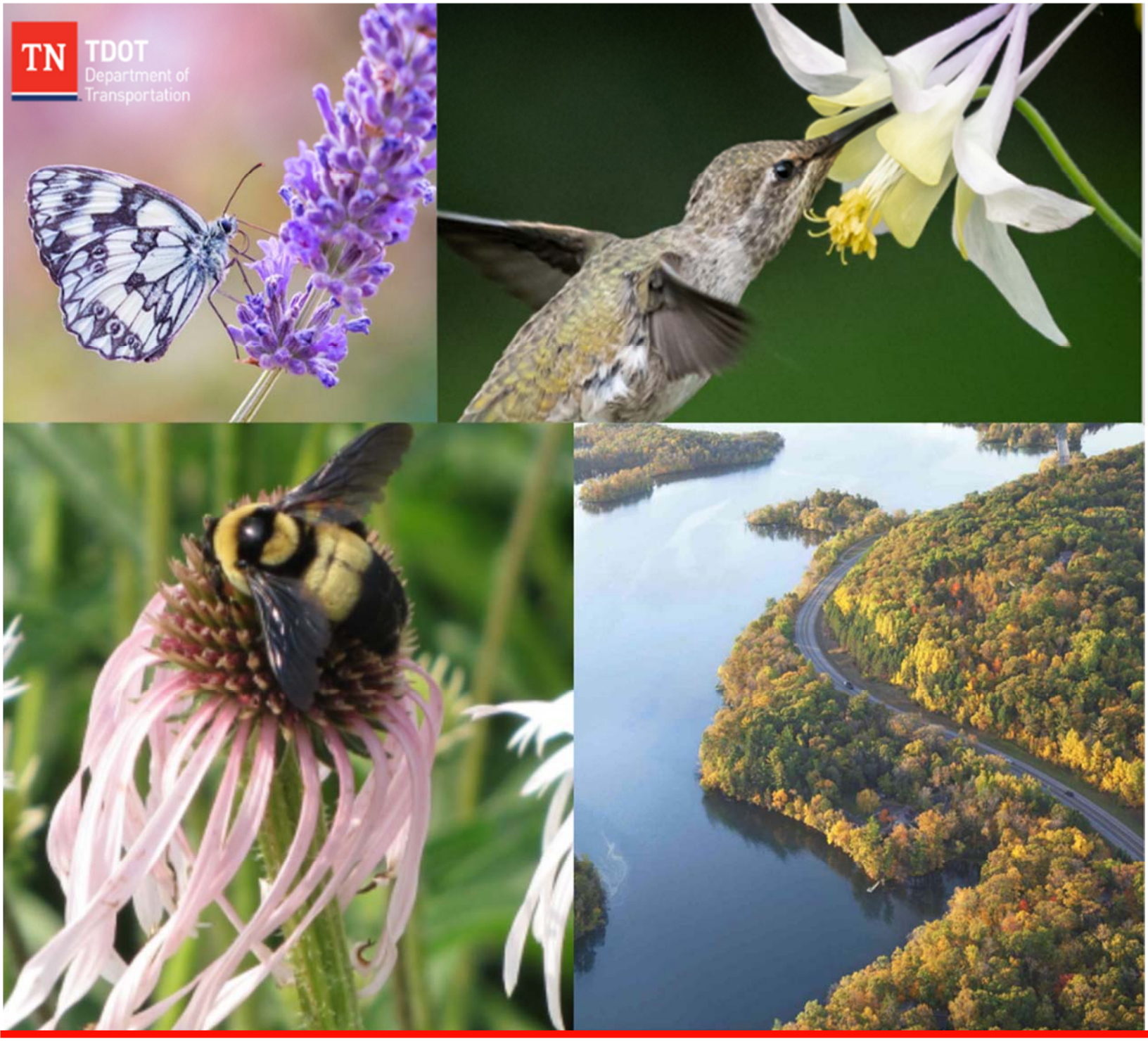

Pollinator Playbook

For the Great River Road Corridor

Prepared for the Mississippi River Parkway Commission | September 2023

Summary

This resource was written by staff from the Tennessee Department of Transportation's Highway Beautification Office in summer 2023. The document was produced in coordination with Tennessee's State Commission for the Great River Road, the Tennessee Delta Alliance, as well as the Transportation Committee for the 10-state Mississippi River Parkway Commission. A draft of the "Pollinator Playbook" was presented at the Annual Meeting of the Mississippi River Parkway Commission in Alton, Illinois on September 22, 2023.

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I . Introduction

Why Care About Pollinator Species?

Pollinators are an important part of our natural ecosystems throughout the world. The landscape along the Mississippi River is no exception. Their vital contribution to the pollination of plants along this river has cascading effects on the animals that call this area home. Since (enter year here), pollinators have been experiencing a rapid decline worldwide. This decline is linked to increased pesticide use, warming temperatures, habitat loss and many other factors. The actual effect of the loss of our pollinators is not entirely understood but is believed to have devastating effects on our ecosystem. States along the Mississippi River are doing their part, on statewide and local levels, to help pollinators bounce back from the brink of extinction and help the health of the habitats along this important river. The goal of this document is to provide important tools and resources to help with and guide your own pollinator protection and recovery programs. A variety of tools for different situations are provided for you to find which ones might fit the goals and resources at your disposal. The Mississippi River has high ecological and cultural importance, and we can all do our part in making sure its beauty persists for future generations.

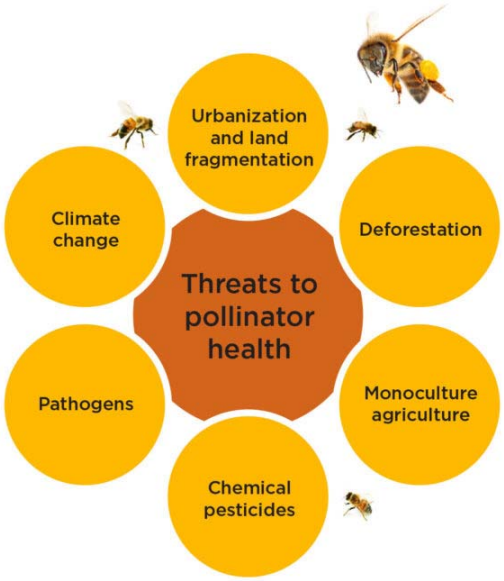


Figure 1. Reasons for Decline in Pollinator Species. Photo courtesy of the North American Pollinator Partnership.

