

February 2004

## Conservation Practice Job Sheet (647)

Conservation Reserve Program (CRP) policy requires newly enrolled participants, starting with Signup 26, to do some type of “disturbance” to certain CRP practices during the life of the contract. Indiana Exhibit 9 of 2-CRP (Revision 4) lists general mid-contract management activities that are available to producers. This job sheet describes that guidance in more detail.



Normally, mid-contract management activities are conducted between the 4<sup>th</sup> and 7<sup>th</sup> year of the contract. However, on land with existing cover, disturbance activities can begin as soon as technically feasible.

### WHY INTER-SEED FORBS?

Once established, grassland fields need to be managed so that the grasses do not crowd out the forbs and/or legumes over time. In the absence of disturbance, the composition of grassland communities will change over several years through normal plant succession. The vegetative structure changes as annual forbs and legumes are replaced by perennial forbs, grasses, and eventually, woody plants. Changes also occur structurally, as bare ground declines, litter accumulates, and vegetation density increases. These changes lead to a decline in wildlife benefits.

The purpose of mid-contract management activities is to enhance the wildlife habitat value of the en-

rolled acres by increasing the amount of bare soil and by encouraging a diverse forb/legume community. Forbs (any broadleaf plant) and legumes in grasslands are beneficial to birds, insects such as butterflies, along with other wildlife. Inter-seeding of forbs is an effective management tool that can be utilized where the grassland community has become too thick to benefit the target species.

This type of management is especially helpful for maintaining brood-rearing habitat for bobwhite quail, wild turkey, ring-necked pheasant and other early successional grassland wildlife species. The habitat quality is enhanced because this practice inhibits woody growth, promotes favored seed producing plants, reduces plant residue, increases bare ground, and increases insect abundance. The insects associated with annual weed communities provide critical nutrients, including protein, and essential amino acids for growing nestlings and chicks. The structural diversity that results from inter-seeding forbs also improves habitat for a variety of grassland songbird species, including dickcissels, bobolinks and savannah sparrows. Many of these species have experienced population declines over the last several decades.

Native legumes (a type of forb), such as partridge pea, wild senna, roundheaded and slender lespedeza, and leadplant are a rich and highly palatable source of protein and green browse. Legumes also tend to harbor a wide variety of insects that are an excellent source of protein for both game and non-game birds. The growth characteristics and structure also provide for a good interspersed bare ground beneath a shaded canopy. Small mammals and birds are able to move freely at ground level to search for seeds and insects. Loafing and roosting cover for wildlife is another benefit. Many legumes start growing in early spring when most grasses are still dormant and continue to grow well into the late fall, providing additional food resources.

In addition to improving soil fertility through the ability to fix nitrogen, many legumes are also deep rooted and drought tolerant, which provide erosion control benefits.

## SPECIFICATIONS

The following are specifications for inter-seeding forbs on CRP acreage. Note that this practice can be used in conjunction with other mid-contract management techniques such as *Strip Disking* or *Strip Spraying*.

### A) GENERAL

- A maximum of 1/3 of the field will be disturbed during any year unless a waiver is received from the Farm Services Agency, or is specified in the conservation plan.
- Grassland fields must be established for a minimum of three years before initiating inter-seeding, and strips will not be disturbed more than once in a two-year period.
- Inter-seeding operations will not be performed from March 1 through July 15, the primary nesting period for grassland bird species. It is highly recommended, but is not required, that inter-seeding be delayed until after August 15, reducing the chance of harming fledgling birds and other young wildlife.
- Inter-seeded fieldstrips will be a maximum of 50 feet wide. Alternate the strips with undisturbed strips 2-4 times the width of the inter-seeded areas. Duplicate this pattern across the field.
- Filter strips will be left adjacent to all water bodies to maintain water quality. See NRCS Field Office Technical Guide (FOTG) Standard 393 - *Filter Strip* for additional guidance.
- Inter-seeding operations will be performed along field contours, or across the slope, when practical.
- Inter-seeding of filter strips, riparian buffers, grassed waterways, contour buffers or areas planted to trees and/or shrubs is not allowed.
- Inoculate legume seeds with proper inoculant.
- Erosion on inter-seeded strips will not exceed tolerable limits.
- Strips will parallel brushy or woody escape cover when feasible.

### B) SITE PREPARATION

**NOTE: Except as indicated, all site preparation items below are required regardless of planting method used.**

- Site preparation will result in a seedbed that consists of 40-70% bare soil.
- Use herbicides rather than tillage on erosive sites.

