

**Ohio FY17 EQIP
Monarch Butterfly Habitat Development Project**

Fiscal Year 2017

Guidelines for Improving and Increasing Monarch Habitat in Ohio

Background

The focus of the EQIP Monarch Butterfly Habitat development Project is to create or improve summer habitat for monarchs; this is primarily nectar-rich forbs for foraging and milkweeds for egg-laying and larval growth. As adult monarch butterflies reach Ohio in the summer it is important that adults have access to nectar-rich plants to provide the energy they need for mating and egg-laying. Monarch butterflies only use milkweeds (genus *Asclepias*) on which to lay their eggs as milkweeds are the only species on which larval monarchs will feed. Once the larvae transform to adults, the butterflies need nectar rich forbs on which to feed to power their flight back to wintering grounds in Mexico. The loss of suitable sites with milkweeds and nectar-rich flowers is one of the reasons leading to the decline in monarch butterfly populations.

This project's emphasis is on establishment of new habitat that provides the best habitats for monarch butterflies that spend the summer in the Midwest. The new habitat may be newly seeded areas or areas that currently have some herbaceous vegetation but are deficient in the important milkweeds and nectar-producing species. Newly seeded areas will be planted to a mix of species that includes sufficient milkweed and nectar-producing flowers that will support monarchs in the summer. Areas that currently have some grass or forb cover that is deficient in terms of monarch habitat will be renovated through methods to increase the amount of desirable species in the stand.

It is expected that most of the sites to be enrolled in this effort will be lands that are not or will not be used for active agricultural production (cropping, haying or grazing); however, lands adjacent to, or even surrounded by agricultural production areas may be used to provide habitat. One important consideration for monarch habitat is that it be free from risk from insecticides; generally this would mean that no insecticide is applied to the habitat or within 125 feet of it. Odd areas on farms including those near buildings may be used as long as they are free of any negative effects from adjacent land use.

Areas used for grazing or hay production could be used for monarch habitat, but the typical management of these areas would prohibit the best development of flowering plants desirable for monarchs. Also, as milkweed may be toxic to some species, its promotion in pastures is not encouraged. As with cropland, it is more likely that habitat will be developed on areas where the management for hay or pasture is excluded; this may be on a seasonal, annual or permanent basis. If done on a seasonal or annual basis, the management must allow the presence of desirable flowering forbs and milkweed in sufficient numbers to support monarchs. Planning of such areas will entail significant limitations on its use and should be used with caution.

Wooded areas are not used by monarchs so forested areas should not be considered for monarch habitat development. Wooded areas shall not be cleared to establish monarch butterfly habitat. Areas with scattered brush may be acceptable for conversion to monarch habitat as long as the brush is not so extensive to prevent growth of desirable plants through shading or inability to manage the sites. If the brush is too thick to support the desired habitat, it will be necessary to implement brush management to control the brush before other habitat measures are taken.

There is no minimum or maximum size for monarch butterfly habitat; they will routinely use even small (0.1 acre) patches. However, it is difficult to achieve the diversity of species desired on very small patches and they may be more subject to adverse effects of management on adjacent lands. Although there is no clear understanding of the value of various scales and distribution of habitat on the landscape, it is generally believed that simply getting more desirable habitat available will benefit the species.

Technical Support Documents

References on establishing and managing monarch habitat can be found on Ohio Sharepoint under Resources and Technology, Shared Documents, Monarch Butterfly References folder at: https://ems-team.usda.gov/sites/NRCS_Ohio/technology/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fsites%2FNRCS%5FOhio%2Ftechnology%2FShared%20Documents%2FMonarch%20Butterfly%20References&FolderCTID=0x01200073EDFAD16B31FB41A38444C294800A46&View=%7B1220A8A6%2D0DDB%2D4C35%2D9944%2D44D05FBCC187%7D