Ecology of the Mississippi River and Its Pollinators

Organisms and their presence affect their environment in ways that go beyond what we can see directly. Plants and animals are deeply interconnected through a complex web of interactions within their habitats. Some of these animals are considered “keystone species”. This means that because of the vital role they play in their environment, their removal from an ecosystem can lead to powerful changes that have an overall cascading effect on the other organisms that inhabit the same area. Pollinators are considered keystone species due to the vital role they play in pollinating. Pollination is necessary for about 80 percent of plants to reproduce. Plant reproduction not only provides more plants for animals to eat directly, but it also provides animals with food in the form of nuts, fruit, and seeds. Those animals can thrive and the animals that eat those animals can thrive, causing both direct and indirect effects. Because of how important pollinators are to the environment, pollinator presence and abundance is considered an indicator of a healthy ecosystem.

Figure 2. Map of Flyways of North America. Map courtesy of the Wisconsin Department of Natural Resources, Waterfowl Rules Process.

The Mississippi River ecosystem relies heavily on pollinators to provide food for animals and beauty for visitors. The Mississippi flyway includes many important stopover points for migratory birds that breed in the northern United States and Canada that migrate to and from their wintering grounds in Central and South America. More than 325 bird species make this round-trip each year along the Mississippi Flyway. About 40% of all North American migrating waterfowl and shorebirds use this route due to its abundance of water, shelter, and food resources. This is where pollinators come in. Although many may not think of it, pollinators are responsible for creating many of the food resources that these birds rely on to make this long, tiring migration. Without these resources, many birds would not be able to get enough energy to make the final trek to their destinations. If the birds do not get the food, they need to make it to their final destinations, they may not be able to breed or survive.

Making moves to conserve pollinators along this significant ecological route is vital to the survival of migratory birds. Simply put, more pollinators mean healthier and increased populations of birds along the Mississippi Flyway. Their conservation is also important for our native plants and wildflowers that are both economically and aesthetically revered.

II . Recommendations

Pollinators matter. Not only do these critically endangered species play a main agricultural and ecological role to the Great River Road corridor, but they also could be the key to greater recreational and educational value along the route. Why should Great River Road stakeholders be concerned about pollinators? Because the establishment and maintenance of pollinator habitat along the Great River Road could not only provide much needed food and nesting areas, but it could add to the visitor experience by allowing for better roadside aesthetics, and increased birding and hiking opportunities. Public education about pollinators is also an opportunity to increased interpretation to the travelling public. Simply put… pollinator efforts and programming make the Great River Road a better National Scenic Byway.

It is recommended that the Mississippi River Parkway Commission continue to inventory pollinator habitat, education programs, and National Pollinator Week events happening through the Great River Road corridor.

In the following sections, this document will demonstrate that we all have a role to play in supporting pollinator species. Stakeholders of all types can make a difference. Though the examples listed in the following pages may vary in scope, tact, resources, or geography, they all have a common thread. Actions taken in support of pollinators all:

1. Elevate land management and maintenance practices for public rights-of-way and roadsides.

2. Educate the public.

3. Promote an ecological difference in support of pollinator species.

Any increase in interpretation or functional habitat along the Great River Road is a welcome feature, both for the pollinator species and for those who enjoy watching and learning about pollinator species.

III . What Federal & State Governments Can Do

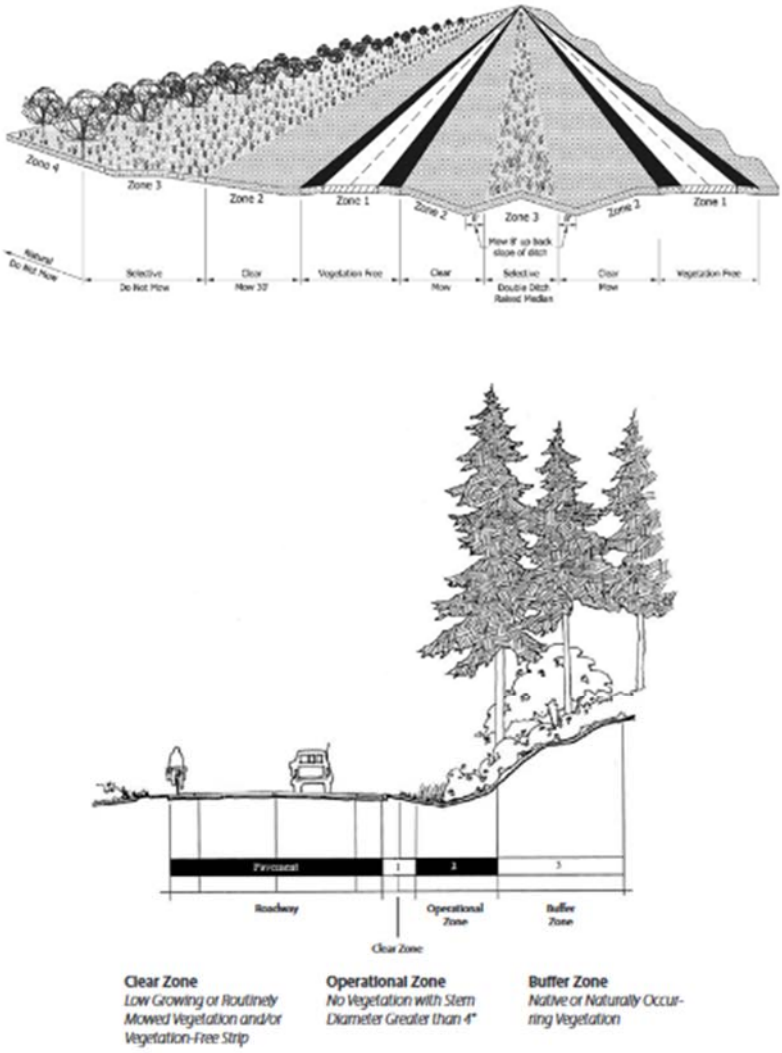
Land Management Practices

Many federal and state level pollinator efforts are aimed at establishment and maintenance of pollinator habitat of publicly managed lands. Generally, these lands include transportation assets such as Rest Areas, Welcome Centers, Park & Rides, medians, and roadsides. They also include State Forests, State Parks and National Wildlife Refuges & Preserves. The best management practices may vary from State to State, but generally all include best mowing practices; planting pollinator gardens; best pesticide for herbicide and pesticides; and more. These following practices were accessed by from publicly available print resources and websites, published pollinator management plans, and educational resources provided as outreach material by federal agencies.

