

# Field Border

## Field Borders for Pollinators

### WV Conservation Practice Job Sheet

Code 386



Sweat bee (*Agapostemon* sp.). Photo: Toby Alexander, Vermont NRCS.

#### DEFINITION

Field borders are strips of permanent vegetation established at the edge or around the perimeter of a field. Vegetation consists of adapted grasses, legumes, and/or shrubs.

#### PURPOSE

Field borders can serve a variety of purposes. They are one of the most important components of a wildlife management plan and very important in maintaining healthy pollinator populations in areas where crop production depends upon insect pollination.

Field borders are located at the edges of crop fields and can connect to other buffer practices within fields. They are most effective when used in combination with other beneficial pollinator practices such as hedgerows or cover crops.

These areas are important to provide nesting opportunities and food (nectar and pollen) for a wide variety of insects.

Animal pollinators in West Virginia include bees, butterflies, moths, flies, beetles, ants, bats and to a lesser extent hummingbirds.

This job sheet will help you design herbaceous field borders that provide habitat for native pollinator species.

#### POLLINATOR CRITERIA

The benefits to pollinators depend on the vegetative species used and the management practiced.

It is usually not feasible to simply allow natural succession to provide pollen and nectar resources in sufficient quantities throughout the season. Planting is usually necessary to provide resources over the entire length of the season.

When planting, always use plant species that provide forage in the form of nectar and pollen and are attractive to insects. Some horticultural varieties of flowers bloom very attractively, but may not provide the necessary food for pollinators. Always use native plants.

When deciding the species of plants to establish, include a diverse mix of legumes or other forbs. Pay close attention to the species of existing plants and plant those species that complement existing native communities.

To create potential nesting habitat for bees on cropland, mowing, combined with no tillage, can maintain access to the soil surface that may provide nesting habitat for ground-nesting solitary bees. Alternatively, allowing field

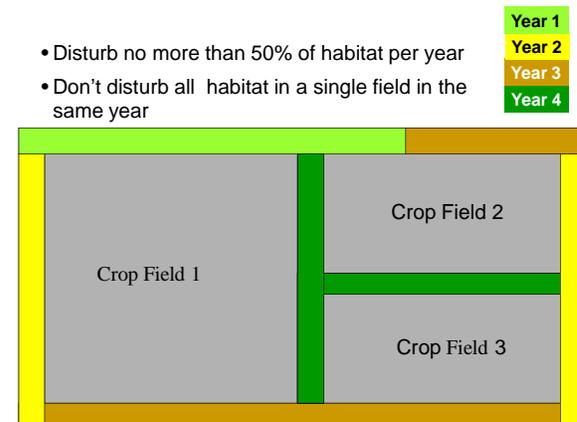
borders to become overgrown (e.g. with native bunch grasses) may provide nesting habitat for bumble bees.

Planting (in addition to natural regeneration) is used to establish field borders. Some general criteria apply to establishment:

- A minimum of ten species including one native grass or sedge species should be established; and at least three species in each of the bloom periods very early or early, mid and late season as defined in the West Virginia Pollinator Handbook (WVPH).
- The WVPH contains a list of potential seed mixtures and woody shrub species that are suitable for pollinator field borders.
- The minimum width of a field border is 20 feet. The width of the border may need to be increased to protect areas of nesting or provide turn rows for equipment. If a portion of the field border will be used for equipment movement or turn rows in crop fields. In this case, the field border width should be sufficient to allow a minimum of 10 feet of undisturbed habitat.
- Field borders will appear unkempt and be composed of a variety of plant species including forbs, grasses, shrubs and legumes.
- Infestations of exotic or invasive and other non-beneficial plants should be controlled. Consult the WVU Extension Service for acceptable chemical control methods for noxious and invasive plants.
- For mixtures containing warm season grasses, the seed is measured in Pure Live Seed (PLS) and should be stratified prior to planting. Inoculate all legume seed with the proper inoculants prior to planting.
- For slopes less than 5%, conventional seedbed preparation and minimum or no tillage techniques may be used. Disking and cultipacking before and after planting should be performed. Where no erosion hazards exist, natural regeneration may be established by using an approved herbicide on existing undesirable vegetation or by simply disking and idling the border area. For slopes greater than 5%, minimum or no tillage techniques are recommended.
- Sites that contain dense tall fescue sods may need to be renovated with an herbicide prior to re-establishment to more wildlife friendly species. NRCS does not make specific herbicide recommendations.

