

Natural Resources Conservation Service

Conservation Cover - Monarch Habitat

Illinois Job Sheet – 327

August 2018



DEFINITION

Establishing and maintaining permanent vegetative cover.

PURPOSE

This practice is applied to enhance monarch and other wildlife, pollinator and beneficial organism habitat.

Introduction:

The monarch butterfly (*Danaus plexippus*) has suffered from significant population declines over the past two decades. Many factors contribute to its decline with the largest being loss of habitat for breeding, migrating and over wintering. Also, pesticides used to control insect and plant pests may have harmful, unintended consequences for monarchs and other pollinators. Monarchs are considered incidental pollinators, they visit the forbs for their nectar, an energy source, and not the pollen. Adult monarchs prefer particular species of forbs as their food source, while milkweeds are the sole food source for monarch larvae.

Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG), Biology Technical Note 24:

Within the area of interest, *Biology Technical Note 24* will be used to identify benchmark conditions and resource concerns for the monarch butterfly. Identified resource concerns will be addressed in order of priority (factors with the lowest scores addressed first).

Biology Technical Note 24 will also be used to evaluate the planned habitat condition. A planned habitat condition rating greater than, or equal to, 0.5 is necessary to achieve a RMS planning level, which may be achieved through progressive planning.

Seeding mix and seeding rate:

In general, all seed mixtures for monarch habitat will:

- Meet the pollinator planting requirements of Practice Standard 327 Conservation Cover.
- Be developed using the Illinois NRCS Native Seed Calculator. To filter the calculator's picklists to only Monarch preferred species, check the 'Monarch Preferred Species' radio button at the top of the calculator tab. The list can also be obtained from the [NRCS Important Plants of the Monarch Butterfly – Midwest Region](#)
- Include at least one site-suited milkweed species (*Asclepias* spp.) from the monarch preferred species in the Illinois NRCS Native Seed Calculator.
- Milkweed PLS must make up at least 1.5% of the pure live seed (PLS) per square foot of the entire mix (including the grass, forb, and subshrub components of the mix).
- At least 60% of the PLS forb seeds per square foot in the mix shall be preferred monarch nectar forbs. Milkweed is an excellent source of nectar, so milkweed seed is included in meeting the 60%.
- Attach the Illinois NRCS Native Seed Calculator seeding plan for the seed mix to be planted to monarch habitat.

A diverse plant community will benefit a wide array of insect species and wildlife, while also providing essential habitat for monarchs.

Seedbed preparation and seeding:

Soil tests and fertilizer are not required for this seeding. Seeding will be performed within the seeding dates listed on the attached seeding plan.

Prepare fields for seeding by eradicating all existing vegetation, which may compete with prairie species. Controlling weeds before seeding will greatly improve establishment and reduce maintenance needs. For old fields and pastures, several treatments for one or two growing seasons may be required, using a combination of herbicides, mowing, tillage, and/or prescribed

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burning, to eradicate aggressive undesirable vegetation. To suppress weed competition, or when delayed planting is necessary, a cover crop of oats (1 bu/acre) can be seeded on fields prone to erosion or weed invasion. Perform all seedbed preparation operations on the contour or across the general slope where possible.

Dormant Broadcast seeding during late fall or early winter, when soil and air temperatures will remain cold enough to prevent germination, is the recommended method of establishment. The seed of many native forb species, native cool season grasses, sedges, and rushes will benefit from cold moist stratification overwinter. Stratification is needed to soften the seed coat and/or to break physiological dormancy for successful germination. Seed may be broadcast onto a fine, firm, residue-free seedbed during the dormant seeding period, then roll or cultipack to enhance seed to soil contact. Grain drills may be used for planting if proper depth control is exercised. Most forb species should not be planted deeper than twice the seed diameter.

Spring seeding may be conducted using conventional or no-till grain drills and cultipacker-type seeders if the seed delivery mechanism is designed to handle the type of seed being planted. Place seed at a depth not to exceed two times the seed diameter.

Management Recommendations:

Disturbance activities shall occur before the arrival of most of the migrating monarchs or after most adults begin their fall migration. Using Interstate 72 to divide the state in half, the dates for no management are:

- May 1st – October 1st in the northern half of Illinois
- April 1st – October 15th in the southern half of Illinois

Establishment:

Mowing for weed control is often necessary during the first growing season.

- Mow no lower than 8 inches the first growing season.

Established Stands

After establishment (approximately three to five years), managing the entire habitat stand at once can severely impact monarchs as this will remove all available habitat for a period of time. Therefore, when feasible, management activities should not occur on more than 1/3 of the monarch habitat in any given year. Established monarch habitat may be managed by one or a combination of the following methods: *Prescribed Fire, Mechanical Disturbance, or Spraying*

Prescribed Burning:

After the planting becomes established, monarch habitat may be managed through periodic burning. Prescribed burns can allow germination of seed bearing annuals, increase plant species diversity, control unwanted woody vegetation, and open up the stand for native pollinator nest sites.

Recommended Timing:

Prescribed burns should be conducted every three to five years if forbs begin to wane within the stand. For wildlife considerations, divide the area into smaller management units and burn no more than 1/3 of the monarch habitat each year. Monarch habitat should be burned during the dormant season (late October-December) when native prairie species are dormant and monarchs have migrated south. Only burn with an approved burn plan using the Conservation Practice Prescribed Burning Job Sheet 338.

Mechanical Disturbance (mowing and disking)

Recommendations for all mechanical methods:

- Reduce speed to 8 mph or less to allow wildlife time to escape.
- Use a flush bar when possible to move wildlife out of the path of machinery.
- Avoid disturbance at night when wildlife are less likely to flush.

Light Disking

Light disking or harrowing (2-4" deep) of existing stands can increase the amount of open ground and encourage a diverse plant community of annuals and perennials, including common milkweed. Disking chops up milkweed rhizomes to increase the number of plants. Observe the guidelines contained in the Conservation Practice Early Successional Habitat Development Job Sheet 647A.

Mowing

Mowing is not effective as a stand-alone practice and should be done only in combination with another management practice such as burning, disking, or spraying.

Use only rotary or flail mowers that evenly distribute grass clippings. Do not swath, as the windrows will smother the desirable plants. Clippings should be baled and removed to accommodate forb germination, if allowed by program rules. Mow no lower than 8 inches to minimize mortality and leave adequate residual cover. Avoid milkweeds when possible.

Spraying

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Avoid using broad spectrum herbicides and preference should be given to spot treatments when appropriate. Judiciously use approved herbicides as necessary to control noxious weeds and undesirable plants during



the establishment period. A grass selective herbicide

may be needed to deter encroachment of non-native cool-season grasses. Only spray using the Conservation Practice Early Successional Habitat Development Job Sheet 647B.

Monitoring:

Monitor the planting after establishment or management activities to determine whether the stand is maximizing benefits for the monarch. The *Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG)*, *Biology Technical Note 24* can be used to assess established monarch habitat.

Native milkweeds are an essential feature of monarch breeding habitat. Estimate the abundance and diversity of milkweeds within the stand. Five hundred or more milkweed plants per acre (in widely dispersed clumps) comprised of 3 or more species are considered good monarch habitat, however more plants support more monarchs. The planting should also continue to support a variety of nectar plants that bloom throughout the growing season.

Contact your local Natural Resources Conservation Service for recommendations on managing or upgrading existing cover. For additional information visit the following websites:

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/plantsanimals/pollinate/?cid=nrcseprd402207>

<http://monarchwatch.org/>

<http://www.learner.org/jnorth/monarch/>

www.monarchjointventure.org