- Methods for controlling existing vegetation include the use of herbicides, tillage, or prescribed burning.
- If burning is used for site preparation, see NRCS FOTG Standard 338 - *Prescribed Burning* for additional Guidance.
- The presence of annual weeds (such as foxtail, common ragweed, and perennial forbs) is not a concern since these plants are important sources of food for wildlife, especially bobwhite quail. The purpose of seedbed preparation is to control the density of these annual weeds during the establishment year, not to eliminate this group of plants.

### C) PLANTING METHODS

#### No-till method

1. Test the soil for the lime, phosphorus (P) and potassium (K) levels. Apply P and K fertilizer only if the levels are in the low, or very low, range (P=40-80 lbs./acre; K=60-120 lbs./acre). Do not use nitrogen since it will increase the grass competition with the new legumes. A recent soil test (less than two years old) will be used if new tests cannot be done before seeding time. Apply lime preferably 9 months ahead of inter-seeding.
2. Use a no-till type seeder to sow forb mixtures at rates specified.
3. Spring seeding must occur before March 1 to avoid the nesting season for grassland birds. Late summer seeding will occur from August 15 to September 30.
4. No-till, especially when conducted in the fall, allows good seed to soil contact with minimal moisture loss.

#### Frost Seeding

This technique allows the seed to work its way into the soil through the freezing and thawing action of the ground. Note: On sites that have not been adequately disturbed, seeding may have limited success due to lack of seed-to-soil contact.

1. Seed anytime after winter freeze-up. Seeding will be completed by February 20, south of US 40, and by March 1 north of US 40.
2. Lime testing and application requirements are the same as the no-till method above.
3. Broadcast with handheld, ATV or tractor mounted seeders.

### Conventional Tillage

1. Prepare a firm seedbed containing enough fine soil particles for uniform shallow coverage of the seed.
2. When preparing seedbed on sloping land with serious erosion potential, all tillage and seeding operations will be performed on the contour, or as close as practical.
3. Lime testing and application requirements, and fertilizer recommendations, are the same as the no-till method above.
4. Spring seeding must occur before March 1 to avoid the nesting season for grassland birds. Make late summer seeding from August 15 to September 30.
5. When erosion is a concern while spring seeding, use one bushel of oats as a companion crop. Mow oats in milk stage.
6. Cover seed  $\frac{1}{4}$  to  $\frac{1}{2}$  inches deep by using a grassland drill, grain drill with press wheels, or culti-packer seeder.

### Broadcast Seeding

Broadcasting seed on land that has not been adequately disturbed, where too much plant residue remains on the soil surface, may have limited success due to lack of seed-to-soil contact.

1. Site preparation will result in a seedbed that consists, at a minimum, 50% bare soil.
2. The highest seeding rates will be used to insure the development of a good stand.
3. Broadcast areas will be lightly dragged, disked or harrowed after seeding to encourage good seed-to-soil contact.

## **D) SPECIES SELECTION**

Forb mixes will consist of a total of  $\frac{1}{2}$  to 1 lb. per acre, and will contain a minimum of five species in approximately equal proportions. Forb species will be selected from Table 1 below.

Forb selection is dependant on the wildlife species and habitat you desire, as well as soil conditions. Table 2 provides wildlife and other information for many of the forbs listed.

### **CONSIDERATIONS**

- Inter-seeding low, wet areas should be avoided because these areas often develop sedge communities, adding additional plant diversity to the site.

- Inter-seeding should be planned for the least erosive parts of fields and not in places where gully formation is a problem. **CAUTION:** Disturbance activities in the late fall on highly erosive sites may cause erosion to occur over the winter months.
- Consider spot spraying or mowing areas where noxious weeds, such as Canada Thistle and Johnsongrass, or other invasive species, such as Reed Canarygrass, exist. This will reduce the potential for unintentional establishment of these species.
- Landowners should be wary of tile blowholes, groundhog holes, fallen tree limbs, and other hazards that may have developed since they were last in the field.
- Give the highest priority for treatment to areas that are dominated by a single plant species, especially a dense, monotypic stand of grasses such as fescue or smooth brome.

### **EXAMPLE: 3-Year Rotation**

Divide the field into adjacent plots that are 90 to 150 feet wide. Within each plot, mark three strips of land that are 30 to 50 feet wide.

