table 2), Barley, Cereal Rye or Annual Ryegrass; native Wildryes (i.e. – *Elymus sp.* such as Canada, Riverbank, and Virginia Wildrye) are also effective, especially for native seedings and tree plantings.

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.

B) Lime and fertilizer
Lime and fertilizer should be based on a current soil test (less than four years old). In areas with existing vegetation that shows signs of nutrient deficiencies, or if the soil test shows phosphorus (P) and potassium (K) are in the low to very low range, apply enough fertilizer (organic or inorganic) to raise N, P and K to a level needed for a 1 ton/ac yield goal. Do not apply any nitrogen (N) for warm season grasses. Use Purdue University recommendations from the *Crop Fertilizer Recommendation Calculator* http://www.agry.purdue.edu/mmp/webcalc/fertRec.asp, or the Indiana NRCS Seeding Tool – *Indiana Fertilizer Calculator*.

If the pH is 6.0 or less, apply enough lime per acre to bring pH to meet the tolerance range of the planned plant species. Soil amendments will be incorporated during seedbed preparation, or applied before planting if a no-till drill is used. Apply lime according to *Tri-State Fertilizer Recommendations* - PU AY-9-32, Extension Bulletin E-2567, or the Indiana NRCS Seeding Tool – *Indiana Fertilizer Calculator*.

C) Site Preparation

It is very important to plant the vegetation into a weed-free seedbed. Use herbicides and/or tillage to eliminate competing vegetation. Weed control efforts should begin as early as 12 months prior to planting, and may require multiple applications or operations in both the fall and spring prior to planting.

Pay particular attention to sites where noxious and potentially invasive species are likely. 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.

Cool season weeds (i.e. - Canada thistle, quack grass) are best controlled in the fall (mid September – Early November) with a translocation herbicide. Plants should be actively growing at the time of application. Avoid herbicide application after 3:00 pm if overnight temperatures are expected to drop below 50 degrees (F).

Warm season weeds (i.e. - Johnsongrass) are best controlled just prior to flower with a follow-up application prior to first frost. Plants should be actively growing at the time of application.

Contact your local Purdue University Cooperative Extension Service for specific herbicides to use. **Apply all herbicides according to the label**.

Use a nurse/companion crop to further control potential weed issues and/or a temporary cover for erosion control.

If prescribed burning is used for site preparation, it must be conducted according to IN NRCS FOTG Standard 338 - *Prescribed Burning*

D) Seeding Dates

Selected species will be planted within the dates specified in Table 1.

Table 1 - Planting Dates

Species/Mix	IN Seeding Dates	Dormant Seeding Dates*
Cool Season Grasses/Forbs	3/1-5/15 8/1-9/15	12/1-3/1
Legumes	3/1-5/15 8/1-9/15	12/1-3/1
Warm Season Grasses/Forbs	4/1-6/15	12/1-3/1

***** Increase seeding rates by 25% if dormant seeding.

E) Seed preparation

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. Inoculant left in the sun, even for a short period of time can significantly reduce the viability and effectiveness. Pre-inoculated seed will have a coating that changes the pure live seed per pound and thus the bulk seeding rate per acre.

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 of very small seed. Under these circumstances, a **carrier** or using coated seed may be desirable to add enough volume to the mix for proper metering. The carrier should be no larger than the largest seed species and have similar shape, density and texture to the majority of the seeds in the mix. The carrier can be an inert material that does not have abrasive properties that may cause damage to the equipment or the seed.

F) Planting Methods

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). Set the no-till drill to provide good seed-to-soil contact and a planting depth preferred for the desired species to be planted. Generally this does not exceed one-fourth (¼) inch. Seeding native grasses deeper than one-fourth (¼) inch will lead to potential failure. 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. Incorporate lime and fertilizer during seedbed preparation. Use a drill with seven (7) inch or less row spacing or a culti-packer seeder designed for the seed to be planted. Grass seed should be drilled uniformly at a proper seeding depth of one-eight (⅛) to one-half (½) inch.

Broadcast Seeding: Seed may be broadcast if completed in a uniform manner. Pre-mix the seed with 200 pounds per acre of pelletized lime if using an airflow applicator. Seedbeds should be worked to a minimum depth of three (3) inches and firmed before seeding. The seedbed should be culti-packed before and after seeding. It is acceptable to see up to one-third (⅓) of the seed on the soil surface. Wind speed should be 15 miles per hour or less when broadcasting.

Inter-seeding:

1. **Legumes/Forbs (frost seeding):** No-till drill or broadcast as above into existing vegetation or residues. Broadcasting relies on freeze/thaw cycles, rain and/or snow to incorporate the seed. Inter-seeding does not include a seedbed preparation. This is most commonly used during the dormant seeding period in existing grass stands.
2. **Cover Crops:** No-till drill or broadcast as above into existing vegetation or residues. Broadcasting relies on freeze/thaw cycles, rain and/or snow to incorporate the seed. Inter-seeding does not include a seedbed preparation. This method can be used to establish combination mixes into relatively light (such as soybean) and weed free crop residues or to establish vegetation into a cover crop or standing crops.
3. **Grasses:** No-till drill into existing covers only if prior-treated with herbicides or tillage, or if existing cover is diminishing (i.e. – older alfalfa plantings).

G) Weed Control during Establishment

Control competing vegetation as needed until Final Status Review. Mow, burn, or apply herbicides as needed to control unwanted vegetation for up to 3 years after planting. Mow when competing weeds are taller than the planted vegetation, and at a height above the planted vegetation. Use selective herbicides and/or spot spraying to protect the desired species. Refer to Purdue Extension – *Weed Control Guide WS-16* for herbicide timing and treatment.

