



CONSERVATION ENHANCEMENT ACTIVITY

E327B

CONSERVATION STEWARDSHIP PROGRAM

Establish Monarch butterfly habitat

Conservation Practice 327: Conservation Cover

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Associated Ag Land; Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 5 years

Enhancement Description

Seed or plug milkweed (*Asclepias* spp.), and high-value monarch butterfly nectar plants on marginal cropland, field borders, contour buffer strips, and similar areas.

Criteria

- Habitat areas must be at least 0.5 acres.
- Establish and maintain habitat for monarch butterflies as described below:

A. Monarch butterflies

- Lists of larval host plants and nectar plants suitable for monarch butterfly habitat are provided in the NRCS Field Office Technical Guide (FOTG).
- A grass component to a monarch habitat planting is commonly needed for ecological stability, weed control, and fuel for prescribed burning. The FOTG provides information on the grass/forb ratio for monarch habitat plantings.
- To provide food (nectar and pollen) for adult monarch butterflies, at least 60% of the forb seeds (pure live seed) in the mix shall be from the monarch butterfly planting list



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(FOTG). Milkweed seeds are included in meeting the 60% minimum because milkweeds are excellent nectar plants. The FOTG provides information on the required number of forb species per bloom period (early, mid, or late season) for monarch habitat plantings. Bloom periods are to coincide with monarch presence in the area.

- To provide food for monarch butterfly larvae, plantings shall include at least one species of milkweed (*Asclepias* spp.) from the FOTG monarch butterfly planting list. All milkweed species used in the mix must be from this list and shall represent at least 1.5% of the total seeds in the mix. The total seeds include pure live seed from both grass and forbs. Tropical milkweed (*Asclepias curassavica*) shall not be planted.

Waiver: In some regions, a commercial source of native Asclepias species is limited or not available. In these situations, the NRCS State Conservationist may apply for a waiver, and only require that plantings include monarch nectaring species. In this situation, milkweed seed or plugs are still encouraged to be planted, if possible. If such a waiver is granted, the mix will result in at least 80% of the seed being from the state's monarch nectaring plant list.

- Any other use of the monarch butterfly habitat area must not compromise its intended purpose.
- If a Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG) is available for use in the state, a minimum planned Monarch WHEG score of "0.60 will be obtained for the planted area.

B. Planting criteria for monarch butterfly habitat

- Site selection should consider existing weed pressures and available methods of control. Delay planting and conduct an additional growing season of weed control if high weed pressure requires aggressive treatment.
- Site preparation and plant establishment shall be accomplished according to the state's specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327) or Wildlife Habitat Planting (Code 420).
- Successful establishment is when the planting provides at least 80 percent soil cover when visually estimated, and resultant cover consists of at least 500 milkweed plants



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per acre (approx. 1 stem per each 100-sq. ft.), and successful establishment of at least two targeted nectar plants per bloom period when monarchs are present in the state. A milkweed plant is defined as a single stem emerging from the ground.

- Insecticides should not be used in the habitat planting area.
- Herbicides are allowed during site preparation (prior to planting) when it is necessary to eliminate competing weeds from a planting area in order for nectar and pollen producing plants to establish.
- After a monarch habitat enhancement has been planted, herbicides may be spot-sprayed to remove broad-leaf weeds, or grass-selective herbicides may be applied to larger areas to eliminate persistent weedy grasses. Similarly, in the first-year post-planting, the entire site may be mowed 8 to 10 inches high to reduce annual or biennial weeds that persist (site should be mowed just before dominant annual weeds flower).

C. Operation and maintenance for monarch butterfly habitat

- Management and/or maintenance activities such as mowing, haying, burning, or grazing shall be conducted outside of the season when monarch larvae or adults are present.
- Insecticides should not be used in the habitat planting area.
- The planted habitat areas shall be regularly inspected for invasive and/or noxious plants or other plants that may compromise the purpose of this enhancement. Undesirable species shall be controlled using Individual Plant Treatment methods, for example, spot-spraying with herbicide or physical removal of individual plants.



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide a map showing the location of proposed habitat areas with notes on land use adjacent to proposed habitat areas to discuss with NRCS staff.
- During implementation, purchase specified seed mix or plant materials that meets monarch-specific seeding or planting requirements provided by NRCS.
- During implementation, follow habitat establishment guidance provided by NRCS in the state specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327).
- After implementation, provide a list of management and/or maintenance activities carried out to manage the habitat areas and the dates on which those activities occurred.
- After implementation, provide photo documentation of monarch habitat areas.