Several land management best practices are highlighted in the Federal Highway Administration's December 2015 report, entitled: "Roadside Best Management Practices that Benefit Pollinators: Handbook for Supporting Pollinators through Roadside Maintenance and Landscape Design." These best practices include:

- **Enhance and Restore Native Vegetation** – Inventory vegetation to identify existing habitat as well as problem areas infiltrated by weeds. Next, make site appropriate management plans which protects plant diversity and remnants of native prairie, while also managing the other existing vegetation. When conducting inventories, be sure to include site or roadside conditions, spatial data, and maintain a database. This may include Integrated Vegetation Management (IVM) principles.

- **Frequency and Timing of Mowing** – Reduced mowing beyond the clear zone, immediately adjacent to the main travel way, to once annually after the growing season. This can benefit pollinator species and help to reduce maintenance costs. This act does not need to compromise aesthetics or motorist safety. An extensive list of general and environmental benefits from reduced mowing is included in Appendix E.



- **Herbicide**

Figure 3. Two examples of roadside mowing and maintenance zones, showing different vegetation. Photo courtesy of the Federal Highway Administration.

Recommendations

- **Reducing Harmful Use of Herbicides & Pesticides** – Spray less volume of herbicide by narrowing broadcast and only applying to limited targets. This will avoid damage to nontarget plants and reduce exposure to neighboring pollinators. This can also involve spraying a solution of multiple herbicides at the minimum concentration. Use of pesticides should be eliminated.

- **Rotational Prescribed Burns** - Prescribed burns rejuvenate pollinator habitat, such as prairies or meadows, by reintroducing nutrients to soil and providing an opportunity for greater plant diversity. Prescribed burns as a tactic, should be deployed on a cycle every 3 to 5 years so that native plant populations are allowed time to recover.

Figure 4. A prescribed burn of roadside prairie. Photo courtesy of the Iowa Department of Transportation.

State Legislation

State General Assemblies can legislate pollinator-friendly initiatives into being. This may include initiatives that have a fiscal impact, such as set-aside funding for pollinator habitat special projects or programming, but it can include efforts that have no fiscal impact. One such example of this exists with the State of Illinois and milkweed. Before the widespread use of herbicides, as late as the 1940's, milkweed was commonly found in most landscapes (including pastures and grazing areas) throughout North America. When fields were cut seasonally for hay, often milkweed would be cut and rolled alongside grasses and other flowering forbs. If a large enough concentration of milkweed was in the hay and fed to livestock the animal could

have been poisoned because of the compounds found in the milkweed plant itself. Over time, milkweed poisoning has led to ranchers, farmers, and whole communities to selectively target milkweed populations for removal.

In 2017, the Illinois General Assembly passed two laws, which were later signed into law, as a statewide reversal over previously adopted local restrictions on milkweed. The intent of the legislation was to encourage cultivation of the plant in support of the monarch butterfly and its caterpillars, who use milkweed as a host plant. The legislation bars county and municipal governments from classifying milkweed as a noxious or exotic weed and does not allow for locally managed programs which removal milkweed plants.

The Illinois legislation reads as follows:

Public Act 100-0557

HB0685 Enrolled LRB100 06879 AWJ 16929 b

AN ACT concerning local government.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Counties Code is amended by adding Section 5-1057.5 as follows:

(55 ILCS 5/5-1057.5 new)

Sec. 5-1057.5. Milkweed classification.

(a) For purposes of this Section, "milkweed" means Asclepias syriaca or other native Asclepias species.

(b) A county may not classify milkweed as a noxious or exotic weed.

(c) A county may not classify milkweed in a manner inconsistent with this Section. This Section is a limitation under subsection (i) of Section 6 of Article VII of the Illinois Constitution on the concurrent exercise by home rule units of powers and functions exercised by the State.

Section 10. The Illinois Municipal Code is amended by adding Section 11-20-6.5 as follows:

(65 ILCS 5/11-20-6.5 new)

Sec. 11-20-6.5. Milkweed classification.

(a) For purposes of this Section, "milkweed" means Asclepias syriaca or other native Asclepias species.

(b) The corporate authorities of a municipality may not classify milkweed as a noxious or exotic weed.

(c) A municipality may not classify milkweed in a manner inconsistent with this Section. This Section is a limitation under subsection (i) of Section 6 of Article VII of the Illinois Constitution on the concurrent exercise by home rule units of powers and functions exercised by the State.

Effective Date: 6/1/2018

Source: https://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=100-0557

U.S. & State Departments of Transportation (DOTs)

State Departments of Transportations across the nation recognize the benefits of enhancing roadsides to help sustain native pollinator populations, serve as much-needed habitat, and to act as a 'way station' for migrating species. Nationally, 33 of the 50 state DOTs participate and administer their own pollinator programming to various levels. Within the Great River Road corridor, 9 of the 10 state DOTs (all except Missouri) have special programming, vegetation management practices, or construction specifications supporting pollinator habitat on roadsides. Links to each of the 9 State DOT programs in the Great River Road corridor are listed in Appendix F.

Nationally, a full list of state DOT pollinator programming is kept by the Federal Highway Administration at https://www.environment.fhwa.dot.gov/env_topics/ecosystems/pollinators.aspx.