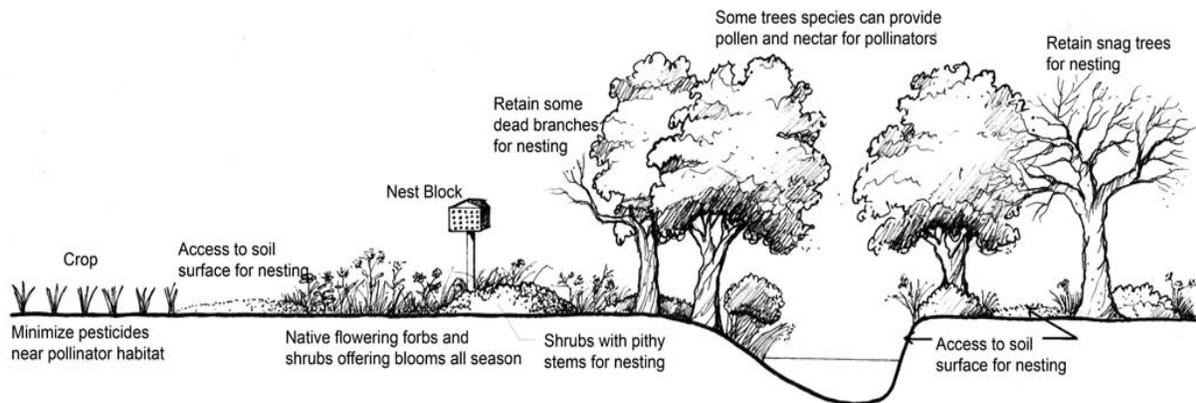
## OPERATION AND MAINTENANCE

- Inspect and repair field borders after storms to fill in gullies, remove sediment, re-seed disturbed areas, remove undesirable species and take other measures to ensure the effectiveness of the border.
- Allow enough time for establishment prior to harvest or disturbance.
- Periodic disturbance of field borders is necessary to stimulate growth of desirable vegetation and to eliminate encroachment of woody vegetation. As a rule of thumb, disturbance should occur within a field border every 3-5 years. **When managing field borders for pollinators, never disturb more than 50 percent of the field borders surrounding a field in any one year.**
- Delay harvesting, mowing, disking or other disturbance of the area until after the nesting season for ground-nesting birds and other animals when possible.
- Field borders should not be disturbed during the nesting season (March 15 – July 15) to protect ground-nesting wildlife.
- In place of mowing, consider other vegetative management techniques, such as “wickbar” herbicide applicators or lightly disking the field border on a rotational basis to promote growth of native vegetation.
- Where feasible, light disking is preferred over pesticide application to control undesirable vegetation.



A simplified disturbance scenario for pollinator habitat. (After H. Henry, NRCS )

METHOD	SETTING	TIMING	PROCEDURE
<p><b>Single Burn Down</b></p> <p>This option <u>should not</u> be used when tall fescue or orchardgrass is the predominant cover. Two herbicide burndowns are recommended when fescue is the predominant cover.</p>	<p>Grassland adjacent to cropland or other area needed for pollinators</p>	<p><b>Spring</b></p>	<p>Remove excess vegetation in fall or winter via mowing or close grazing</p> <p>Apply herbicide after vegetation has grown 4 to 6 inches in April – May</p> <p>Apply broad spectrum herbicide product</p>
<p><b>Double Burn Down</b></p> <p>This option should be used when tall fescue or orchardgrass is the predominant cover.</p>			<p>Grassland adjacent to cropland or other area needed for pollinators</p>



Place pollinator field borders as close to the crop as possible but allow for access to soil for ground nesting bees. After: Agroforestry Note – 34: *Enhancing Nest Sites for Native Bee Crop Pollinators*

## SPECIFICATIONS

### 386 Field Border - WV Job Sheet

Site-specific requirements are listed on the specification sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide and the Field Border practice standard (386).

