

Monarch Conservations Efforts by the USDA

In response to the direction from the Committee for the U.S. Department of Agriculture's (USDA) agencies to develop and implement strategies to help protect monarch butterfly populations and to preserve the natural habitats critical to their survival, the USDA provides the information below from the USDA's Forest Service and the Natural Resources Conservation Service.

USDA Forest Service (FS)

The Forest Service reports the following efforts to help protect monarch butterfly populations:

- FS helped develop, and is currently implementing, the North American Monarch Conservation Plan (NAMCP), a long-term cooperative agenda between Mexico, Canada, and the United States to conserve the monarch butterfly and its unique migratory phenomenon.
- FS International Programs works with managers and partners in the region of the Monarch Butterfly Biosphere Reserve in Mexico to build management capacity, provide guidance to communities for resource management, and conserve natural resources in the highly protected core zone of reserve.
- FS is implementing our native plant policy by working with state and public partners on the development of nectar rich forb species and genetically appropriate grass species that are beneficial to monarch butterflies.
- Accomplishments on our National Forests include a reduction in forest stand densities, which produces more Monarch habitat; an acceleration in the restoration of prairies, savannahs and woodlands; management of landscapes to better provide Monarch habitat across spring, summer, and fall seasons; use of prescribed burns to maximize benefits and mitigate potential harm to Monarch populations; acceleration of invasive plant treatments; and development of local milkweed seed production areas.
- USDA's Research and Development Monarch habitat research includes work on genecology studies for developing seed transfer zone guidelines; propagation research and field trials; wildland seed collection, plant growth and production; and developing new nurseries.

USDA Natural Resources Conservation Service (NRCS)

Given the seasonal distribution and migration of the monarch across agricultural lands, NRCS, since 2016, has been making concerted effort to work with agricultural producers to create and enhance monarch habitat on their land in ways that are compatible with their agricultural operations. It is hoped that by creating and maintaining enough habitat through voluntary, production compatible conservation, monarch populations will reach sustainable numbers that do not warrant listing of the monarch as a threatened or endangered species.

- As part of the North American Agreement on Environmental Cooperation (NAAEC) (<http://www.cec.org/about-us/NAAEC>), NRCS is working with other governmental entities and researchers to strengthen pollinator conservation efforts including monarchs, by contributing to the development of the *North American Pollinator Conservation Framework* to facilitate future actions and collaborations among Canada, Mexico, and the United States.
- NRCS funded a targeted 10-state conservation effort in the Northern and Southern Great Plains. NRCS invested \$25 million total during fiscal years 2016–2019 to establish or enhance 165,000 acres to address the decline of the monarch. NRCS provided technical and financial assistance to help producers and conservation partners plant milkweed and nectar-rich plants along field borders, in buffers along waterways and around wetlands, in pastures, and other suitable locations. NRCS also helped producers manage their pastures to increase populations of milkweed and nectar plants, all while improving the health of rangelands. The Environmental Quality Incentives Program and remaining funds from the former Wetlands Reserve Program provided most of the funding for this work. This 10-state monarch effort is part of NRCS’s Working Lands for Wildlife partnership (<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=stelprdb1046975>)
- In December 2016 NRCS and U.S. Fish and Wildlife Service (USFWS) completed the *Monarch Butterfly Conference Report; A collaboration of the Natural Resources Conservation Service and the U.S. Fish and Wildlife Service*, covering the 10-state conservation effort (above) explaining how 42 conservation practices and associated Conservation Stewardship Program (CSP) enhancements can help the eastern monarch population. Through the conference report, USFWS provides producers with regulatory predictability should the monarch become listed under the ESA. Predictability provides landowners with peace of mind—no matter the legal status of a species under ESA, that they can keep their working lands working with NRCS conservation systems in place.
- In April 2019, NRCS, USFWS, and other partners stood up the New England Pollinator Partnership (NEPP), a conservation effort that provides financial and technical assistance to agricultural producers in Connecticut, Massachusetts, Rhode Island, New Hampshire, Vermont, and Maine to implement conservation practices to address the decline in native pollinator populations, including the monarch, across New England by improving pollinator habitat. For example, conservation practices may include establishing wildflower gardens or flowering hedgerows adjacent to pollinator dependent crops as well as managing natural habitats. Beginning in fiscal year 2020, NRCS seeks to enroll 11,182 producers to promote pollinator conservation on 7,680 acres over the 25-year term of this partnership agreement.
- In April 2019, NRCS and USFWS formalized the New England Pollinator Partnership through completion of the *New England Pollinator Partnership: Biological Assessment, Opinion, Conference Report, and Partnership Agreement—A Collaboration of the Natural Resources Conservation Service and the U.S. Fish and Wildlife Service*, providing regulatory predictability to producers interested in supporting at-risk pollinators on their property by implementing any of 36 conservation practices and associated enhancements. The conference and biological opinion covers eleven pollinator species including the monarch. A