In 2014, the White House issued the Presential Memorandum, "Creating a Federal Strategy o Promote the Health of Honey Bees and Other Pollinators." The Memorandum directed the U.S. Department of Transportation to evaluate its guidance and resources, identify opportunities to increase pollinator habitat along roadways, and work with State DOTs to promote pollinator

friendly practices along corridors. Since 2015, the U.S. Department of Transportation and the Federal Highway Administration have issued several reports and publications to aid sister federal agencies, better inform state transportation agencies, and inspire local partners to action. These reports and publications serve as a written record of national best practices and include:

- **Roadside Best Management Practices that Benefit Pollinators: Handbook for Supporting Pollinators through Roadside Maintenance and Landscape Design** - This document describes best management practices (BMPs) for design and maintenance practitioners. It includes summaries and examples of pollinator friendly BMPs that transportation agencies can use to improve the quality of roadside habitat for pollinators. BMPs include activities such as adjusting roadside vegetation management techniques, enhancing, and restoring native roadside vegetation, and incorporating native plants and pollinator habitat into roadside landscape design.

  https://www.environment.fhwa.dot.gov/env_topics/ecosystems/Pollinators_Roadsides/BMPs_pollinators_landscapes.aspx

- **Pollinators and Roadsides: Best Management Practices for Managers and Decision Makers** - This document describes best management practices that transportation agencies can use to establish and improve roadside habitat for pollinators. Pollinator-friendly roadside management practices can reduce roadside operational costs, improve ecological outcomes, and benefit local and regional economies.

  https://www.environment.fhwa.dot.gov/env_topics/ecosystems/Pollinators_Roadsides/BMPs_pollinators_roadsides.aspx

- **Identifying the Current State of Practice for Vegetation Management Associated with Pollinator Health & Habitat: An Interview Report** – This report documents interviews with roadside vegetation managers and designers in nine State Departments of Transportation, conducted in 2014, to inform transportation managers about the state of the practice in protection and establishing pollinator habitat in roadsides.

  https://www.environment.fhwa.dot.gov/env_topics/ecosystems/pollinator_reports/pollinator_interview_rpt.aspx

- **Literature Review: Pollinator Habitat Enhancement and Best Management Practices in Highway Rights-of-Way** - This document is a first step in FHWA's effort to provide best management practices for transportation agencies to develop pollinator programs in their jurisdictions and enhance these programs where they already exist.

  https://www.environment.fhwa.dot.gov/env_topics/ecosystems/pollinator_reports/pollinators_BMPs_in_highway_ROW.aspx

Other Federal Resources

Monarch Butterfly and Pollinators Conservation Fund, created by the National Fish and Wildlife Foundation, provides grants in two separate categories to those that apply for funding. The first category is technical assistance for private working lands, which provides fundings to help more private landowners get involved in pollinator conservation efforts. These funds can be used for education, outreach, hiring of contractors and other costs associated with providing pollinator habitat on working lands. The second category is habitat improvement and involves providing funds to projects that will directly improve existing habitats so that they will be more desirable and helpful for pollinators. More information can be found on the National Fish and Wildlife Foundation website.

Other State Programming

In addition to Departments of Transportation, various other departments and agencies deliver pollinator programming at the state level. For the 10 states comprising the Great River Road corridor, these agencies and programs include:

- **Illinois Department of Natural Resources** – This agency has an education program called Passion for Pollinators dedicated to providing information to the public about pollinators, hosting events geared toward helping pollinators and provides resources for people to implement what they have learned at home.

- **Iowa Department of Natural Resources** – This agency provides information about the at-risk pollinators in the state and their ecology. They give resources to the public for planting their own pollinator garden successfully. They also aid private landowners with larger properties for guidance on larger planting and even the types of trees and shrubs that can be planted to help pollinators.

- **Kentucky Department of Agriculture** – This agency published a Pollinator Protection Plan that incorporates the goals of dozens of stakeholders from a variety of different backgrounds to provide a set document on how the state of Kentucky plans to protect pollinators and their necessary habitat. Their plan is inclusive to all types of pollinators and focuses on their overall health by promoting practices that limit harmful pesticide use, increase pollinator habitat, and provide education and outreach for pollinators.

- **Louisiana Wildlife Federation** – This agency is partnered with the National Wildlife Federation and their Gardens for Wildlife program. This partnership allowed this organization to plant areas to provide habitat for pollinators and other wildlife and provide education and certification resources for these gardens. This program allows different community venues to plant gardens that can become certified wildlife gardens. This not only provides the habitat itself, but also brings awareness to the cause of protecting wildlife, pollinators included.

- **Wisconsin Department of Natural Resources** – This agency conducts pollinator events, plantings, and research to conserve pollinators and conduct outreach. They promote on-the-ground conservation work conducted by different agencies and private landowners through nearly $2 million in Natural Heritage Conservation grants. These grants aim to re-establish and manage habitat for certain at risk and endangered species in the state. Projects big and small can be supported by funding from this grant, should it be awarded. Their Pollinators in the Parks initiative aims to provide funding to select state parks to increase pollinator habitat on their properties. Their Wisconsin Bumble Bee Brigade is a community science program that recruits locals to conduct both general/incidental observation and set area surveys to collect pollinator data and get involved in science. They provide all training and necessary forms and use collected photos to do research. They have completed many pollinator plot plantings and continue to work with partners to create more habitat for healthy pollinator populations.

IV. What Local Governments & Non-Profits Can Do

In addition to Federal and State programs, local governments and regional non-profits are delivering pollinator programming throughout the Great River Road corridor. These programs are often "where the rubber meets the road" and are centered on educating and inspiring residents about pollinator topics and empowering them to take action in their homes. These regional and local programs offer everything from grants to public education campaigns, innovative community planning efforts to reimagined public spaces.

- **The City of Eau Claire, Wisconsin** – The city encourages residents to participate in "No Mow May" and amended local mowing codes enforcement dates. This campaign allowed lawns to grow and provide emerging habitat for pollinator species migrating north during the month of May. No Mow May promotes the growth of wildflowers, which provide important nectar and pollen to pollinators. The city also provides information on planting native plants for your lawn and how to build bee houses. The city provides special mowing tips for first time participants in No Mow May who may be skeptical or have questions.

- **Minnesota Board of Water and Soil Resources** – The Board formed a pilot program called "Lawns to Legumes", which offers a combination of workshops, coaching, planting guides and cost-share funding (individual support grants) for installing pollinator-friendly native plantings in residential lawns. The Board created an electronic interactive map that shows funded projects statewide. The Board has also created an instructional booklet called "Planting for Pollinators: Principles and Design for Residential Pollinator Habitat" to give residents a guide for planting their own pollinator way station in their own lawn or garden.

- **The City of St. Paul, Minnesota** – The city has a Pollination Station program which involves many small pockets of gardens across the jurisdiction containing native plants. The Pollinator Stations are exclusively located on public lands and serve as pollinator habitat. Interpretive materials at the stations make each one an education hub that promotes community learning centered around land stewardship and urban ecology.

