

PRACTICE SPECIFICATION**FIELD BORDER****BOBWHITE QUAIL HABITAT****1. SCOPE**

Field borders in a cropland-dominated landscape can serve as habitat for Northern bobwhite quail, other upland game birds, and wildlife species in general. These field borders provide areas of undisturbed habitat which supply nesting, brood-rearing, loafing, feeding, and winter cover for bobwhite quail. They can also provide secondary benefits to soil and water conservation on cropland.

2. SIZE AND LOCATION

In order to provide suitable habitat for bobwhite quail, field borders should be a minimum of 30 feet wide.

See Appendix A for information on the range of Northern bobwhite quail in Nebraska. Field borders can be used in areas outside of bobwhite quail range to benefit other wildlife species.

3. SITE PREPARATION, SEEDING RATES, SEED SOURCE REQUIREMENTS

Refer to Herbaceous Design Procedures 550DP for requirements on establishment of herbaceous vegetation including site preparation, cover crops or other appropriate cover, planting methods, and timing. Refer to Range Planting (550) or Pasture and Hay Planting (512) Standards/Specifications for species adaptation and selection.

Seeding rates will depend upon site characteristics. If the potential for erosion does not exist, a reduced seeding rate is preferred as outlined within the Early Successional Habitat Development/Management (647) – Low Density Seeding Specification (10 PLS/ft²). In other instances, standard seeding rates found within the Range Planting (550) or Pasture and Hay Planting (512) Standards/Specifications may be used (20 PLS/ft² and 30 PLS/ft², respectively).

When sedimentation from adjacent cropland is expected, seeding rates and other requirements of the Filter Strip (393) Standard/Specification will be followed (40 PLS/ft²). When the site is subject to excessive concentrated flow, seeding rates and other requirements of the Critical Area Planting (342) Standard/Design Procedures will be followed (60 PLS/ft²) along with appropriate measures such as mulching. In addition, if the field border will convey runoff from terraces, diversions, or other water concentrations used to prevent gully erosion, the field

border will be designed according to the Grassed Waterway (412) Standard/Specification.

Refer to Grass and Forb Seed Source Requirements, Pure Live Seed Calculations, Table 2, and Certified Perennial Grass Varieties Recommended for Nebraska in Section II of the FOTG - Pasture and Hayland Interpretations for additional information on species and variety adaptation and seed source requirements.

4. HERBACEOUS VEGETATION SPECIES COMPOSITION

Seeding mixtures must contain a minimum of 25% legumes or forbs in order to provide diversity and brood-rearing cover attributes. A minimum of three grass species and one legume or forb is required but additional species diversity is desirable. At least one of the grass species must be a bunchgrass to provide openings at ground level needed by bobwhite quail. Refer to Table 1 for recommendations. On lands subject to erosion, the seeding mixture must contain a minimum of 25% sod-forming grass.

Table 1. Bunchgrass Species Recommendations

| <u>Bunchgrass Species*</u> | <u>Origin</u> | <u>Season</u> |
|----------------------------|---------------|---------------|
| Little Bluestem | Native | Warm-Season |
| Sideoats Grama** | Native | Warm-Season |
| Porcupinegrass | Native | Cool-Season |
| Prairie Junegrass | Native | Cool-Season |
| Canada Wildrye | Native | Cool-Season |
| Orchardgrass | Introduced | Cool-Season |
| Timothy | Introduced | Cool-Season |

* - Refer to 512, 550, and/or Section II – Pasture and Hayland Interpretations for species adaptability requirements.

** - Sideoats grama is a sod-forming grass with bunchgrass characteristics due to short rhizomes.

Smooth brome, tall fescue, reed canarygrass, and creeping foxtail are not suited for use with this practice.

Existing herbaceous vegetation that provides poor habitat conditions can be enhanced by using techniques noted in Operation and Maintenance.

Appendix B contains examples of suitable seeding mixtures using native grasses to be used for field borders that are designed to benefit bobwhite quail habitat. Refer to 512, 550 and/or Section II.

5. WOODY VEGETATION COMPOSITION

Planting or natural regeneration of woody vegetation should be limited to native shrubs suited to the site. The addition of this habitat component is critical to

bobwhite quail and must be installed when suitable woody vegetation is not present within or immediately adjacent to all portions of the field border and at a distance not to exceed 1/8 mile. The optimum dimension of a shrub thicket to benefit bobwhite quail is 30 feet by 50 feet. This type of habitat can also be replicated by cutting mature trees and placing them within the field border as described under "Management to Enhance Existing Field Borders" at the end of this specification.

For more information on appropriate shrub species, see Tables 1-10 under Windbreak Interpretations in Section II of the FOTG for site adaptability and Table 11 for origin, wildlife values, and other attributes. Selected shrub species should only include those listed as beneficial to upland game birds. Areas devoted to woody vegetation should generally not comprise more than 10% of the total area within a field border. Woody vegetation is not appropriate when the site is functioning as a filter strip or grassed waterway.

