

Habitat Buffers for Upland Birds Program Sheet



PURPOSE

Habitat buffers for upland birds are strips of vegetation established around the edges of crop fields to provide habitat for bobwhite quail, ring-neck pheasant, and other upland birds. Many of these birds have suffered population declines due to loss of habitat. These buffers can provide important nesting, brood rearing and escape cover while also serving as travel corridors between areas of suitable habitat. In addition to habitat for upland birds, these buffers may provide habitat for other animals and may limit sediment, nutrients, pesticides and other contaminants from entering streams and other water bodies.

By diversifying vegetation in these buffers, desirable habitat will develop. The growth forms of a variety of species, combined with management to increase open cover, will provide food sources in the forms of seed, insects and soil invertebrates. Shrubs may be included to diversify cover and food, but are optional.

It is highly recommended that the local Indiana Department of Natural Resources (IDNR) District Biologist be consulted for technical assistance.

See: <http://www.in.gov/dnr/fishwild/2716.htm>

It is important that site selection and layout, seeding mixture selection, and other critical planning issues be performed correctly in order to maximize population gains.

WHERE PRACTICE APPLIES

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

CRP POLICY

Buffers can be established around field edges on any eligible cropland. Buffers can be planted along one or more sides of a field, however establishing a buffer around the entire field should be considered and is highly encouraged. CP33 is considered year-round habitat, and as such, should be considered “hands off” from any farming operations.

- CP33 should be designed to be adjacent to cropland and is not intended as a whole field retirement practice. The “infeasible to farm” rule does not apply. See FSA 2-CRP (Rev. 5) for additional guidance.
- CP33 can be established through either natural succession, or through planting a mixture of native warm season grasses (WSG), legumes, and forbs.
- The only cool season grasses allowed under this practice are: Canada, Riverbank, and Virginia Wildrye. Consider using the Wildrye species when shading, such as where fields are adjacent to woodlands, is a concern.
- Limited tree and shrub plantings, on up to 10% of the practice acreage, are allowed.
- Buffer widths will be a minimum of 30 feet and up to a maximum average width of 120 feet (measured from the edge of the field).
- **Habitat buffers will not be grazed, hayed, or mowed during the life of the contract.**
- Shrub rows will be six (6) feet apart and spaced three (3) to four (4) feet apart within each row.
- Habitat buffers for upland birds do not include food plots. Food plots will not be established within habitat buffers for upland birds.
- Habitat buffers for upland birds will not be used as turn rows, lanes, roads, or for storage of crops or equipment.

Grassland bird populations (especially quail) will be monitored on some of CP33 practices to and evaluate the success of this practice. These activities will be conducted by the IDNR Division of Fish and Wildlife. Landowners are strongly encouraged to cooperate in this effort.

SELECTION OF RATES AND SPECIES

The [IN Natural Resources Conservation Service \(NRCS\) Seeding Tool](#) and/or tables found in the Field Office Technical Guide (FOTG) Standard 327 *Conservation Cover* (primary purpose wildlife) will be used when developing seeding mixes and to determine tree and shrub species for this practice. Commonly used, suitable species can also be found in the [IN Biology Technical Note - Upland Wildlife Habitat](#). Any prepackaged mixes must be approved before seeding. Site-specific requirements are listed on the attached Specifications Sheet.

Below are good generic seeding mixes for 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.)

NATURAL SUCCESSION

A unique feature of CP33 is that it allows natural succession to be used as an establishment method.

- Agricultural management practices will be terminated to allow natural plant succession to occur.



- Spot spraying will be used where noxious weeds, such as Canada thistle and Johnsongrass, or other invasive species exist.
- Natural succession will be planned for the least erosive parts of fields and will not be planned where gully formation is a problem.
- See the NRCS job sheet *CRP Mid-Contract Management: Inter-seeding* for additional guidance on inter-seeding legumes (and forbs) at: http://www.in.nrcs.usda.gov/programs/CRP/mid-contract_management.html.
- Consider including a light legume seeding to enhance the wildlife value. See table below.

Legumes

Species	Rate (lbs./ac)
Alfalfa	3
Alsike Clover	1
Ladino Clover	0.5
Red Clover	2.5
Annual Lespedeza ¹	2.5

¹ Best suited for sites south of Interstate 70.

- See IN FOTG Standard 647 - *Early Successional Habitat Development/Management* for additional guidance at: http://efotg.sc.egov.usda.gov/references/public/IN/647_Early_Successional_Habitat_Development-Management.pdf.

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), 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.

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* <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*.

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 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*

SEEDING DATES

Selected species will be planted within the dates specified in table below.

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.

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 (such as 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 to be planted. Generally this does not exceed one-fourth (1/4) inch. Seeding native grasses deeper than one-fourth (1/4) 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-eighth (1/8) to one-half (1/2) 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 (1/3) 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).

WEED CONTROL DURING ESTABLISHMENT PERIOD

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.

MID-CONTRACT MANAGEMENT

Mid-Contract Management (MCM) is required on this practice. The table below 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 (1/3) of the area for each of three (3) years if they so choose.

MCM Disturbance Area

	MAXIMUM AREA TO BE DISTURBED
5 acres or more	1/3 of the area each of 3 years
Less than 5 acres	1/2 of the area each of 2 years, <u>or</u> total area in 1 year

MCM activities will be avoided on environmentally sensitive areas including:

1. Concentrated flow areas,
2. Critical areas,
3. Within the first 20 feet of a practice that borders a water resource to avoid water quality resource concerns, and
4. 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>.