Figure 5. Monarch butterflies enjoying a native planting. Photo courtesy of the City of Eagan.

- **The City of Eagan, Minnesota** – The city adopted a pollinator-friendly Landscaping Design Guidelines in 2012. The Guidelines help residents to establish lawns using native grasses, helps the city to incorporate native plants in other community greenspaces, and provides instruction for how residents can install rain gardens to provide supplemental water and avoiding harmful herbicide and pesticide use for public for garden maintenance.

- **The City of Mandeville, Louisiana** – The City signed the National Wildlife Federation's "Mayors' Monarch Pledge" to commit towards the actions needed to protect and conserve monarch butterflies and their habitat. Through a proclamation, this city recognized the importance of pollinators like monarchs for the health of their ecosystem and the health of their community.

V. How Businesses & Industry Can Help

Leadership in support of pollinators has come from private industry and power utilities throughout the Great River Road corridor as well. Examples of this leadership can be found in these the case studies and examples listed below:

- **Ameren, Missouri/Illinois** – The power utility created a pollinator protection program in Missouri and Illinois to offset environmental impacts made by their company. These initiatives involve partnering with local non-profits and environmental groups to turn land owned by Ameren into pollinator habitat. Pollinator friendly vegetation is selected and maintained.

- **Tennessee Valley Authority, Tennessee/Kentucky** – The power utility is engaged in environmental stewardship across the land that they own and manage. One of the facets of this stewardship is focused on conserving pollinators. The power utility aims to combat the habitat loss that pollinators face through encouraging native plants along powerline Rights-of-ways, using integrated vegetation management (IVM), managing grasslands for native plants, planting wildflowers in previous turf grass sites and using selective herbicide. They also participate in EPRI's Power in Pollinators Initiative, which collects information on what steps utility companies are using to help pollinators to better determine if they are having an impact.

Figure 6. Native plants such as Rough Blazingstar located in a utility Right-of-Way. Photo courtesy of the Tennessee Valley Authority.

- **Mississippi Valley Conservancy, Wisconsin** – The Conservancy is a firm is dedicated to conserving native habitat and promoting biodiversity in the Mississippi Valley. They are a land trust and not only own and manage their own lands for habitat improvement efforts, but also provide private landowners with resources and funding needed to run their own habitat improvement projects. The Conservancy utilizes best management practices for healthy native habitat and provide education to encourage local involvement in conservation efforts. They conduct citizen science efforts including BioBlitz and pollinator number reporting. They have webinars on the best pollinator gardening practices, help facilitate pollinator research projects and partner with landowners that are interested in planting their own pollinator gardens and larger land plots.

- **Abbott Northwestern Hospital, Minnesota** – The hospital planted native, pollinator friendly vegetation along a 5,000-square-foot slope bordering a neighboring greenway. This planting used native grasses with deep root systems and helped to reduce erosion from a steep slope. The plants chosen were attractive to pollinators, bloomed at ideal times for pollinators use, and grew well on steep slopes. Interactive and instructional signage was also installed as part of the project.

- **Pollinate Minnesota, Minnesota** – This group has pushed to pass legislation that supports their goals of pollinator conservation through different protections and pesticide bans across the state. Pollinate Minnesota has a “Pollinator Friendly Cities” program that currently has 44 municipalities signed on. These localities protect pollinators on the land that they manage and have adopted pollinator-friendly resolutions from their program toolkit.

VI. How We All Can Help

Previous sections of this document have covered how governments, non-profits and industry are providing pollinator habitat and programming throughout the Great River Road corridor. Every stakeholder, even you, can help threatened pollinator species by implementing the some of the techniques mentioned below:

- **Use Native Plants** - Use native pollinator-friendly plants in your landscape. Shrubs and trees such as dogwood, blueberry, cherry, plum, willow, and poplar provide pollen or nectar, or north early in spring when food is scarce.

- **Choose a Mixture of Plants** – Choose a mixture of plants that bloom through the growing season (spring, summer, and fall). Different flower colors, shapes and scents will attract a wide variety of pollinator species to your garden.

- **Reduce Pesticide Use** – Reduce or eliminate pesticide use in your landscape. Do not purchase nursery plants which have been impregnated with pesticides.

- **Plant Milkweed**

- **Provide Clean Water** – Provide clean water for pollinators in a shallow basin with half-submerged stones for perches.

- **Support Land Conservation**

- **Protect Grasslands** – Grasslands provide native plants that offer nectar and pollen to pollinator species. Grasslands have diminished 90% over time, faster than any other ecosystem in North America.

- **Give Bees Nesting Places** – There are 4,000 bee species native to North America and most of those don't form hives. Solitary female bees lay eggs in tunnels or in sandy soil. Offer nesting spots by leaving tree snags on your property, by leaving bare patches of sandy soil, or by building a bee house.

VII. Conclusion

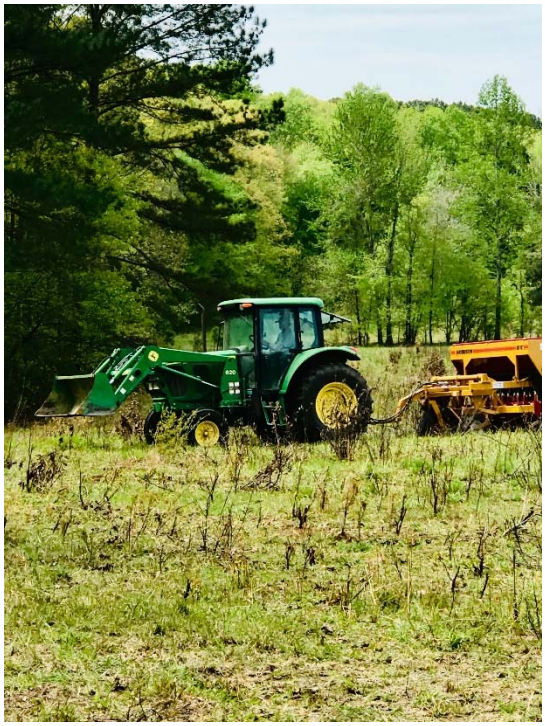


Figure 7. Pollinator habitat being established with a seed drill in Tennessee. Photo courtesy of the Tennessee Department of Transportation.

