Monarch Collaborative List of Agricultural Resources

Monarch populations have declined over the past two decades. Because they face serious challenges today, the Monarch Collaborative, a diverse and dedicated group of organizations spanning the research community, agricultural production, conservation causes, and public agencies is working to identify how partnerships in the farming and ranching community can support and enhance habitat for a sustainable monarch population. As farmers and ranchers are stewards of the land across much of monarch habitat, they are in a unique position to support sustainable monarch populations. The Monarch Collaborative believes that an increase in milkweed and nectar plants appropriately placed in rural areas can help to achieve a sustainable monarch population without inhibiting agricultural production. More information on the Monarch Collaborative can be found here.

The list of resources below has been compiled by the Monarch Collaborative to offer agricultural producers relevant technical information on managing and restoring habitat for monarch butterflies. Though the resources have been evaluated for quality of content, the opinions expressed in them do not necessarily reflect those of the Monarch Collaborative or its member organizations. This resource list may evolve over time as new information becomes available.

Public and Private Programs to Benefit Monarch Habitat

Agency Resources

- 1) NRCS (Natural Resources Conservation Service) Monarch Butterfly Conservation Effort
 - Description of the resources available to apply Farm Bill resources to monarch conservation in the ten-state program region, which includes TX, OK, KS, MO, IA, MN, WI, IL, IN, and OH.
 - Among others, selected resources on the NRCS site include:
 - USDA, NRCS Monarch Butterfly Plant Lists
 - o <u>Plant recommendations for monarch butterflies for the Midwest</u> (Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin).
 - Plant recommendations for monarch butterflies for the Southern Plains (Kansas, Oklahoma and Texas).
 - How Farmers Can Help Pollinators
 - How NRCS is Helping Pollinators
 - Habitat Restoration Tools through the Farm Bill
- 2) Farm Service Agency, CRP (Conservation Reserve Program) Honey Bee Initiative notice,
 - Mid-contract management activities and incentives to increase plant diversity to benefit monarchs and pollinators in the Upper Midwest, including plant lists.
- 3) <u>USDA Technical Note No. 78, 2nd Ed. Using 2014 Farm Bill Programs for Pollinator Conservation</u>
 - List of the Farm Bill conservation assistance programs and practices that can be used to enhance pollinator conservation. For the full list of applicable practices, see Table 3 on pages 9 and 10 of the document. See your local NRCS representative for state-specific practice specifications, and reference this technical note.
- 4) U.S. Fish and Wildlife Service Resources
 - Webpage on Monarchs that includes research, partnerships, and resources for individuals, communities, and agriculture specifically. The link to the agricultural resources can be found here. The site also includes links to financial assistance programs like the Monarch Butterfly Conservation Fund and The Bee and Butterfly Habitat Fund.



Non-Profit Resources

- 5) The Bee and Butterfly Habitat Fund
 - The Bee & Butterfly Habitat Fund is a 501(c)3 organization dedicated to restoring critical habitat to benefit honey bees, monarch butterflies and native pollinators.
- 6) Monarch Butterfly Conservation Fund. National Fish and Wildlife Foundation.
 - The Fund invests in projects that improve the availability of high-quality habitat and also increase the capacity needed to expand conservation efforts into the future.
- 7) <u>Monarch Conservation Toolbox</u>. Commission for Environmental Cooperation.
 - Website designed to explore best management practices, incentive programs, and pilot projects intended to restore, enhance and manage monarch habitat.

Agribusiness Resources

- 8) BASF
 - <u>Living Acres Research Initiative</u>.. Living Acres is a research initiative from BASF that focuses
 on providing best practices to farmers who want to increase biodiversity alongside modern
 agricultural operations.
 - <u>Sustainable Agricultural Resources</u>. A list of publications produced by BASF on various agricultural topics.
- 9) Syngenta
 - Operation Pollinator. Operation Pollinator is an international biodiversity program to boost the number of pollinating insects on commercial farms. It works by creating specific habitats, tailored to local conditions and native insects. Offers a series of resources on pollinators and pollinator habitat.

For additional information on monarch butterflies and their habitat the following sections may be of interest.

Monarch Habitat Development and Maintenance

Habitat evaluation and protection

- 10) Monarch Breeding Habitat Assessment Tool. University of MN Monarch Lab and Monarch Joint Venture
 - How to assess a site for characteristics of quality monarch habitat.
 - Recommendations for optimization of land for habitat.
 - Option to submit form to Monarch Lab for their habitat database.
- 11) Mowing: Best Practices for Monarchs. Monarch Joint Venture
 - Map with regional timeframes for best practices for mowing and other management techniques.
- 12) <u>Pollinators and Roadsides: BMPs for Managers and Decision Makers</u>. Federal Highway Administration and The Xerces Society.
 - Best management practices for pollinator habitat protection, restoration, and maintenance in alongside roadways
 - Considerations include management of noxious weeds, timing of mowing, and plant selection, among others.



