

CREP Practice CP23/CP23A

Natural Resources Conservation Service - Indiana – March 2016 (ver. 1.0)

Wetland Restoration Program Job Sheet



WETLAND RESTORATIONS

Wetland Restorations are applicable in areas that used to be wetlands, but have been converted to agricultural uses. Wetlands in Indiana include open water, marsh, wet meadow, shrub, and forested habitats. An important component of wetland restorations is the upland areas surrounding the wetland which provide a “buffer”. Restoring wetlands and their adjacent upland buffers provide soil erosion protection and water quality enhancement, as well as habitat for a variety of wildlife, especially waterfowl, upland game birds, and songbirds.

WHERE PRACTICE APPLIES

On fields that meet eligibility requirements for the Conservation Reserve Enhancement Program (CREP) as determined by the Farm Service Agency (FSA).

CREP POLICY

For both CP23 and CP23A restorations:

- The site must be technically suitable for wetland restoration.
- The practice must be located on one tract and may not span multiple tracts; tile location for the practice must be within the practice boundary.
- The hydrology of the site must be restored to the level determined by the producer in consultation with NRCS.
- Wetlands will be designed according to the Indiana (IN) NRCS Field Office Technical Guide (FOTG)

Wetland Restoration Standard (657), Wetland or Enhancement Standard (659) as appropriate.

- In most cases vegetation in the wetland area will be allowed to re-vegetate naturally. When regeneration of a diverse and native plant community is unlikely to occur within three (3) years, a planting plan will be developed.

For CP23-only restorations:

- The portion of the site to be restored (excluding buffer area) must have 51% hydric (wetland) soils that are located within the 100-year floodplain of a permanent river or stream.
- As determined by the Natural Resources Conservation Service (NRCS), an upland buffer with a maximum ratio of three (3) buffer acres to each restored wetland acre (i.e. 3:1 ratio) may be enrolled to protect water quality and provide wildlife habitat.

For CP23A-only restorations:

- The portion of the site being restored to wetland must have hydric (wetland) soils that are not located in the 100-year floodplain of a permanent river/stream.
- As determined by NRCS, an upland buffer with a maximum ratio of four (4) buffer acres to each restored wetland acre (i.e. 4:1 ratio) may be enrolled to protect water quality and provide wildlife habitat.

Upland buffers must be planted to either:

- a) Native grass mixes consisting of at least:
 - Two (2) native grass species, plus
 - One (1) legume species, plus
 - A minimum of one-half (½) pound of native forbs, consisting of at least five (5) species in approximately equal proportions by weight.
- b) Introduced grass mixes will consist of at least:
 - Two (2) introduced grass species that are considered beneficial to wildlife, plus
 - Two (2) legume species

Native forbs can be added to the mix to provide additional plant diversity, or to meet the needs of the target wildlife species.

- c) Native trees and shrubs

The IN NRCS [Seeding Calculator](#), using FOTG Standard 327 *Conservation Cover* (primary purpose wildlife), will be used to develop seeding mixes for this practice. Commonly used, suitable species can also be found in the [IN Biology Technical Note - Upland Wildlife Habitat](#). Tree and shrub species will be selected from the NRCS Soil Data Mart or Web Soil Survey by generating the Forestland Productivity or Windbreak and Environmental Plantings reports.

Any prepackaged mixes must be approved before seeding. Site-specific requirements are listed on the attached Specifications Sheet.

Good generic seeding mixes are listed below for landowners interested in quail and pheasant.

Quail Seeding Mix

Species	Rate (per acre)
Little Bluestem	2.0 (lbs.)
Big Bluestem	0.25 (lbs.)
Sideoats Grama	1.25 (lbs.)
Canada Wildrye	0.50 (lbs.)
Partridge Pea	4.0 (ozs.)
Annual Lespedeza ¹ , <u>or</u> ½ to 1 lb. forb mix (min. 5 species)	2.0 (lbs.)

¹ Best suited for sites south of Interstate 70

Pheasant Seeding Mix

Species	Rate (per acre)
Little Bluestem	2.0 (lbs.)
Big Bluestem	1.00 (lbs.)
Indiangrass	0.50 (lbs.)
Switchgrass	0.25 (lbs.)
Partridge Pea	4.0 (ozs.)
Forb mix (min. 5 species)	½ to 1 (lb.)

GRASS PLANTINGS

Companion/Nurse Crops

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

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*, 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* (see web link above).