Pollination is a natural and free service carried out by a variety of specialized insects and other animals which enables plant reproduction. This service is important everywhere, but even more so along the Mississippi Flyway and the Great River Road corridor. Here, pollinators sustain not only agriculture but a large number of North America's migrating bird populations. In addition to important ecological and agricultural roles, pollinator species and the native plants they thrive off boost aesthetics along the Great River Road and elevate the visitor experience on one of America's premier National Scenic Byways.

Through research and preparation of this document, it was discovered that a tremendous amount of existing support and programming exists for pollinator species throughout the Great River Road corridor. Federal and statewide programs ensure improved maintenance and management of land and public rights-of-way, Local programs educate and inspire residents and travelers. Even Great River Road Interpretive Centers have contributed to this effort, through special planted areas, installing specialized interpretive signage, and hosting special events year-round. This robust support and programming help to make a difference in support of all pollinator species.

This document demonstrates that everyone can play a part in supporting pollinators. The document highlights what current practices are available throughout the 10 states of the Great River Road corridor and provides electronic links to those offerings. In the Appendix, please find additional resources to best practices and other helpful source documents. These state, local, and national efforts have been developed to give everyone the tools they need to start making a difference and helping rapidly declining pollinator populations.

Appendices

Appendix A: Glossary of Terms

All American Road (AAR) – Public roads that have been designated by the federal government as satisfying National Scenic Byways criteria and have satisfied the additional criteria and requirements for designation as All-American Roads pursuant to the America's Byway Program and its implementing legislation and regulations. To receive this designation, a road must possess multiple intrinsic qualities that are nationally significant and contain one-of-a-kind features that do not exist elsewhere.

America's Byways® - The term used to describe and market the collection of 150 distinct roads designated by the U.S. Secretary of Transportation. America's Byways include All-American Roads and National Scenic Byways.

Byway – A roadway or waterway usually designated by its state DOT, state legislation, or federal agency, that has tourist destinations within its corridor. It is a label used throughout the nation to identify approximately 1,000 routes because of their special attributes and locations as recognized by the States and Federal Government.

Byway Corridor – The roadway right-of-way, plus the adjacent area that reflects the attributes of the byway. The width of the corridor can vary with different intrinsic qualities.

Champion – A strong advocate with influence. Could be a person, group or governmental body.

Corridor Management Plan (CMP) – A plan that must be prepared for the scenic byway corridor proposed for national designation. It should provide for the conservation and enhancement of the byway's intrinsic qualities as well as the promotion of tourism and economic development.

Designation – The classification by a state and/or federal agency that defines a roadway or waterway as a byway. It includes the acceptance of the byway's written Corridor Management Plan to preserve the byway's integrity.

Easements – Voluntary agreements in which a property owner agrees to certain restrictions such as protecting agricultural lands, maintaining the qualities of a viewshed, or preserving historic facades.

Electric Power Research Institute (EPRI) - The Electric Power Research Institute conducts research, development, and demonstration projects for the benefit of the public in the United States and internationally.

Environmental Risk Assessment (ERA) - Environmental Risk Assessment. A process of assessment used to determine the probability of human activities causing an adverse outcome of environmental changes.

Federal Highway Administration (Federal Highways or FHWA) – The lead Federal agency for the National Scenic Byway Program. FHWA has a Division Office in each State that manages the program.

Federal Highway Beautification Act (FHBA) – The legislation which broadly protects roadside quality and viewsheds through various encroaching occurrences, including the signage on the Interstate and Federal-Aid Primary highway systems.

Interpretive Centers - A network of museums and interpretive centers about the Mississippi River along the Great River Road. The institution must interpret the Mississippi River or some significant aspect or relationship to the river with a high level of quality and be open to the public on a published, regular basis. Those in its network must represent an overall theme and at least one of 11 major themes to be included.

Mississippi River Parkway Commission (MRPC) - A nonprofit organization founded in 1938 to preserve and improve the natural resources, cultural heritage, economic viability, scenic quality, recreational amenities, and other features significant to the Mississippi River Valley.

National Scenic Byway – A scenic highway which is designated by the federal government as satisfying the criteria for a National Scenic Byway pursuant to Section 162 of Title 23 USC and any federal regulations and/or guidelines. To be designated, a road must possess at least one of the six intrinsic qualities. The features contributing to the distinctive characteristics of the corridor's intrinsic qualities must possess regional significance.

National Scenic Byway Program (NSBP) – Program managed and administered by FHWA, as specified in law 23, U.S.C. 162.

Ordinance - A law set forth by a governmental authority, specifically a municipal regulation.

Resources – Refers to byway assets, attributes, features and information found in the environs of the byway corridor. Could refer to vistas, buildings sites, natural life, all of which contribute to the intrinsic quality of the byway.

Rights Of Way - A legal right, established by usage or grant, to pass along a specific route through grounds or property belonging to another.

Stakeholder – A person, group, organization, government entity or business that has a legitimate concern or interest in potential actions that could come from the byway process.

Viewshed – The entire landscape visible from a particular point. In the case of a byway, the viewshed is the entire landscape visible from any point along the road.

Visitor Experience – The perceptions, feelings, reactions, and memories a visitor has in relationship with the surrounding environment.

Xerces Society - A non-profit, science and research organization dedicated to invertebrate conservation. This society often collaborates with a variety of stakeholders to promote outreach, education, and research on invertebrates in the United States.

Appendix B: Frequently Asked Questions

What is a pollinator and why are they important?

A pollinator is any animal that transports pollen from flower to flower, fertilizing plants and allowing flowering plants to reproduce. They approach these flowers in search of nectar, their primary food source. One pollinator, the honeybee, is an integral part of agriculture and is responsible for pollinating over 80 percent all flowering plants, including our food crops. Other important pollinators include native bumblebees, flies, moths, butterflies, birds, and bats. These native pollinators are responsible for pollinating our native plants and wildflowers. There are over 200,000 species of pollinators worldwide.

How do I identify pollinators?

Pollinators come in all shapes and sizes, so it is often difficult to determine what insects, birds and bats are pollinators and which ones are. Local guidebooks and national guidebooks like those provided by the Xerces Society are tools that you can use to determine what species visiting your garden are pollinators. Xerces also has citizen science monitoring guides to give you the tools you need to help scientists conduct pollinator monitoring.

