

Indiana – November 14, 2005

Habitat Buffers for Upland Birds

DESCRIPTION

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 (<http://www.in.gov/dnr/fishwild/huntguide1/wbiolo.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.

PRACTICE REQUIREMENTS

Habitat buffers for upland birds can be established through either natural succession, or through planting a mixture of native warm season grasses (WSG), legumes, and forbs. Limited tree and shrub plantings, on up to 10% of the practice acreage, are allowed. If shrubs are planted, rows will be six (6) feet apart and spaced three (3) to four (4) feet apart within each row. The Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) Standard 645 - *Upland Wildlife Habitat Management* (<http://www.nrcs.usda.gov/technical/efotg/>) will be used when developing seeding mixes and to determine tree and shrub species for this practice.



Photo by Roger Hill

Food plots will not be established within the habitat buffers.

There are two options allowed for the minimum widths of habitat buffers:

- The first option has a minimum width of 30 feet, and does not allow any agricultural disturbance activities. This option is considered year-round habitat, and as such, should be considered "hands off" from any farming operations.
- The second option has a minimum width of 60 feet, but the area can be used intermittently as turn rows and as a road/lane (but not as a haul road).

Neither area can be mowed, grazed, hayed, sprayed or used for storage of equipment or hay bales. However, crossing the buffer for normal farming operations to access the field is permitted. The maximum average width for habitat buffers is 120 feet (measured from the edge of the field).

Habitat buffers for upland birds 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. Buffers should be designed to be adjacent to cropland and is not intended as a whole field retirement practice.

ESTABLISHMENT

Natural Succession A unique feature of this practice 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.
- Natural succession will be planned for the least erosive parts of fields and will not be planned where gully formation is a problem.
- A temporary cover, such as winter wheat or oats, will be established where erosion is a concern or where noxious weeds are expected to be a problem. See Standard 327 – *Conservation Cover* (<http://www.nrcs.usda.gov/technical/efotg/>) for additional guidance.
- Spot spraying will be used where noxious weeds, such as Canada thistle and Johnsongrass, or other invasive species exist.
- Consider including a light legume seeding to enhance the wildlife value. See Table 1 below.

Table 1 - 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 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/technical/biology/biology.html>.
- See Standard 647 - *Early Successional Habitat Development/Management* (August 2004) for additional guidance. Standard 647 is available at <http://www.nrcs.usda.gov/technical/efotg/>.

Planning and Site Preparation Successful establishment of warm season grasses (WSG) begins the fall before seeding. Existing cover must be eliminated by spraying or tillage. Both methods will be most successful if started in the fall. If spraying, work with a local consultant to determine the best herbicide combination and apply it at the appropriate time in the fall. Consider using a cover crop if conventional tillage is used in the fall to prepare the site.

Seeding Dates For conventional and no-till seeding, warm season grasses will be seeded between April 15 and June 1. WSG need adequate soil moisture and warm soil temperature (at least 50 degrees) to germinate. The June 1 cutoff date can be adjusted somewhat based on local conditions, assuming there is adequate moisture for seed germination and growth.

Do not seed warm season grasses in the fall. They require a minimum of eight weeks growth between emergence and the first frost to become established enough to survive the winter. Emergence can take 21 to 28 days after seeding for many species. A dry fall and early frost may not provide the required time for establishment.

Table 2 below is an excellent species mix for quail.

Table 2 – Grass/Forb Mix

Species	Rate (lbs./acre)
Little Bluestem	2.0
Indiangrass	0.50
Sideoats Grama <u>or</u> Canada Wildrye	0.75 1
Annual Lespedeza ¹ , <u>or</u> ½ to 1 lb. of a forb mix ² (min. 5 species)	2

¹ Best suited for sites south of Interstate 70

² See Standard 645 - *Upland Wildlife Habitat Management*

No-till Seeding Use a drill designed to handle the light fluffy warm season grass seed. Conventional drills will not work successfully with fluffy seeds such as Big Bluestem, Little Bluestem, Indiangrass, and several other WSG. Conventional drills will work with Switchgrass seed. Many Quail Unlimited and Pheasants Forever chapters, as well as local Soil and Water Conservation Districts, have WSG drills available.

Conventional Seeding Work the seedbed to a depth of three (3) inches. Level and firm the seedbed by disking and follow by culti-packing. Drill to a depth no greater than ¼ inch (1/8 inch is better). Seeding WSG deeper than ¼ inch will lead to potential failure. Seed may be broadcast if accomplished in a uniform manner. Pre-mixing the seed with 200 lbs. per acre of pelletized lime and utilizing an airflow applicator is effective. The seedbed should be culti-packed before and after seeding. It is acceptable to see up to ⅓ of the seed on the soil surface. Wind speed should be less than 15 m.p.h. when using this method.

Frost Seeding Due to the high cost of seed and lower germination rate, frost seeding should be considered a risky option. Establish a nurse crop of wheat the fall before frost seeding. Use

conventional tillage to establish the crop and seed at the rate of ½ bushel per acre. Seed the WSG into the standing wheat in the early spring when the soil is “honey combing” (natural soil heaving from the repeated freezing and thawing). WSG are so light they need some kind of “carrier” to help get an even distribution. Pelletized lime at 200 lbs. per acre is an effective carrier. Mix the WSG and lime thoroughly and spread with an airflow seeder. When frost seeding use a half rate and then double seed, making the second pass perpendicular to the first. Use a culti-packer to firm the seedbed if the freeze thaw cycle seems to be ending. A specialized hand seeder can be used on small plots. Wind speed should be less than 15 mph.