H) Operation and Maintenance

After the Final Status Review or three (3) years (whichever comes first), maintain the planting according to your CREP conservation plan. Maintenance activities are allowed only if necessary to maintain stand health, or to control pests, noxious weeds or any plant species whose presence or overpopulation may jeopardize the CREP cover, or have detrimental effects to the surrounding land.

The presence of annual weeds (such as foxtail, common ragweed, and perennial forbs) 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.

Maintenance activities will not occur from **April 1 through August 1** to protect ground-nesting wildlife. If maintenance activities are needed during the April 1 – August 1 time frame, the FSA County Committee **must** approve the maintenance activity **prior to** the activity occurring, and it may **only be on a spot basis**.

Mowing for generic weed control or for cosmetic purposes is prohibited.

Introduced grasses will not be mowed lower than four (4) inches; native grasses no lower than eight (8) to 12 inches.

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.

The contract area cannot be used for field roads or other uses that will damage or destroy the cover.

Apply supplemental nutrients as needed to maintain the desired species composition and stand density.

TREES AND SHRUBS

A) Site Preparation and Weed Control

Controlling weeds before, during, and after planting will increase tree survival and improve tree growth and vigor. Site preparation before planting is necessary to control existing grass or weedy vegetation. Contact a professional forester, Purdue University Extension Service or a licensed pesticide applicator for specific herbicide recommendations. Always apply herbicides according to labeled directions.

Control all weeds within a three-foot circle around each tree or a two-foot band along each side of each row. Control weeds in the spring before or during tree planting. On sites with existing sod, apply herbicides both in the fall and again in the spring prior or during tree planting.

Trees should be planted in firm ground; therefore avoid using spring tillage for site preparation prior to tree planting.

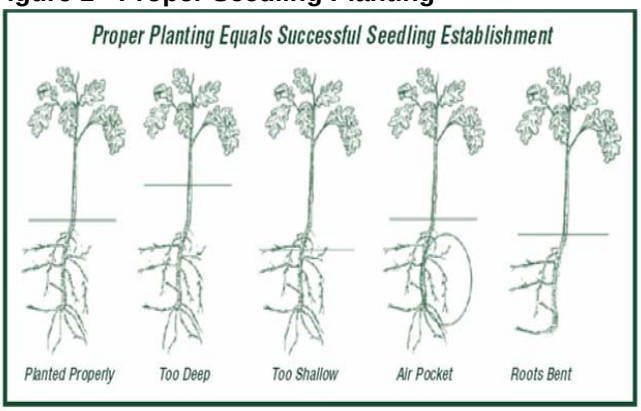
B) Planting

Bare rooted stock (seedlings) will be planted in the spring after the ground thaws, but no later than June 1. Container stock may be planted between October 1 and June 1 as local soil moisture and weather conditions permit. Do not plant trees/shrubs when the soil is frozen or dry. Trees/shrubs will be planted in a vertical position with the root collars approximately at or slightly below the ground line (see Figure 1).

Plant materials should be planted immediately upon delivery to the site. It is important to keep plant materials moist to protect them from desiccation. If planting is delayed, contact NRCS for storage details.

It is important that tree species are randomly planted throughout the site and not planted with like species unless otherwise indicated in the planting plan.

Figure 1 - Proper Seedling Planting



Purdue University Extension, *Planting and Care of Fine Hardwood Seedlings*, FNR 210

C) Operation and Maintenance

Check survivability of the planted species to insure that 70% of the desired stocking rate for the site is present three (3) years after planting. Additional planting will be completed if it is determined that additional natural regeneration will not be sufficient to colonize the site within an acceptable time frame (usually 5 years).

Weeds should continue to be controlled after planting, using a three-foot circle around each tree, or a two-foot band along each side of each row as identified in the specifications sheet.

Mowing is not recommended for weed control because it encourages grass competition and can cause mechanical damage to trees.

Livestock will be excluded from all tree plantings and noxious weeds, undesirable plants, insects, and pests should be controlled to insure that the trees are established.

Prune trees if desired to maintain central stems and eliminate forks and multiple leaders.

Consider the impacts of wildlife damage on the success of the planting. Consult a professional forester for advice on minimizing wildlife impacts.

MID-CONTRACT MANAGEMENT

Mid-Contract Management (MCM) is required **only on the grassland component** of this practice. Table 2 shows the maximum amount of area that can be disturbed by MCM activities in a given number of years. However, to maximize wildlife benefits, participants may opt to perform MCM on one-third (⅓) of the area for each of three (3) years if they so choose.

Table 2 – MCM Disturbance Area

	MAXIMUM AREA TO BE DISTURBED
5 acres or more	⅓ of the area each of 3 years
Less than 5 acres	½ of the area each of 2 years, or total area in 1 year

MCM activities will be avoided on environmentally sensitive areas including:

a) Concentrated flow areas,

b) Critical areas,

c) Within the first 20 feet of a practice that borders a water resource to avoid water quality resource concerns, and

d) Other areas where gully erosion is likely.

Environmentally sensitive areas will be marked on the plan map to ensure Mid-Contract Management activities are avoided on these areas.

Grassland areas must be established for a minimum of three (3) years before initiating MCM activities.

MCM activities operations will not be performed from April 1 through August 1 for contracts starting in 2008, to protect the primary nesting period for grassland bird species. It is also recommended, but is not required, to delay MCM activities until after August 15 to reduce the chance of harming fledgling birds and other young wildlife.

MCM activities operations will be performed along field contours, or across the slope, when practical.

Strips will parallel brushy or woody escape cover when feasible.

See the link below for MCM job sheets: http://www.in.nrcs.usda.gov/programs/CRP/crphomepage.html
.