What's the importance of pollinator diversity?

Different species of pollinators often pollinate different plant species and plant types. Plants have different flower shapes, flowering times, and plant protection mechanisms. This variety requires special adaptations from pollinators for them to reach the nectar and pollinate those plants. One pollinator cannot manage all these adaptations, so a huge diversity of pollinators is necessary to make sure all of the flowering plants that need fertilization are able to get it.

What attracts pollinators to a specific plant?

Color, scent, nectar, and pollen can attract pollinators to a plant. Some pollinators look for specific traits under these categories and others are more generalists. Many commercially grown, non-native plants have the color and scent pollinators are looking for, but not the nectar or pollen. The lack of nectar means a lack of food for pollinators and the lack of pollen means that the pollinators are not providing their environmental service. The prevalence of these plants can lead to an expenditure of energy without a reward.

What are the greatest threats to pollinators?

A myriad of threats that are affect pollinators today. The prevalence of toxic pesticides used in agriculture, disease, habitat loss associated with human development, and climate change and

its effects on pollinator emergence and plant flowering time are some of the many threats that pollinators are facing. It is because of these threats that we have seen such a mass die-off of pollinators within the last few decades.

How do I know which pesticides are safe to use?

There are many local organizations within each of the 10 states that have information on how to safely use pesticides around pollinators. Federal organizations like the USDA and National Parks service also have resources that highlight the safe and unsafe pesticides.

How can I do my part to help protect pollinators?

There is so much that you can do to help protect pollinators! Many of the ways are highlighted in this playbook. You can plant native plants in your garden or in the areas you manage. You can attend BioBlitzes and conduct citizen science so researchers can learn more about them. You can conduct best management practices for pesticide use and mowing when permitted. Even if you live in somewhere where these tasks aren't possible, you can still spread awareness and talk to local legislature about ways you can improve local ordinances to help pollinators. There is no shortage of ways big or small that everyone can do their part to help these vital animals.

Why are pollinator species important?

Pollinators play inadvertent matchmakers for plants since they move pollen from the male part of a plant (stamen) to the female part of another plant (pistil). More than three quarters of the flowering plants worldwide mature via this transfer of pollen. This maturation in plants helps the production of fruit and seeds, and even helps to the plant species itself by developing cross-fertilizing different genes.

Pollinator populations also play a critical role in agriculture, helping bring apples, berries, cucumbers, cotton, melon, plum, squash, tomatoes, and other plants to harvest.

What attracts pollinators to a plant?

The color, nectar, pollen, and scent attract pollinator species to a plant. Some pollinators prefer specific species of plants, while other (such as honeybees) are generalists and pollinate many different types of plants.

What is the difference between Colony Collapse Disorder and Pollinator Decline?

Honey beekeepers began noticing Colony Collapse Disorder in the early 2000's, but other native pollinator species have been declining for decades. Several pollinator species have been in declined since the 1950s, largely due to widespread pesticide use, habitat loss, increased parasites and other pests, as well as other stressors.

Appendix C: Great River Road Interpretive Centers

Below is a listing of pollinator friendly activities, programming, or practices that have found to have occurred at Great River Road Interpretive Centers throughout the 10-state corridor.

Arkansas

- **Arkansas Post Museum State Park**: This park has begun a four-acre prairie grass restoration program, planting native grasses and wildflowers in the restoration area. They provide tours to visitors to get them interested in the process.

- **Dale Bumpers White River National Wildlife Refuge Visitor Center**: Like many NWR's, Dale Bumpers White River National Wildlife Refuge conserves and manages native habitats for all forms of wildlife including pollinators and implements best management practices.

- **Lake Chicot State Park**: They provide an Arkansas state butterfly checklist, which encourages the public to get excited about seeing pollinators out in the wild. This park strives to maintain the natural ecosystems within its borders, thereby providing habitat for native wildlife, pollinators included.

Illinois

- **Black Hawk State Historic Site**: This site preserves 3 different types of native ecosystem within its borders: Prairie, Woodland, and Riparian. This preservation of natural areas provides homes for pollinators and other wildlife.

- **National Great Rivers Museum**: Provides educational outreach to visitors about the environment and ecology surrounding the Mississippi River and the importance of these elements. The foundation that manages this museum is a non-profit dedicated to environmental stewardship.

Iowa

- **EB Lyons Interpretive Center at Mines of Spain**: Marked as a "Watchable Wildlife Area", this site conserves natural wetland, prairie and forest habitat along the Mississippi River. This conservation effort provides native plants for pollinators to utilize.

- **Hurstville Interpretive Center**: Provides restored native prairie and wetland that can provide habitat for native pollinators. They also have a planted pollinator garden full of native plants that attract a variety of pollinators for visitors to view.

- **Motor Mill Historic Site**: This site has restored rare native plant communities within its memorial savanna, providing unique and vital habitat to pollinators and other wildlife in the area. They also manage invasive plants to promote the growth of native vegetation.

- **Nahant Marsh Education Center**: This center has a monarch release party annually which collects monarchs from eggs, raises them, and tags them so that they may be tracked along their migration. They also host pollinator conferences and outreach events onsite.

- **National Mississippi River Museum & Aquarium**: They have installed a greenhouse to aid in the museum's work on pollinator conservation. They recognize the cascading effect that the loss of pollinators can have on the environment and are dedicated to combating that loss. This space is used to grow native plants for future habitat plantings and as a source of conversation and outreach on pollinator conservation.

Wisconsin

- **Genoa National Fish Hatchery and Great River Road Interpretive Center**: This site's welcome center features native wildflowers around their buildings and had a butterfly garden by their main office to provide quality habitat to butterflies and other pollinators.

- **Great River Road Visitor and Learning Center**: This visitor center has a native garden managed by local volunteers and funded through generous donors. Gardens like this one provide great habitat for pollinators and help sustain healthy pollinator populations.

Appendix D: Presidential Memorandum

The White House
Office of the Press Secretary
For Immediate Release
June 20, 2014

Presidential Memorandum -- Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators

MEMORANDUM FOR HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES
SUBJECT: Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators

Pollinators contribute substantially to the economy of the United States and are vital to keeping fruits, nuts, and vegetables in our diets. Honey bee pollination alone adds more than $15 billion in value to agricultural crops each year in the United States. Over the past few decades, there has been a significant loss of pollinators, including honey bees, native bees, birds, bats, and butterflies, from the environment. The problem is serious and requires immediate attention to ensure the sustainability of our food production systems, avoid additional economic impact on the agricultural sector, and protect the health of the environment.