Lime and Fertilizer Lime and fertilizer should not be applied to warm season grasses at establishment unless a current soil test shows phosphorus (P) and potassium (K) are in the deficient range or the pH is 6.1 or less. Apply only enough P and K to bring the soil test levels to the moderate range and only apply one ton of lime per acre if the pH is less than 6.1. Additional lime and fertilizer above these rates will encourage weeds and greatly reduce the chance of establishing a successful stand of WSG. Do not apply any nitrogen (N) during establishment.



Indiangrass

Use of Herbicides New herbicides have been introduced for use with WSG. They are very effective in controlling weeds during the establishment year. Producers should contact a local consultant who can provide recommendations on proper herbicides and rates.

A request to spot spray or spot mow noxious weeds (such as Canada thistle and Johnsongrass), or other invasive species, can be made to the county NRCS office during the establishment period only.

Shrubs Shrub (and tree) plantings will follow the planting guidelines found in Standard 612 - *Tree/Shrub Establishment* (<http://www.nrcs.usda.gov/technical/efotg/>).

OPERATION AND MAINTENANCE

After the final status review, maintenance of the planting will follow the 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 cover or adjacent lands.

Mowing is not an authorized maintenance activity on acreage devoted to this practice. If maintenance activities must be performed to control woody vegetation or noxious weeds, a waiver must be requested from the NRCS to perform spot maintenance. This could include spot herbicide treatment or hand removal of volunteer trees. **Mowing as maintenance for weed control or for cosmetic purposes is prohibited.**

Other maintenance activities are prohibited between March 1 and July 15 (the primary nesting season for grassland birds). It is also highly recommended, but not required, to delay any disturbance activities until after August 15, thus reducing the chance of harming fledgling birds and other young wildlife. Maintenance activities are allowed only if the NRCS has approved the maintenance activity prior to the activity taking place.

Check for erosion within the buffer. If rill or gully erosion occurs, reshape and reseed the area affected.

Disturbance Activities It is highly encouraged, but not required, that disturbance activities be scheduled for habitat buffers. Management activities include prescribed burning (with an approved burn plan), strip disking, inter-seeding forbs, and strip spraying. These activities will ensure plant diversity, wildlife habitat, and protection of soil and water resources. For specific job sheets see: <http://www.in.nrcs.usda.gov/technical/biology/biology.html>

Mowing is not allowed as a disturbance activity unless used as preparation for prescribed burning, strip spraying, or strip disking.

Disturbance activities should start three years after cover establishment. Only ⅓ of the acreage may be disturbed in any one year unless it is specified in the conservation plan. If the acreage is small enough that disturbing ⅓ of the acreage each year is not feasible, then ½ of the acreage can be scheduled upon discretion of the NRCS conservation planner.

If the site conditions are such that an additional disturbance is needed to maintain an early successional habitat, then an additional rotation of disturbance activities will be scheduled. The determination of how often the activities shall be performed is a decision of the NRCS conservation planner.

HABITAT BUFFERS FOR UPLAND BIRDS SPECIFICATIONS SHEET

For:	Farm #:
Field(s):	Tract #:
Planned By:	Date:

SEE ATTACHED MAP FOR HABITAT BUFFER AREA LOCATIONS

GRASS-FORB SEEDING AREAS				
Layout	Field border 1	Field border 2	Field border 3	Field border 4
Border width (feet)				
Border length (feet)				
Area (acres)				
Grass Species				
1:				
2:				
3:				
4:				
Total Grass (PLS pounds/acre)				
Perennial Forb Mix (minimum 5 species)				
1:				
2:				
3:				
4:				
5:				
Total Forbs (PLS ounces/acre)				
Planting				
<input type="checkbox"/> Tillage:			Date:	
<input type="checkbox"/> Herbicide:			Date:	
<input type="checkbox"/> Herbicide:			Date:	
<input type="checkbox"/> Lime/Fertilizer:			Date:	
Planting Method:			Date:	
Post-Planting Maintenance for Noxious Weeds and Woody Growth Control				
<input type="checkbox"/> Herbicide:			Date:	
<p>Note: Maintenance activities are allowed only on a spot basis. Maintenance activities must be conducted between July 15 and March 1 unless <u>prior approval</u> for work outside these dates has been given by NRCS. Mowing is not allowed as maintenance or as a disturbance activity unless used as preparation for prescribed burning, strip spraying, or strip disking.</p>				
Disturbance Activities				
Starting in year:	Portion of field to be disturbed:	Repeated every	years	
<input type="checkbox"/> Strip Disking		<input type="checkbox"/> Prescribed Burning		
<input type="checkbox"/> Strip Spraying		<input type="checkbox"/> Inter-seeding Forbs		
Additional guidance:				

NATURAL SUCCESSION AREAS

Temporary cover:
Legumes/Forbs to be inter-seeded:

Maintenance for Noxious Weeds and Woody Growth Control

Weed control

- Herbicide:
 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 NRCS. Maintenance activities must be conducted between July 15 and March 1 unless prior approval for work outside these dates has been given by NRCS. **Mowing is not allowed as maintenance or as a disturbance activity unless used as preparation for prescribed burning, strip spraying, or strip disking.**

Disturbance Activities

Starting in year: Portion of field to be disturbed: Repeated every years

- | | |
|-----------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Strip Disking | <input type="checkbox"/> Prescribed Burning |
| <input type="checkbox"/> Strip Spraying | <input type="checkbox"/> Inter-seeding Legumes/Forbs |

Additional guidance:

SHRUB/TREE PLANTING AREAS (optional)

Acres of shrubs or trees to be planted:

Recommended species

Planting

Site Preparation

- Tillage:
 Herbicide:

Planting Date: Plant Spacing: ft. x ft.

Planting Method: Row Spacing: ft.

Post-Planting Maintenance

Weed control

- Herbicide:
 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 NRCS. Maintenance activities must be conducted between July 15 and March 1 unless prior approval for work outside these dates has been given by NRCS.

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