Desired Vegetation

The quality of herbaceous habitat for monarch butterflies is almost entirely dependent on the amount of milkweed and nectar producing plants available for monarch butterflies during the summer. The presence of milkweed is essential; at least 200-300 milkweed stems per acre is generally thought to be the necessary amount to provide moderate quality monarch habitat and 500 stems per acre is ideal. Milkweed presence may be accomplished through management of existing stands which leads to higher stem densities of milkweed or, more typically, new plantings which include at least 3-4% of the mix (based on number of seeds) to be milkweed. Common milkweed (*Asclepias syriaca*) should be the dominant milkweed species used but other species such as swamp milkweed (*A. incarnata*) or butterfly milkweed (*A. tuberosa*) should be included as well. Information on milkweed species can be found in the Monarch Butterfly References folder.

Monarchs use a variety of nectar producing plants for food sources and presence of these species in the stand is also critical. A list of most desirable nectar plant lists has been developed; this list (Monarch Nectar Plant List for the Midwest and Great Lakes Region) can be found in the Monarch Butterfly References folder. When evaluating monarch habitat, it is recommended that at least 20% of the stand be composed of species from this list. When planting new areas, 50-75% of the forbs selected for plantings to target monarchs should come from plants on this list. Plantings should include species that provide blooming flowers across the time when monarchs are expected to be present, generally May through September. The presence of early season blooms (before May) is not as important for monarch butterflies but the presence of early

bloomers will benefit other insects and pollinators as well. Mixes should include at least 9 species, no single species should exceed 15% or less than 1% of the mix based on number of seeds.

Management of the stand is important to maintaining its value as monarch butterfly habitat. Manipulation of the stand through activities such as mowing or spraying must be done in a way to avoid negative affects to the desirable species, especially their ability to bloom during the times when monarchs are present. Management for control of undesirable species at the time of establishment and afterward is allowed; spot treatment is particularly encouraged.

Wildlife Habitat Evaluation Guide (WHEG)

To assist in the planning and evaluation of efforts to increase and improve monarch butterfly habitat, a *USDA NRCS Monarch Butterfly Wildlife Habitat Evaluation Guide and Decision support Tool: Midwest Edition* has been developed. This tool may be found in the Monarch Butterfly References folder and attached to this bulletin. This tool is primarily to assist the planner in evaluating current habitat and determining possible practices to improve the habitat based on scores achieved using the tool. Use of this tool is not required for program ranking or screening purposes. The tool has an initial rapid screening step that allows selected plant community types to be rated as “poor” for benchmark purposes and therefore in need of some type of practice(s) to develop monarch habitat. The three plant communities identified by the rapid process are crop, monotypic grasses and brush; definitions and guidance on their identification are found in the tool. Whether it is a site rapidly screened as poor or determined not to meet other criteria in the tool, the tool identifies possible practices that can be used to address the deficiencies. The tool can be used to document pre-treatment and post-treatment habitat quality for documentation of meeting wildlife habitat resources concerns and for monitoring of habitat. Contact the NRCS state biologist for guidance on use of this tool if necessary.

Options for Improving Monarch Butterfly Habitat

There are a limited number of practices eligible for this project; the following guidance suggests ways in which planners may consider using these practices to create or improve monarch butterfly habitat.

645-Upland Wildlife Habitat Management For planning purposes, all monarch habitats will be planned under the umbrella practice 645. A monarch habitat specific practice narrative is available. The monarch butterfly will be the target species and meeting the planning criteria for wildlife habitat resource concern will be documented through use of the Monarch Wildlife Habitat Evaluation Guide. Although there may be scenarios under the 645 practice that could be included in the contract, most of the actual habitat implementation will be done using other conservation practices.

314-Brush Management This practice may be used to control woody species, including those that are invasive, exotic and/or noxious, on sites slated for habitat development. This may be either to simply remove the brush to allow already present desirable species to expand to better levels or to allow other practices such as seeding. This practice may not be used to convert wooded sites to herbaceous cover for monarch or other species habitat.