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 to 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 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 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*

SEEDING DATES

Selected species will be planted within the dates in the specification sheet that will be provided for the site.

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. 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. Inexpensive seed (unimproved varieties) that will have no significant negative impact on the purpose of the seeding may also be used.

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 (see table below). 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. Seed should

be drilled uniformly at a proper seeding depth for the desired species.

Seeding depth guidance

Groups	Seed Size (seeds/lb.)	Optimum (inches)	Max. (in.)
Brassicas, clovers, small seeded legumes, small seeded grasses, native forbs	150,000 – 500,000	¼	½
Vetches, sorghums, wildryes, trefoils, native legumes, radishes	50,000 – 150,000	½	¾
Cereal grains	12,000 – 50,000	¾	1
Beans, peas, corn	1500 – 12,000	1 ½	2

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:

- 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. This method does not include a seedbed preparation. This is most commonly used during the dormant seeding period.
- 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 cover crop species or combination mixes into relatively light (such as soybean) and weed free crop residues or to establish vegetation into standing crops.
- 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).

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.

Operation and Maintenance

After the Final Status Review or three (3) years (whichever comes first), maintain the planting according to your CRP 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 CRP 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.

Native grasses will not be mowed 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

Weed Control

It is important to plant tree seedlings into a weed free area to help ensure survival and maximum growth of the trees. Use herbicides or tillage to eliminate competing vegetation as recommended in a site specific plan. Weed control efforts should begin prior to planting and may require multiple applications in both the fall and the spring prior to planting and during tree planting. Cost share for weed control is available as part of the tree establishment expenses. Mowing is

usually not recommended for weed control because it encourages grass competition and mowing equipment can damage tree seedlings. However in some specific instances it may be recommended in a site specific plan.

For information on herbicide controls, contact a local consultant or Purdue Extension Specialist. **Always apply herbicides according to labeled directions.**

If necessary for weed suppression or erosion control, seed a temporary cover of native *Elymus* species (Wildrye) adapted to the site.

Cost share is authorized for an additional weed control application within 24 months after planting bottomland timber on wetlands.

Operation and Maintenance

Noxious weeds and other undesirable plants, insects, and pests shall be controlled, including such maintenance as necessary to avoid detrimental effects to the surrounding land.

After the Final Status Review or three (3) years (whichever comes first), maintain the planting according to your CRP conservation plan. Maintenance activities are allowed only on a spot basis and only if necessary to maintain stand health, maintain stand diversity, or control pests that will damage the CRP cover or adjacent lands. MOWING and other maintenance activities are not authorized between April 1 to August 1 to protect ground-nesting wildlife (i.e. - the Primary Nesting and Brood-Rearing season). If maintenance activities are needed during these times, the FSA County Committee **must** approve the maintenance activity **prior to** the activity occurring.

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

Exclude all acres from haying and grazing year round, unless authorized. Fences may need to be constructed and maintained to exclude livestock throughout the entire year.

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

Check survivability of planted species after 3 years to insure that the desired stocking rate for the site is present, usually 70% survival of the planted rate. 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) so that 300 acceptable woody plants per acre are established.

MID-CONTRACT MANAGEMENT

Mid-Contract Management (MCM) is required on this practice. If the CRP acres are less than 5 acres, the entire acreage can be managed in a single year; otherwise, the maximum amount that can be disturbed during any one year is ½ of the contract acreage. For maximum habitat value, disturb no more than 1/3 of the contract acreage in any given 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.

Areas devoted to grass have the following options:

- Prescribed Burning

- Strip Disking
- Strip Spraying
- Inter-seeding forbs/legumes/pollinator habitat

Areas devoted to trees have the following options:

- Inner Seedling Planting (re-enrollments)
- Inter-seeding forbs/legumes/pollinator habitat
- Follow-up Weed Control
- Pruning
- Thinning (re-enrollments)

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.