NRCS will:

- Prior to implementation, assess habitat condition using a monarch Wildlife Habitat Evaluation Guide (WHEG) to calculate current WHEG score and anticipated WHEG score after implementation of Enhancement. **Benchmark WHEG score = _____ Planned Post Implementation WHEG score = _____**
- Prior to implementation, provide participant with suitable larval host plants and nectar plants lists.
- Prior to implementation, provide and explain State specifications for NRCS Conservation Practice Standard Conservation Cover (Code 327) or Wildlife Habitat Planting (Code 420).
- Prior to implementation, provide participant with a recommended seed mix and planting specifications per above criteria (grass/forb ratio; number of forb species per bloom period for monarch habitat plantings).
- After implementation, verify successful establishment (per planting criteria above).



NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

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Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date





**IOWA SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

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Additional Criteria for Iowa

- Use the [NRCS Monarch WHEG: Midwest Edition 2.0](#) (September, 2018).
- A list of suitable plants to provide monarch habitat is attached below. Also reference the Iowa Native Prairie Seeding Calculator by clicking on the “Forbs/Legumes” tab. Monarch butterfly beneficial plant species are indicated in column AI of this tab.
- Develop seeding plans with the use of the Native Seeding Calculator. Use the “Pollinator Mix Check Sheet” referencing the “Additional requirements for Monarch Habitat Mix” section to ensure the mix meets Iowa guidance.
- A reference for the successful establishment of native plants is [Establishing and Managing Native Prairie](#), located under Iowa NRCS Publications.

Midwest Monarch Region - Iowa Plant Recommendations for Monarch Butterflies				Bloom (x) Monarch Presence (orange)								
Monarch Value	Species name	Common name	Growth Habit	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
THE MILKWEED SPECIES ON THIS LIST <i>MUST</i> COMPRISE AT LEAST 1.5% OF <u>ALL</u> SEEDS IN THE CONSERVATION PLAN'S SEED MIX.												
Very High	<i>Asclepias incarnata</i>	Swamp milkweed	forb/herb				x	x	x	x	x	
Very High	<i>Asclepias sullivantii</i>	Prairie milkweed	forb/herb				x	x	x			
Very High	<i>Asclepias syriaca</i>	Common milkweed	forb/herb				x	x	x			
Very High	<i>Asclepias tuberosa</i>	Butterfly milkweed	forb/herb			x	x	x	x	x		
Very High	<i>Asclepias verticillata</i>	Whorled milkweed	forb/herb			x	x	x	x	x		
THESE FORB SPECIES <i>MUST</i> COMPRISE 60% OF THE HERBACEOUS FORB SEEDS IN THE CONSERVATION PLAN'S SEED MIX.												
Very High	<i>Echinacea purpurea</i>	Eastern purple coneflower	forb/herb		x	x	x	x	x	x		
Very High	<i>Eupatorium altissimum</i>	Tall thoroughwort	forb/herb					x	x	x		
Very High	<i>Helianthus grosseserratus</i>	Sawtooth sunflower	forb/herb						x	x	x	x
Very High	<i>Liatris aspera</i>	Tall blazing star	forb/herb						x	x		
Very High	<i>Liatris cylindracea</i>	Ontario blazing star	forb/herb						x			
Very High	<i>Liatris ligulistylis</i>	Rocky Mountain blazing	forb/herb						x	x		
Very High	<i>Monarda fistulosa</i>	Wild bergamot	forb/herb,			x	x	x	x	x		
Very High	<i>Oligoneuron rigidum</i>	Stiff goldenrod	forb/herb					x	x	x	x	
Very High	<i>Solidago speciosa</i>	Showy goldenrod	forb/herb						x	x		
Very High	<i>Symphotrichum novae-angliae</i>	New England aster	forb/herb						x	x	x	
Very High	<i>Bidens aristosa</i>	Bearded beggarticks	forb/herb					x	x			
High	<i>Agastache nepetoides</i>	Yellow giant hyssop	forb/herb,					x	x	x		
High	<i>Amorpha canescens</i>	Leadplant	shrub, subshrub				x	x				
High	<i>Apocynum cannabinum</i>	Indianhemp	forb/herb			x	x	x	x			
High	<i>Asclepias purpurascens</i>	Purple milkweed	forb/herb			x	x	x				
High	<i>Blephilia ciliata</i>	Downy pagoda-plant	forb/herb			x	x	x	x			
High	<i>Blephilia hirsuta</i>	Hairy pagoda-plant	forb/herb			x	x	x	x	x		
High	<i>Boltonia asteroides</i>	White doll's daisy	forb/herb					x	x	x	x	
High	<i>Cirsium muticum</i>	Swamp thistle	forb/herb					x	x	x		
High	<i>Coreopsis palmata</i>	Stiff tickseed	forb/herb					x	x			
High	<i>Coreopsis tripteris</i>	Tall tickseed	forb/herb					x	x	x		
High	<i>Dalea candida</i>	White prairie clover	forb/herb,			x	x	x				
High	<i>Dicentra cucullaria</i>	Dutchman's breeches	forb/herb		x	x						
High	<i>Doellingeria umbellata</i>	Parasol whitetop	forb/herb					x	x	x	x	
High	<i>Echinacea angustifolia</i>	Blacksamson echinacea	forb/herb			x	x	x				
High	<i>Echinacea pallida</i>	Pale purple coneflower	forb/herb			x	x	x				
High	<i>Eryngium yuccifolium</i>	Rattlesnake master	forb/herb			x	x	x	x			
High	<i>Eupatorium perfoliatum</i>	Common boneset	forb/herb				x	x	x	x	x	
High	<i>Eutrochium purpureum</i>	Sweetscented joe pye	forb/herb					x	x	x		
High	<i>Helianthus giganteus</i>	Giant sunflower	forb/herb					x	x	x		
High	<i>Helianthus maximiliani</i>	Maximilian sunflower	forb/herb						x	x	x	x
High	<i>Helianthus strumosus</i>	Paleleaf woodland sunflower	forb/herb					x	x	x		