327-Conservation Cover Conservation cover is the practice that will most frequently be used to establish new cover for monarch butterfly habitat. See mixes will be used that meet the guidance for monarch habitat as described in the guidance above as well as the Monarch WHEG and the monarch nectar plant list. Practice payment scenarios targeted to pollinator and monarch butterfly habitat are available.

647-Early Successional Habitat Development/Management This practice may be used to promote the establishment of desirable cover in established herbaceous cover, particularly those that have advanced in succession so as to retard the growth of desirable plant species.

386-Field Border Monarch habitat may be established adjacent to cropland using this practice although conservation cover can achieve much the same purpose. There is a pollinator targeted payment scenario available.

511-Forage Harvest Management Although it may be difficult to manage haying of an area to benefit monarch habitat and meet producer objectives in terms of forage production, it can be considered; there are payment scenarios that can be used for deferred haying situations.

338-Prescribed Burning Management of herbaceous stands through the use of prescribed burning may be helpful in reducing unwanted vegetation or encouraging desirable plant species; the use of this practice must directly benefit monarch butterflies. All agency policy regarding the planning of prescribed burning must be followed.

390-Riparian Herbaceous Cover There is a pollinator targeted payment scenario as well as native grass scenario for this practice; typically though conservation cover is a more likely practice to establish cover.

382-Fence This practice is only to be used when needed to protect monarch butterfly habitat from livestock, equipment or other access that would damage the habitat.

394-Firebreak If prescribed burning is planned as part of the management under the contract, a firebreak may be authorized if needed to manage the fire or protect adjacent land, buildings, etc.

315-Herbaceous Weed Control This practice may be used to control herbaceous species, including those that are invasive, exotic and/or noxious, on sites slated for habitat development. This may be either to simply remove the undesirable weeds to allow already present desirable species to expand to better levels or to allow other practices such as seeding.

595-Integrated Pest Management Spraying or other pest management measure will be implemented using this practice whether it is on the habitat area itself or adjacent land. In looking at risk factors, special attention must be given to possible effects on monarch habitat and the butterfly at all life stages.

644-Wetland Wildlife Habitat Management Although it is expected that most sites will be on uplands, it is possible that some sites will be on wetlands; monarch butterflies will use saturated soil wetlands. Its use will meet the same requirements as 645.

Guidance for Completing Ranking Tool

National Priorities

Guidance on the National Issues is not available at the time of this printing but will be provided as soon as it is available

State Issues

Answer yes or no for each question.

State 1. Use the map provided, “Monarch Butterfly Habitat Development Project” to answer this question. All counties in Ohio are either High or Medium.

State 2. 2a and 2b are based the number of milkweed species included in any planting mixes established if new plantings are part of the contract. If no new plantings are used and the contract includes practices to improve milkweed and nectar sources, 2c may be marked yes.

State 3. Natural areas include grasslands and native herbaceous wetlands (non-cropped) that support at least 50% native herbaceous species. These do not have to be officially designated nature preserves or similar designations; it refers more to the condition of the cover. Protected areas include conservation easements, government lands and similarly protected areas. Document the location and type of habitat and protection (if applicable) as well as the source of information used in making this determination in CONS6 notes; personal knowledge, if reliable, is acceptable.

Local Issues

Answer yes or no for each question.

Local 1. The determination of the percentage should be based on the seeds rather than just the number of species; however if exact rates are unknown, the number of species may be used. The list of species refers to the Monarch Nectar Plant List for the Midwest and Great Lakes Region referenced in the guidance above (page 2); it may be found on the Ohio NRCS Sharepoint

Local 3. High quality monarch habitat is determined using the monarch WHEG described in the guidance above (page 3). In general, this would be herbaceous cover having at least 300 stems of milkweed per acre, a good diverse stand including at least 25% of listed nectar species and is protected from insecticide use and adverse management.