CREP Wetland Restoration (CP-23/CP23A) SPECIFICATIONS SHEET

Landowner:				County:	
Farm:	Tract:	Field(s):	Acres:	Grasses: Firebreak: Trees: Shrubs:	Date:

Recommended Species and Seeding Rates

Use the NRCS *Indiana Seeding Calculator* for seeding rates. All rates are in Pure Live Seed (PLS)

	Grass Mixes	Rate Lb./acre	Total = (Rate X Acres)		Grass Mixes	Rate Lb./acre	Total = (Rate X Acres)
<input type="checkbox"/>			Lb.	<input type="checkbox"/>			Lb.
			Lb.				Lb.
			Lb.				Lb.
			Lb.				Lb.
			Lb.				Lb.
	Forb Mixes	Rate Oz./acre	Total = (Rate X Acres)		Forb Mixes	Rate Oz./acre	Total = (Rate X Acres)
<input type="checkbox"/>			Oz.	<input type="checkbox"/>			Oz.
			Oz.				Oz.
			Oz.				Oz.
			Oz.				Oz.
			Oz.				Oz.
			Oz.				Oz.
	Shrubs	Rate No./acre	Total = (Rate X Acres)		Shrubs	Rate No./acre	Total = (Rate X Acres)
<input type="checkbox"/>			No.	<input type="checkbox"/>			No.
			No.				No.
			No.				No.
	Trees	Rate No./acre	Total = (Rate X Acres)		Trees	Rate No./acre	Total = (Rate X Acres)
<input type="checkbox"/>			No.	<input type="checkbox"/>			No.
			No.				No.
			No.				No.

	Species/Activity	Rate Lb./acre	Total = (Rate X Acres)
<input type="checkbox"/> Firebreaks:			Lbs.
			Lbs.
	<input type="checkbox"/> Establish a Bare-Ground Firebreak by disking the Fall & Spring prior to Prescribed Burning Disked areas will be re-seeded after each Prescribed Burn		

NOTES:

Site Preparation - BEFORE Planting in Year:

<input type="checkbox"/> Herbicide (per Label):	Dates:
<input type="checkbox"/> Tillage:	
<input type="checkbox"/> Prescribed Burning:	
<input type="checkbox"/> Temporary Seeding:	
<input type="checkbox"/> Other:	
NOTES:	

Planting Year:

<input type="checkbox"/> Planting Method for Grasses:	Date:
<input type="checkbox"/> Planting Method for Trees and Shrubs:	Date:
<input type="checkbox"/> Planting Method for Firebreak:	Date:
If unforeseen circumstances prohibit planting by this date, please contact the local NRCS office as soon as possible.	
NOTES:	

Post-Planting Maintenance

Mowing: BEFORE final Status Review, or up to three (3) years after planting, mow to a minimum height of six (6) to eight (8) inches high when the weeds are 12 inches taller than the planted grasses as needed

*AFTER final Status Review, mow to a minimum height of six (6) to eight (8) inches

Herbicide* (per Label):

Other:

*NOTE: After the final Status Review has been issued, or 3 years after planting, weed control and other maintenance activities will not occur between April 1 - August 1, and will occur on a "spot" basis only, unless prior approval is granted by the FSA County Committee.

MID-CONTRACT MANAGEMENT - STARTING IN YEAR:

see the attached Mid Contract Management Job Sheet for details

For CRP Mid-contract Management job sheets see:
<http://www.in.nrcs.usda.gov/programs/CRP/crphomepage.html>

Hydrology Restoration in Year:

ORIGINAL HYDROLOGY &/or WETLAND FUNCTIONS WERE ALTERED BY:	AND WILL BE RESTORED BY: (see the attached map and engineering design for details)
<input type="checkbox"/> Subsurface drain tile	<input type="checkbox"/> Plugging feet of subsurface drain tile * <input type="checkbox"/> Installing feet of dike to retain surface water
<input type="checkbox"/> Surface drains	<input type="checkbox"/> Installing ditch plugs * <input type="checkbox"/> Installing feet of dike to retain surface water
<input type="checkbox"/> Grading / leveling / fill	* <input type="checkbox"/> Removing cubic yards of fill
<input type="checkbox"/> Traditional agricultural activities (Farmed Wetlands)	<input type="checkbox"/> No longer farming <input type="checkbox"/> Seeding the area to native vegetation (see page 4)
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:

*NOTE: Documentation must be included that shows the wetland was altered by grading, filling, etc., and that digging, dredging, macrotopography, dikes, etc. are needed to restore the original hydrology.

Dike Seeding (acres)

All rates are in Pure Live Seed (PLS)

GRASS MIX (see map for location)	Rate Lb./acre	TOTAL = (RATE X Acres)	GRASS MIX (see map for location)	Rate Lb./acre	TOTAL = (RATE X Acres)
<input type="checkbox"/>		Lb.	<input type="checkbox"/>		Lb.
		Lb.			Lb.
		Lb.			Lb.
		Lb.			Lb.
		Lb.			Lb.
		Lb.			Lb.

Recommended additional wildflowers include:

Additional Information