1. In fall of the first year of disturbance, within each plot, inter-seed the first strip of land and leave the second and third strip "untilled".
2. In fall of the second year, inter-seed the second strip, leaving the first (planted during previous year) and third strip untilled.
3. In fall of the third year, inter-seed the third strip, leaving the first and second strips untilled.
4. In the fourth year, begin the rotation again, as indicated in the conservation plan.



**Table 1 – Forb List**

Species	Soil Drainage Class Suitability
Alfalfa (CSL)	MWD – ED
Aster, Flat Topped ( <i>Aster umbellatus</i> )	PD – SPD
Aster, New England ( <i>A. novaeangliae</i> )	PD – WD
Aster, Sky Blue ( <i>Aster azureus</i> )	MWD - ED
Aster, Swamp ( <i>Aster puniceus</i> )	PD – SPD
Blackeyed Susan ( <i>Rudbeckia hirta</i> )	MWD-ED
Sweet Black-eyed Susan ( <i>Rudbeckia subtomentosa</i> )	MWD - WD
Blazing Star, Button ( <i>Liatris aspera</i> )	MWD – ED
Blazing Star, Dense ( <i>Liatris spicata</i> )	PD – WD
Blazing Star, Prairie ( <i>Liatris pycnostachya</i> )	PD - MWD
Blazing Star, Rough ( <i>Liatris aspera</i> )	MWD - ED
Butterfly Weed ( <i>Asclepias tuberosa</i> )	MWD – ED
Cardinal Flower ( <i>Lobelia cardinalis</i> )	PD – SPD
Clover, Alsike (CSL)	PD – WD
Clover, Ladino (CSL)	PD – WD
Clover, Red (CSL)	MWD – WD
Clover, White (CSL)	PD – WD
Coneflower, Gray-Headed ( <i>Ratibida pinnata</i> )	MWD – ED
Coneflower, Pale Purple ( <i>Echinacea pallida</i> )	MWD - ED
Coneflower, Purple ( <i>Echinacea purpurea</i> )	MWD - ED
Coneflower, Yellow ( <i>Ratibida pinnata</i> )	MWD - ED
Cup Plant ( <i>Silphium perfoliatum</i> )	PD - MWD
Entire-Leaf Rosinweed ( <i>Silphium integrifolium</i> )	MWD – ED
Foxglove Beardtongue ( <i>Penstemon digitalis</i> )	SPD - MWD
Golden Alexander ( <i>Zizia aurea</i> )	PD - MWD
Goldenrod, Riddell's ( <i>Solidago riddelli</i> )	SPD – ED
Goldenrod, Rigid ( <i>Solidago rigida</i> )	SPD - ED
Hoary Tick Trefoil ( <i>Desmodium canescens</i> ) (WSL)	MWD – ED
Illinois Bundlesflower ( <i>Desmanthus illinoensis</i> )	MWD - ED
Indigo, White Wild ( <i>Baptisia leucantha</i> )	MWD – ED
Indigo, Cream White ( <i>Baptisia lacteal</i> )	SPD - WD
Ironweed ( <i>Vernonia fasciculata</i> )	PD - MWD
Lead Plant ( <i>Amorpha canescens</i> ) (WSL - small shrub)	WD – ED
Common, Kobe, or Marion Lespedeza ( <i>Kummerowia striata</i> ) (CSL) <sup>1</sup>	WD – ED