6. GENERAL OPERATION AND MAINTENANCE REQUIREMENTS

Refer to the Field Border (386) Standard for additional requirements on the following items to be planned and applied as necessary:

- Storm damage repair.
- Sediment removal – when 6 inches of sediment have accumulated at the field border/cropland interface.
- Reseed or interseed as necessary to maintain desired plant species.
- Shut off pesticide sprayers when turning on a field border.
- Shut off sprayers and raise tillage equipment to avoid damage to field borders.
- Shape and reseed border areas damaged by chemicals, tillage, or equipment traffic.
- Fertilize, mow, harvest, and control noxious weeds to maintain plant vigor.
- Ephemeral gullies and rills that develop in the border will be filled and reseeded.
- Avoid using as roadways.

7. OPERATION AND MAINTENANCE TO BENEFIT HABITAT QUALITY

Grazing, Haying and Disturbances

Grazing of field borders intended to benefit bobwhite quail should not be conducted until after July 15th and should only be used as a means to enhance the quality of wildlife habitat provided by the field border. Grazing events during the growing season should be limited to 30 days or less. Occasional dormant-season grazing ("incidental grazing" while gleaning crop residue) is acceptable when grazing periods do not exceed 60 days in length and adequate ground cover is maintained. Generally, livestock should be removed when an average

minimum stubble height of 5 inches is reached. Periodic incidental grazing should not occur more frequently than once every three years. Refer to criteria for wildlife habitat in the Prescribed Grazing (528) Standard for additional information on applying this practice.

Haying or mowing, by itself, is not recommended as a management activity to enhance habitat quality and should only be used to facilitate another activity such as disking, herbicide application, or interseeding. Refer to criteria for wildlife habitat in the Forage Harvest Management (511) Standard for additional information on applying this practice.

Field borders intended to benefit bobwhite quail should only receive incidental use as turn rows, roads, or for storage of crops (e.g., hay) and equipment. These activities should not occur during the nesting period (May 1st – July 15th) due to disturbance of cover and wildlife.

Note: Certain conservation programs (e.g., Conservation Reserve Program) prohibit incidental grazing and/or the use of field borders as turn rows, roads, and storage of crops/equipment which would require altering specifications to meet program guidelines.

Management to Enhance Existing Field Borders

Existing field borders that lack species diversity, especially a legume or forb component, can be enhanced using the Early Successional Habitat Development/Management (647) – Disking Specification or the Prescribed Burning (338) Standard.

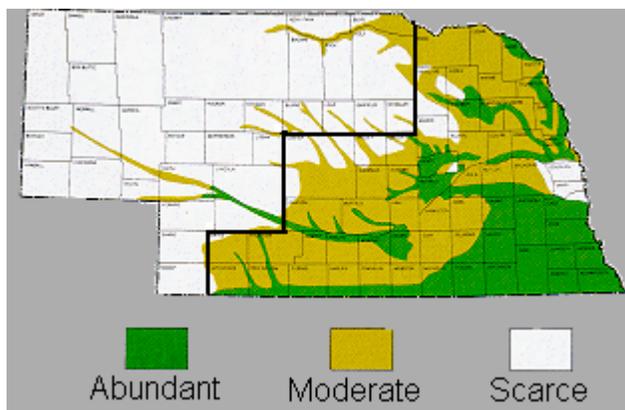
These same areas can be treated with a burn-down herbicide to suppress aggressive, sod-forming grasses and encourage annual broadleaf plants to establish. The herbicide should be applied while the grasses are actively growing in the fall (e.g., September and October) for best results. When using herbicides, the prescription must be designed to accomplish desired goals and done according to label requirements and in consultation with chemical company representatives or according to guidelines in the current University of Nebraska-Lincoln Cooperative Extension *Guide for Weed Management in Nebraska*.

Areas that have been treated with disking, prescribed burning, or herbicide application can be seeded to desirable grasses, legumes and/or forbs to increase species diversity and overall habitat quality.

If undesirable trees (e.g., Siberian elm) are present within or adjacent to the field border, they should be cut following the planting or other treatment to the field border and allowed to lay in a scattered manner within the field border. This will provide brush pile habitat used by bobwhite quail and other wildlife. The stumps of re-sprouting species should be treated with an appropriate herbicide.

APPENDIX A

NORTHERN BOBWHITE QUAIL RANGE IN NEBRASKA



All areas located east of the black line are suitable for establishing field borders designed to benefit bobwhite quail habitat. In addition, areas within $\frac{1}{2}$ mile of the following rivers or streams located west of the black line would be suitable to provide benefits to bobwhite quail:

- Frenchman River in Chase County
- Republican River in Dundy County
- North and South Platte and Platte Rivers in Keith and Lincoln Counties
- South Platte River in Deuel County
- North Platte River in Morrill and Garden Counties
- Niobrara River in Keya Paha, Brown, Rock, Boyd, and Holt Counties
- Elkhorn River in Holt County (only east of Highway 281)
- South Loup River in Logan County
- Dismal River and Middle Loup River in Thomas and Blaine Counties
- North Loup River in Blaine, Loup, and Garfield Counties
- Calamus River in Loup and Garfield Counties
- Cedar River in Garfield and Wheeler Counties
- Beaver Creek in Wheeler County