<b>Client:</b>	<b>Farm #:</b>
<b>Field(s):</b>	<b>Tract #:</b>
<b>Designed By:</b>	<b>Date:</b>

Additional Purpose(s) (check all that apply)	
<input type="checkbox"/> Provide pollinator forage (nectar and pollen) throughout the growing season	<input type="checkbox"/> Management of harmful insect populations
<input type="checkbox"/> Pollination of adjacent crops	<input type="checkbox"/> Provide supplemental terrestrial wildlife food and cover

Existing Vegetation (Area to be converted to a field border)	
<input type="checkbox"/> Tall fescue or other sod <u>requiring removal</u> prior to establishment of more beneficial vegetation ( <b>Refer to site preparation specifications</b> )	<input type="checkbox"/> Other vegetation that is non-beneficial to wildlife
	<input type="checkbox"/> Cropland containing minimal noxious or sparse vegetation unsuitable to wildlife

Layout	Field _____	Rate (PLS or lbs/ac or % of mix)	Field _____	Rate (PLS or lbs/ac or % of mix)
Border width (ft)				
Border length along edge of field (ft)				
Total Area (acres)				
Slope %				
Mixture from WVPH <sup>1</sup>				
Very Early and/or Early Season Species				
Mid-Season Species				
Late Season Species				
Native Grass or Sedge Species				
Method of Establishment <sup>2</sup>				
Seeding/Planting Dates				
Crop pollination dates (if applicable)				
Supplemental Nutrients (lime, fertilizer, etc.) T, lbs per acre				

<sup>1</sup> If planting one of the mixtures listed in the West Virginia Pollinator Handbook (WVPH) simply attach the mixture to this jobsheet or list the species and rates in the spaces below.

<sup>2</sup> Identify how the field border is to be established: **Drilled, Broadcast** or **Other** suitable method (specify in the Planting \_\_\_\_\_) (342) Critical Area Planting [ \_\_\_\_\_] for information regarding seedbed preparation. *No variety of tall fescue or \_\_\_\_\_ used for planting in conjunction with this practice.*

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### Site Preparation

If fescue sod is present it may need to be removed prior to establishment of more wildlife friendly species. Follow the guidance listed in the West Virginia Pollinator Handbook for removal. Otherwise, prepare a firm seedbed by disking if using broadcast methods. Application of lime and fertilizer is usually not required unless otherwise indicated. Cultipack if possible.

**Additional requirements:**

### Planting Methods (Complete as appropriate)

- A. Seed should be **broadcast** at a rate of \_\_\_\_\_ PLS lbs/ac. A small grain crop may be needed as a companion crop at the rate of \_\_\_\_\_ pounds per acre (clip or harvest before it heads out).
- B. **Drill** grass and legume seed \_\_\_\_\_ inches deep uniformly over area. Establish vegetation according to the specified seeding rate. A small grain crop may be \_\_\_\_\_ before it heads out).

**Additional requirements:**

### Operation and Maintenance

Maintain original width and length of field border(s) for pollinators. Harvest, mow, reseed, and disk as necessary to maintain plant density and vigorous plant growth. **Note: *Where pollinators are the primary consideration, fertilization is usually not required and may result in stands becoming weedy or rank.*** Inspect after major storms, remove trapped sediment, and repair eroding areas. Shut off pesticide sprayers when turning on a field border. Regular disturbance may be necessary to maintain the intended function of the field border. Do not disturb more than 50% of all field border habitats in any one year. Do not disturb the entire field border habitat around a single field in the same year. Disturbance should occur when pollinators are not as active. If disking is planned as maintenance, refer to the associated job sheet for specifics.

**Additional requirements:**

## Field Border – Job Sheet

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

### Additional Specifications and Notes:

**For more information concerning this practice contact:**

\_\_\_\_\_ at \_\_\_\_\_

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