Lespedeza (Bush Clover), Round-headed ( <i>Lespedeza Capitata</i> ) (WSL)	MWD – ED
Lespedeza, Slender ( <i>Lespedeza Virginica</i> ) (WSL)	MWD – ED
Milkweed, Butterfly ( <i>Asclepias tuberosa</i> )	MWD - ED
Milkweed, Swamp ( <i>Asclepias incarnata</i> )	PD – SPD
Milkvetch, Canada ( <i>Astragalus canadensis</i> )	SPD – WD
New Jersey Tea ( <i>Ceanothus Americanus</i> ) (small shrub)	MWD – ED
Nodding Bur Marigold ( <i>Bidens cernua</i> )	PD – SPD
Obedient Plant ( <i>Physostegia virginiana</i> )	PD – SPD
Ohio Spiderwort ( <i>Tradescantia ohiensis</i> )	SPD – WD
Partridge Pea ( <i>Cassia fasciculata</i> ) (WSL)	MWD – ED
Prairie Clover, Purple ( <i>Petalostemum purpureum</i> )	MWD - ED
Prairie Clover, White ( <i>Petalostemum candidum</i> )	MWD - ED
Prairie Dock ( <i>Silphium terebinthinaceum</i> )	SPD – ED
Rattlesnake Master ( <i>Eryngium yuccifolium</i> )	MWD - WD
Sneezeweed ( <i>Helenium autumnale</i> )	PD – SPD
Spotted Joe Pye Weed ( <i>Eupatorium maculatum</i> )	PD – SPD
Starry Solomon's Seal ( <i>Smilacina stellata</i> )	PD – ED
Sunflower, False ( <i>Heliopsis helianthoides</i> )	MWD – ED
Sunflower, Sawtooth ( <i>Helianthus grosseserratus</i> )	PD – WD
Tall Coreopsis ( <i>Coreopsis tripteris</i> )	SPD – ED
Trefoil, Birdsfoot (CSL)	MWD – WD
Tick Trefoil, Showy (a.k.a. Canada) ( <i>Desmodium canadense</i> )	SPD – WD
Vervain, Blue ( <i>Verbena hastata</i> )	VPD - SPD
Vervain, Hoary ( <i>Verbena stricta</i> )	MWD - ED
Virginia Blue Flag ( <i>Iris virginica</i> var. <i>shrevei</i> )	PD – SPD
Virginia Mountain Mint ( <i>Pycnanthemum vir.</i> )	SPD – WD
Wild Bergamot ( <i>Monarda fistulosa</i> )	SPD – WD
Wild Quinine ( <i>Parthenium integrifolium</i> )	MWD – ED
Wild Senna ( <i>Cassia hebecarpa</i> ) (WSL)	PD – WD

(WSL) = Warm Season Legume (CSL) = Cool Season Legume  
<sup>1</sup>Substitutes for (CSL) *Lespedeza* must be used on sites north of Interstate 70.

**Table 2 – Wildlife Benefits**

Plant	Wildlife Benefited	Comments
Asters and Fleabanes	Insects for birds, rabbits, grouse, turkey and songbirds	Small blue or white flowers
Baptisia spp. (Wild indigos)	Butterflies, hummingbirds, and songbirds	Sap used to be used to dye clothing purple.
Bee Balm (Monarda)	Butterflies, insects for birds, hummingbirds, and songbirds	Beautiful pinkish flowers
Black-eyed Susan	Insects for birds and songbirds	Easy to establish
Blazing Stars (Gayfeathers)	Butterflies, insects for birds, and songbirds	Beautiful blue flowers
Cassia spp. (Partridge Pea, Wild or Maryland Senna)	Insects for birds, quail, rabbits, and songbirds	Legume, beautiful yellow flowers, annuals
Coneflowers	Butterflies, insects for birds, and songbirds	Beautiful flowers
Goldenrods	Primarily insects for birds, but also songbirds and small mammals	Forms colonies
Illinois Bundleflower	Insects for birds, quail, and songbirds	Legume
Leadplant	Rabbits, songbirds, butterflies, and insects for birds	Legume - unique smoke-colored plant
Lobelias (incl. Cardinal Flower)	Insects for birds, hummingbirds, and songbirds	Beautiful deep red or blue flowers
Milkweeds (incl. butterfly weed)	Butterflies, insects for birds, and songbirds	Milkweed is THE larval food for monarch butterflies
Penstemons (Beardtongues)	Primarily insects for birds, but also songbirds and mammals	Beautiful light blue irregular flowers
Prairie Clovers	Small mammals, rabbits and songbirds, butterflies, and insects for birds	Pretty purple or white flowers
Rattlesnake Master	Insects for birds, perch for songbirds	Distinctive, waxy-green foliage
Round-headed Lespedeza (or Bush Clover)	Insects for birds, quail, turkey, rabbits, songbirds, and butterflies	Legume
Silphiums (compass plant, cup plant, and prairie dock)	Butterflies, hummingbirds, and songbirds	Stately, large plants with yellow flowers

Table references:

- American Wildlife & Plants: A Guide to Wildlife Food Habits; Martin, Zim, and Nelson; Dover Publications, Inc.
- IDNR Division of Fish & Wildlife
- North American Range Plants; J. Stubbendieck, et. al.; University of Nebraska Press
- Pasture and Range Plants, Fort Hays State University, Hays, KS

## REFERENCES

Indiana Department of Natural Resources, Division of Fish & Wildlife, Habitat Management Fact Sheet: *Legume Food Plots*