Prescribed Burning: Where prescribed burning may be the Mid-contract Management option, the following apply:

1. IN FOTG Standard *Prescribed Burning (338)*, and *Firebreak (394)*, will be followed.
2. See CRP Mid-Contract Management Job Sheet: *Prescribed Burning* for additional guidance.

MANAGED HAYING AND GRAZING

CP33 is not eligible for Managed Haying and Grazing.

SHRUBS AND TREES

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.

Planting: Bare rooted stock (seedlings) shall not be planted when the soil is frozen or excessively dry and will be planted with the root collars approximately at or slightly below the ground line. 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.

Bare rooted stock will be planted in the spring after the ground thaws, but no later than June 1.

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.

SHRUBS AND TREES (CONTINUED)

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 three (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: Activities consistent with customary forestry practice, such as pruning, thinning or timber stand improvement may be performed to enhance the health and vigor of the CP33 practice. All management activities must be completed according to NRCS Standards and Specifications as found in the FOTG and CRP policy. Appropriate activities may be added to new or existing contracts by the IDNR, Division of Forestry, District Forester or TSP. To reduce the potential impact to the Indiana Bat, management activities are restricted during March 1 – September 30.

Mid contract management activities are eligible for cost share with prior approval from the local FSA office.

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CP33 SPECIFICATIONS SHEET

Landowner:				County:					
Farm:		Tract:		Field(s):		Acres: (see LAYOUT below)		Date:	

VEGETATION PLANTING

LAYOUT	Field border		Field border		Field border		Field border	
Border width (ft.)								
Border length (ft.)								
Grass/Forb area (ac.)								
Tree/Shrub area (ac.)								
Fire Break area (ac.)								
GRASS SPECIES	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)
1:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
2:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
3:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
4:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
5:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
FORB/LEGUME MIX (minimum 5 species)	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)
1:		0.0		0.0		0.0		0.0
2:		0.0		0.0		0.0		0.0
3:		0.0		0.0		0.0		0.0
4:		0.0		0.0		0.0		0.0
5:		0.0		0.0		0.0		0.0
SHRUB/TREE MIX (maximum 10%)	Rate No./Ac.	Total = (Rate X Ac.)	Rate No./Ac.	Total = (Rate X Ac.)	Rate No./Ac.	Total = (Rate X Ac.)	Rate No./Ac.	Total = (Rate X Ac.)
1:		0.0 No.		0.0 No.		0.0 No.		0.0 No.
2:		0.0 No.		0.0 No.		0.0 No.		0.0 No.
3:		0.0 No.		0.0 No.		0.0 No.		0.0 No.
4:		0.0 No.		0.0 No.		0.0 No.		0.0 No.
5:		0.0 No.		0.0 No.		0.0 No.		0.0 No.
FIREBREAKS	Rate No./Ac.	Total = (Rate X Ac.)	Rate No./Ac.	Total = (Rate X Ac.)	Rate No./Ac.	Total = (Rate X Ac.)	Rate Lb./Ac.	Total = (Rate X Ac.)
1:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.
2:		0.0 Lb.		0.0 Lb.		0.0 Lb.		0.0 Lb.

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:	

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:	

GRASS POST- PLANTING MAINTENANCE
<input type="checkbox"/> Mowing: <u>BEFORE</u> final Status Review, mow to a <u>minimum</u> height of six (6) to eight (8) inches high <u>when the weeds are 12 inches taller than the planted grasses</u>
<input type="checkbox"/> Herbicide* (per label):
<input type="checkbox"/> Other:
*NOTE: <u>After</u> the final Status Review has been issued, weed control and other maintenance activities will not occur between <u>April 1 - August 1</u> , and will occur on a "spot" basis <u>only</u> , unless prior approval is granted by the FSA County Committee.

NATURAL SUCCESSION AREAS
Temporary cover: Legumes/Forbs to be inter-seeded:
Maintenance for Noxious Weeds and Woody Growth Control:
<input type="checkbox"/> Herbicide:
<input type="checkbox"/> Other:
Note: After the final status review has been completed, maintenance activities are allowed only on a spot basis and only with prior approval of the Farm Service Agency (FSA) County Committee. Maintenance activities must be conducted between August 1 - April 1 unless <u>prior approval</u> for work outside these dates has been given by FSA County Committee. Mowing is not allowed as maintenance or as a mid-contract management activity unless used as preparation for prescribed burning, strip spraying, or strip disking.
Additional guidance:

Mid-Contract Management Starting In Year:
<input type="checkbox"/> Prescribed Burning: according to an approved burn plan Burning will not occur more than once every three (3) years on the same acreage.
<input type="checkbox"/> Strip Spraying: Spraying will not occur more than once every three (3) years on the same acreage.
<input type="checkbox"/> Strip Disking: Disking will not occur more than once every three (3) years on the same acreage.
<input type="checkbox"/> Inter-seeding: Inter-seeding will not occur more than once every three (3) years on the same acreage.
<input type="checkbox"/> The Specific Mid Contract Management Activity will be decided by the participant in the scheduled year based on condition of the vegetation, site considerations, capabilities of the participant, etc. Treatment will not occur more than once every three (3) years on the same acreage. Reimbursement will be dependant on the activity(s) performed based on local FSA Not-To-Exceed rates.

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