APPENDIX B

EARLY SUCCESSIONAL HABITAT SEEDING MIXTURE EXAMPLES

| Grass/Legume/Forb Species | # PLS/Acre | % of Mixture |
|------------------------------|------------|--------------|
| Big Bluestem | 0.5 | 20% |
| Little Bluestem | 0.3 | 15% |
| Sideoats Grama | 0.2 | 10% |
| Western Wheatgrass | 0.2 | 5% |
| Alfalfa | 0.6 | 25% |
| Red Clover | 0.4 | 25% |
| | | |
| Little Bluestem | 0.3 | 15% |
| Canada Wildrye | 0.6 | 15% |
| Indiangrass | 0.3 | 10% |
| Big Bluestem | 0.3 | 10% |
| Red Clover | 0.3 | 20% |
| Alfalfa | 0.4 | 20% |
| Sweet Clover | 0.2 | 10% |
| | | |
| Sideoats Grama | 0.6 | 25% |
| Canada Wildrye | 0.6 | 15% |
| Little Bluestem | 0.2 | 10% |
| Alfalfa | 0.2 | 10% |
| Red Clover | 0.2 | 10% |
| Crimson Clover | 0.1 | 5% |
| White Prairieclover | 0.17 | 15% |
| Showy Partridgepea | 0.4 | 5% |
| Illinois Bundleflower | 0.4 | 5% |
| | | |
| Big Bluestem | 0.4 | 15% |
| Little Bluestem | 0.2 | 10% |
| Indiangrass | 0.3 | 10% |
| Sideoats Grama | 0.1 | 5% |
| Switchgrass | 0.1 | 5% |
| Western Wheatgrass | 0.2 | 5% |
| Showy Partridgepea | 1.3 | 15% |
| Illinois Bundleflower | 1.1 | 15% |
| Purple Prairieclover | 0.16 | 10% |
| Roundhead Lespedeza | 0.15 | 5% |
| Maximilian Sunflower | 0.15 | 5% |

Note: Seeding rates for grasses, legumes, and forbs total 10 PLS/ft² with legumes or forbs comprising 50% of the mixture for use only on non-erosive sites. These mixtures are intended to provide high quality brood-rearing habitat for bobwhite quail and other upland game birds according to the Early Successional Habitat Development/Management – Low Density Seeding (647) Specification.

APPENDIX B

EXAMPLE SEEDING MIXTURES USING NATIVE GRASSES

| Grass/Legume/Forb Species | # PLS/Acre | % of Grass Mix or Legume/Forb Ratio |
|------------------------------|------------|--|
| Big Bluestem | 1.9 | 35% |
| Little Bluestem | 1.2 | 35% |
| Sideoats Grama | 0.9 | 20% |
| Western Wheatgrass | 0.8 | 10% |
| Alfalfa | 0.7 | 1/2 |
| Red Clover | 0.5 | 1/2 |
| | | |
| Little Bluestem | 1.2 | 35% |
| Sideoats Grama | 1.6 | 35% |
| Canada Wildrye | 2.3 | 30% |
| Alfalfa | 0.5 | 1/3 |
| Red Clover | 0.4 | 1/3 |
| Crimson Clover | 0.7 | 1/3 |
| | | |
| Canada Wildrye | 3.2 | 40% |
| Prairie Junegrass | 0.14 | 35% |
| Western Wheatgrass | 2.0 | 25% |
| Alfalfa | 0.5 | 1/3 |
| Red Clover | 0.4 | 1/3 |
| Birdsfoot Trefoil | 0.3 | 1/3 |
| | | |
| Canada Wildrye | 1.9 | 25% |
| Little Bluestem | 0.9 | 25% |
| Sideoats Grama | 1.2 | 25% |
| Indiangrass | 1.3 | 25% |
| Showy Partridgepea | 1.91 | 1/3 |
| Illinois Bundleflower | 1.59 | 1/3 |
| Blackeyed Susan | 0.07 | 1/3 |
| | | |
| Little Bluestem | 0.9 | 25% |
| Sideoats Grama | 1.2 | 25% |
| Big Bluestem | 0.8 | 15% |
| Indiangrass | 0.8 | 15% |
| Switchgrass | 0.2 | 10% |
| Western Wheatgrass | 0.8 | 10% |
| Showy Partridgepea | 1.45 | 1/4 |
| Illinois Bundleflower | 1.21 | 1/4 |
| Grayhead Coneflower | 0.12 | 1/4 |
| White Prairieclover | 0.19 | 1/4 |

Note: Seeding rates for grasses total 20 PLS/ft² with legumes or forbs added to that total to comprise 25% of the mixture. Adaptations will be needed if the site is subject to excessive erosion, sedimentation, or concentrated flow. (Refer to Section 3 of this document for seeding rate and other requirements when these conditions exist.)