Milkweed selection and propagation

- 13) <u>Native Milkweeds Pollinator Plants of the Central United States</u>. The Xerces Society, USDA Natural Resources Conservation Service, and Monarch Joint Venture.
 - Profiles of several species of commercially available native milkweed.
 - Site preparation and establishment techniques.
 - Incorporation of milkweed into NRCS conservation practices.
- 14) Milkweed Seed Finder. The Xerces Society.
 - Online database listing locally available milkweed species and seed providers by state.
 - General information on seed selection.
- 15) Milkweed Market. Monarch Watch
 - Ecoregion map and chart that links to appropriate milkweed species
 - Request milkweed seed and plugs directly from Monarch Watch
 - Vendor list for milkweed seed
- 16) Milkweeds: A Conservation Practitioner's Guide. The Xerces Society.
 - Milkweed biology, ties to monarch migration
 - The prevention of livestock poisoning
 - Seed collection, germination, establishment, harvest, processing
 - Promotional management practices
 - Milkweed pathogens
 - Case studies: yard landscaping, agricultural landscapes, roadside management
 - Listing of native species and their characteristics

Pollinator planting and maintenance

- 17) Pollinator-Friendly Plant Lists. The Xerces Society.
 - Pollinator plant lists for each of the following regions: California, Great Lakes, Maritime Northwest, Mid-Atlantic, Midwest, Northeast, Southeast and Southern Plains.
- 18) Ecoregional Pollinator Planting Guides. Pollinator Partnership.
 - Information about native pollinator-friendly plants for each of the North American ecoregions.
- 19) Pollinator Habitat Installation Guides. The Xerces Society.
 - NRCS-approved state-specific installation guides for establishing and maintaining habitat as a
 part of the following Farm Bill practices: conservation cover, hedgerow planting, and pollinator
 meadows.
 - <u>Establishing Pollinator Meadows from Seed</u>. A Xerces Society guide for establishing and managing a prairie planting.
- 20) Habitat Tip: No Milkweed, No Monarchs. Pheasants Forever
 - Information on the importance of milkweed and habitat.
 - Descriptions of six common milkweed varieties as well as their regional availability and cost.
 - Additional videos on monarchs and habitat are available on this Pheasants Forever YouTube site.
- 21) Planting Monarch Habitat. Iowa Monarch Conservation Consortium.
 - Webpage and video about planting Monarch habitat and important information, like soil temperature and seed planting depth, to consider when doing so.



Sourcing Native Seed

- 22) Monarch Butterflies and More. Tallgrass Prairie Center.
 - Information on native seed production and distribution and habitat
- 23) Milkweed Seed Supply Chains. Monarch Watch.
 - Description of a distributed system for gathering and selling locally specific milkweed.

State and Local Resources

[placeholder for links to state or regional efforts]

Please check with state NRCS offices, departments of natural resources or other appropriate state agencies for further resources and guidance.

Communications – quick reference sheets and presentations for spreading the word

- 24) Monarch Biology. Monarch Joint Venture.
 - General information on the monarch migrations, the life cycle of monarchs, and monarch habitat needs.
- 25) Monarch Butterfly Conservation Talking Points. Monarch Joint Venture.
- 26) Monarch Butterfly Conservation Webinar Series. USFWS and Monarch Joint Venture.
 - A series of archived webinars on monarch biology, monitoring, and conservation
- 27) Establishing Prairie Grasses and Wildflowers. Minnesota Department of Natural Resources.
 - Brochure addressing the main points for site preparation, planting, and maintenance of prairie habitat.
- 28) Regionally specific visual guides on monarchs, milkweed, larvae and host plants. The Xerces Society.
 - Northern Great Plains
 - Southeastern U.S.
 - Eastern U.S.
- 29) Monarch Waystation Program. Monarch Watch
 - Seed kit, including a variety of milkweed and other nectar plants
 - <u>Creating a Monarch Waystation</u> Planting and management instructions, option to report to a nationwide network of waystations.
- 30) Monarch Joint Venture Presentations
 - Six PowerPoint presentations on the monarch butterfly tailored for a variety of audiences available for download. Accompanying script provided for the "Monarch Butterfly Life Cycle and Conservation" PowerPoint.
- 31) Backyard Habitat for Monarch Butterflies. Missouri Department of Conservation.
 - Site conditions for developing a well-structured monarch garden in a backyard
 - Planting diagrams for dry and wet sites
 - List of local native pollinator plants, including milkweed species
- 32) Five Ways to Get Involved. Iowa Monarch Conservation Consortium.



- Five key actions that individuals can take to support Monarchs.

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Keystone Policy Center

Keystone Policy Center is the convener and facilitator of the Monarch Collaborative.

Keystone brings together crucial teams of stakeholders who have diverse individual perspectives but recognize a common need to address urgent issues with lasting solutions. For more than 40 years, Keystone has helped leaders move beyond fixed positions toward collaborative, action-oriented approaches to problem-solving. In this age of polarized debate on nearly every major topic in public policy, Keystone offers a refreshing yet proven blueprint for progress.