participating agricultural producer will not be asked to do more if bees or the monarch butterfly become endangered or threatened in the future.

- NRCS offers opportunities through CSP to establish monarch habitat nationwide. In fiscal years 2016–2019, NRCS directed \$19 million to implement actions across 277,000 acres to seed and plug milkweed and high-value monarch butterfly nectar plants on marginal cropland, field borders, contour buffer strips, and similar areas.
- NRCS Central National Technology Support Center biologists facilitated development of wildlife habitat evaluation guides, decision support tools, and on-the-ground training courses to support implementation of monarch conservation activities within the 10-state effort in the northern and southern Great Plains, as well as in the greater Appalachian Mountains region, Midwest and western Coastal Plain. These tools and training courses are used by NRCS biologists, planners, and NRCS partners engaged in implementation of on-the-ground monarch habitat conservation activities.
- NRCS Plant Materials Centers, working with other NRCS staff and partners, have produced publicly available online regional milkweed guides (<https://www.nrcs.usda.gov/wps/portal/nrcs/rpublications/plantmaterials/technical/publications/?ptype=mon>) and are currently evaluating methods to improve the establishment of milkweed in conservation plantings. Plant Materials Centers also continue to release geographically appropriate forb species to commercial growers that benefit many pollinators and insects and are nectar sources for monarch butterflies. Plant Materials Center and NRCS staff working with partners have developed regional plant lists, including milkweed and important nectar producing species to support NRCS monarch habitat efforts. In addition, to respond to seed shortages, cost challenges, and new species becoming commercially available, NRCS has expanded the monarch butterfly habitat species planting lists for fiscal year 2020.
- Science-based evaluations are underway to assess the effectiveness of NRCS monarch efforts:
 - In the Northern Great Plains, NRCS and a university partner are evaluating conservation outcomes of newly implemented monarch habitat projects. The data collected will be used to quantify the outcomes of NRCS conservation efforts and to estimate the potential direction of and impact of future work.
 - In the upper Midwest and southern Great Plains regions, NRCS and cooperators are working to compare and coordinate the habitat evaluation tools that are currently in use across monarch conservation partnerships. This project will quantify differences between the habitat evaluation tools in use and identify opportunities to better coordinate assessments.
- NRCS encourages public and private sector innovation in resource conservation through its Conservation Innovation Grants (CIG) program. A consistent priority addressed through the

CIG program is the development of tools, technologies, and strategies recognizing the connection of pollinators to agricultural landscapes, including monarch conservation on working lands. For example, NRCS supported a CIG project with the Iowa State University investigating cost effective methods and seed mixes to replace grass dominated habitat with grasses mixed with native forbs and milkweed and evaluated the value of various milkweed species for monarchs. The field component of this project finished in 2015 and findings were made available in 2018 (<https://www.frontiersin.org/articles/10.3389/fevo.2018.00169/full>) and will help in informing NRCS technical guidance for habitat establishment in turf and cool season grasses. NRCS identified improving monarch habitat as a priority in its most recent CIG Notice of Funding Availability.

- Additional information may be found at <http://www.nrcs.usda.gov/monarchs>.