High	<i>Heliopsis helianthoides</i>	Smooth oxeye	forb/herb				x	x	x	x		
High	<i>Krigia biflora</i>	Twoflower dwarf dandelion	forb/herb			x	x	x	x			
High	<i>Liatris punctata</i>	Dotted blazing star	forb/herb						x	x	x	
High	<i>Liatris pycnostachya</i>	Prairie blazing star	forb/herb						x	x	x	x
High	<i>Lithospermum canescens</i>	Hoary puccoon	forb/herb		x	x	x					
High	<i>Lobelia siphilitica</i>	Great blue lobelia	forb/herb					x	x	x	x	
High	<i>Mertensia virginica</i>	Virginia bluebells	forb/herb	x	x	x	x					
High	<i>Monarda punctata</i>	Spotted beebalm	forb/herb,		x	x	x	x	x			
High	<i>Oligoneuron rigidum</i>	Stiff goldenrod	forb/herb						x	x	x	
High	<i>Onosmodium bejariense</i>	Soft-hair marbleseed	forb/herb				x	x				
High	<i>Phlox divaricata</i>	Wild blue phlox	forb/herb	x	x	x						
High	<i>Physostegia virginiana</i>	Obedient plant	forb/herb						x	x	x	x
High	<i>Rudbeckia hirta</i>	Blackeyed Susan	forb/herb				x	x	x	x	x	
High	<i>Silphium integrifolium</i>	Wholeleaf rosinweed	forb/herb					x	x	x		
High	<i>Silphium laciniatum</i>	Compassplant	forb/herb					x	x	x		
High	<i>Silphium perfoliatum</i>	Cup plant	forb/herb					x	x	x		
High	<i>Sium suave</i>	Hemlock waterparsnip	forb/herb					x	x	x		
High	<i>Solidago canadensis</i>	Canada goldenrod	forb/herb							x	x	x
High	<i>Solidago nemoralis</i>	Gray goldenrod	forb/herb				x	x	x	x	x	
High	<i>Symphotrichum cordifolium</i>	Common blue wood aster	forb/herb				x	x	x			
High	<i>Symphotrichum laeve</i>	Smooth blue aster	forb/herb						x	x	x	
High	<i>Symphotrichum oolentangiense</i>	Skyblue aster	forb/herb, subshrub						x	x	x	
High	<i>Symphotrichum pilosum</i>	Hairy white oldfield aster	forb/herb							x	x	
High	<i>Verbena stricta</i>	Hoary verbena	forb/herb					x	x	x		
High	<i>Vernonia fasciculata</i>	Prairie ironweed	forb/herb					x	x	x		
High	<i>Veronicastrum virginicum</i>	Culver's root	forb/herb					x	x	x		

THE TREES AND SHRUBS ON THIS LIST MAY COMPLEMENT THE REMAINING 40% OF SEEDS IN THE FORB COMPONENT OF THE CONSERVATION PLAN'S SEED MIX.

Very High	<i>Cephalanthus occidentalis</i>	Common buttonbush	shrub, tree				x	x	x	x		
High	<i>Cornus amomum</i>	Silky dogwood	shrub	x	x	x						
High	<i>Cornus racemosa</i>	Gray dogwood	shrub			x	x					
High	<i>Physocarpus opulifolius</i>	Common Ninebark	shrub			x	x					
High	<i>Prunus americana</i>	American plum	shrub, tree		x	x						
High	<i>Prunus serotina</i>	Black cherry	shrub, tree	x	x	x	x					
High	<i>Salix interior</i>	Sandbar willow	shrub, tree	x	x	x						
High	<i>Staphylea trifolia</i>	American bladdernut	shrub, tree		x	x						
High	<i>Viburnum lentago</i>	Nannyberry	shrub, tree			x	x					

Citation: USDA, NRCS. 2015. The PLANTS Database (<http://plants.usda.gov>, 7 May 2015). National Plant Data Team, Greensboro, NC 27401-4901 USA.