Natural Resources Conservation Service, Illinois Biology Technical Note No. 21, *Establishment and Management of Forbs in Grass Plantings*

Natural Resources Conservation Service, Watershed Science Institute, *Light Disking to Enhance Wildlife Habitat in Grasslands and Oldfields*

# Inter-seeding - Specifications Sheet

NAME: \_\_\_\_\_ FIELD NUMBER: \_\_\_\_\_  
COUNTY: \_\_\_\_\_ DATE: \_\_\_\_\_  
TRACT NUMBER: \_\_\_\_\_ ASSISTED BY: \_\_\_\_\_  
CONCURRENCE OF IDNR DISTRICT BIOLOGIST (recommended): \_\_\_\_\_

### Specific Recommendations

Wildlife species benefited: \_\_\_\_\_

Purpose of Inter-seeding: \_\_\_\_\_

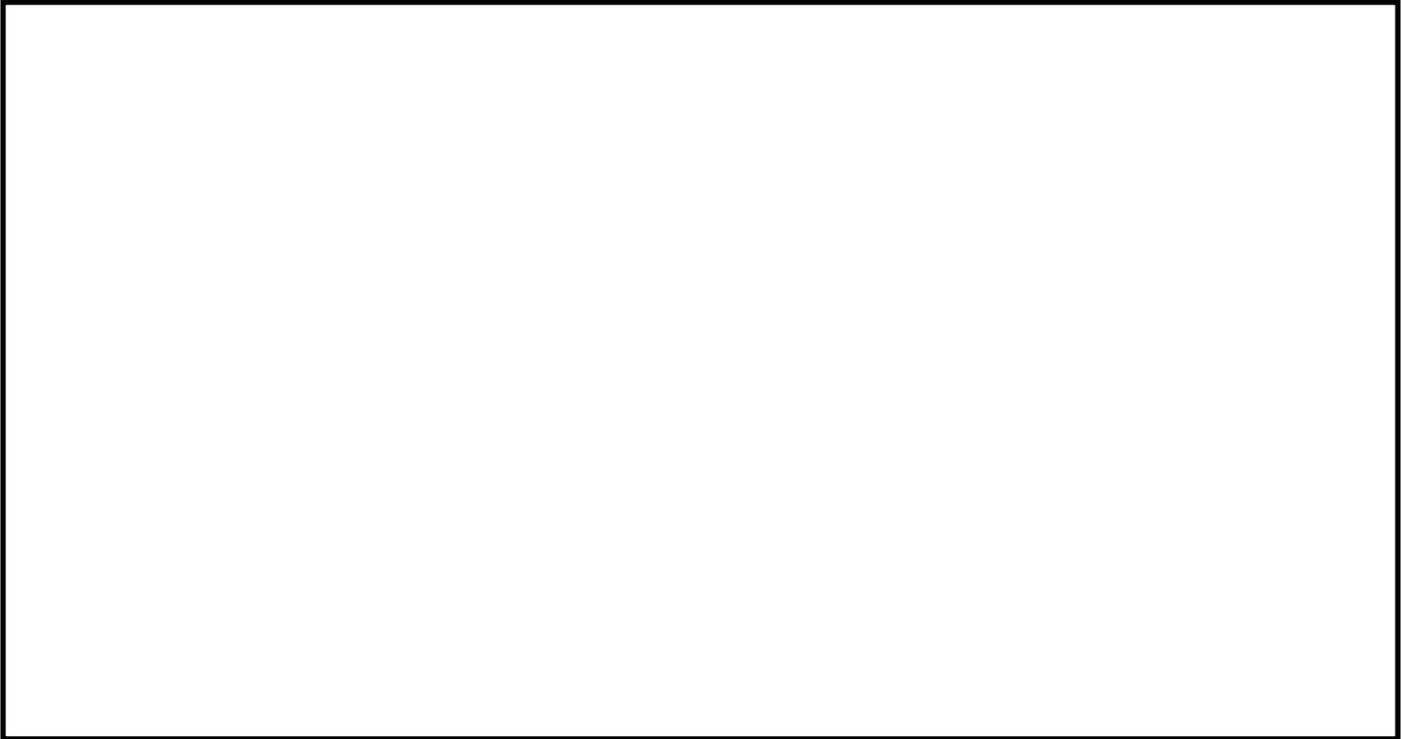
Date range (i.e. planting window): \_\_\_\_\_

Site preparation requirements: \_\_\_\_\_

Additional considerations:

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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### Site/Sketch Map



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