Pollinator losses have been severe. The number of migrating Monarch butterflies sank to the lowest recorded population level in 2013-14, and there is an imminent risk of failed migration. The continued loss of commercial honey bee colonies poses a threat to the economic stability of commercial beekeeping and pollination operations in the United States, which could have profound implications for agriculture and food. Severe yearly declines create concern that bee colony losses could reach a point from which the commercial pollination industry would not be able to adequately recover. The loss of native bees, which also play a key role in pollination of crops, is much less studied, but many native bee species are believed to be in decline. Scientists believe that bee losses are likely caused by a combination of stressors, including poor bee nutrition, loss of forage lands, parasites, pathogens, lack of genetic diversity, and exposure to pesticides.

Given the breadth, severity, and persistence of pollinator losses, it is critical to expand Federal efforts and take new steps to reverse pollinator losses and help restore populations to healthy levels. These steps should include the development of new public-private partnerships and increased citizen engagement. Therefore, by the authority vested in me as President by the Constitution and the laws of the United States of America, I hereby direct the following:

Section 1. Establishing the Pollinator Health Task Force. There is hereby established the Pollinator Health Task Force (Task Force), to be co-chaired by the Secretary of Agriculture and

the Administrator of the Environmental Protection Agency. In addition to the Co-Chairs, the Task Force shall also include the heads, or their designated representatives, from:

(a) the Department of State;

(b) the Department of Defense;

(c) the Department of the Interior;

(d) the Department of Housing and Urban Development;

(e) the Department of Transportation;

(f) the Department of Energy;

(g) the Department of Education;

(h) the Council on Environmental Quality;

(i) the Domestic Policy Council;

(j) the General Services Administration;

(k) the National Science Foundation;

(l) the National Security Council Staff;

(m) the Office of Management and Budget;

(n) the Office of Science and Technology Policy; and

(o) such executive departments, agencies, and offices as the Co-Chairs may designate.

Sec. 2. Mission and Function of the Task Force. Within 180 days of the date of this memorandum, the Task Force shall develop a National Pollinator Health Strategy (Strategy), which shall include explicit goals, milestones, and metrics to measure progress. The Strategy shall include the following components:

(a) Pollinator Research Action Plan. The Strategy shall include an Action Plan (Plan) to focus Federal efforts on understanding, preventing, and recovering from pollinator losses. The Plan shall be informed by research on relevant topics and include:

(i) studies of the health of managed honey bees and native bees, including longitudinal studies, to determine the relative contributions of, and mitigation strategies for, different stressors leading to species declines and colony collapse

disorder, including exposure to pesticides, poor nutrition, parasites and other pests, toxins, loss of habitat and reduced natural forage, pathogens, and unsustainable management practices;

(ii) plans for expanded collection and sharing of data related to pollinator losses, technologies for continuous monitoring of honey bee hive health, and use of public-private partnerships, as appropriate, to provide information on the status and trends of managed hive losses;

(iii) assessments of the status of native pollinators, including the Monarch butterfly and bees, and modeling of native pollinator populations and habitats;

(iv) strategies for developing affordable seed mixes, including native pollinator-friendly plants, for maintenance of honey bees and other pollinators, and guidelines for and evaluations of the effectiveness of using pollinator-friendly seed mixes for restoration and reclamation projects;

(v) identification of existing and new methods and best practices to reduce pollinator exposure to pesticides, and new cost-effective ways to control bee pests and diseases; and

(vi) strategies for targeting resources toward areas of high risk and restoration potential and prioritizing plans for restoration of pollinator habitat, based on those areas that will yield the greatest expected net benefits.

(b) Public Education Plan. The Strategy shall include plans for expanding and coordinating public education programs outlining steps individuals and businesses can take to help address the loss of pollinators. It shall also include recommendations for a coordinated public education campaign aimed at individuals, corporations, small businesses, schools, libraries, and museums to significantly increase public awareness of the importance of pollinators and the steps that can be taken to protect them.

(c) Public-Private Partnerships. The Strategy shall include recommendations for developing public-private partnerships to build on Federal efforts to encourage the protection of pollinators and increase the quality and amount of habitat and forage for pollinators. In developing this part of the Strategy, the Task Force shall consult with external stakeholders, including State, tribal, and local governments, farmers, corporations, and nongovernmental organizations.

(d) Task Force member agencies shall report regularly to the Task Force on their efforts to implement section 3 of this memorandum.

Sec. 3. Increasing and Improving Pollinator Habitat. Unless otherwise specified, within 180 days of the date of this memorandum:

(a) Task Force member agencies shall develop and provide to the Task Force plans to enhance pollinator habitat, and subsequently implement, as appropriate, such plans on their managed lands and facilities, consistent with their missions and public safety. These plans may include: facility landscaping, including easements; land management; policies with respect to road and other rights-of-way; educational gardens; use of integrated vegetation and pest management; increased native vegetation; and application of pollinator-friendly best management practices and seed mixes. Task Force member agencies shall also review any new or renewing land management contracts and grants for the opportunity to include requirements for enhancing pollinator habitat.

(b) Task Force member agencies shall evaluate permit and management practices on power line, pipeline, utility, and other rights-of-way and easements, and, consistent with applicable law, make any necessary and appropriate changes to enhance pollinator habitat on Federal lands through the use of integrated vegetation and pest management and pollinator-friendly best management practices, and by supplementing existing agreements and memoranda of understanding with rights-of-way holders, where appropriate, to establish and improve pollinator habitat.

(c) Task Force member agencies shall incorporate pollinator health as a component of all future restoration and reclamation projects, as appropriate, including all annual restoration plans.

(d) The Council on Environmental Quality and the General Services Administration shall, within 90 days of the date of this memorandum, revise their respective guidance documents for designed landscapes and public buildings to incorporate, as appropriate, pollinator-friendly practices into site landscape performance requirements to create and maintain high quality habitats for pollinators. Future landscaping projects at all Federal facilities shall, to the maximum extent appropriate, use plants beneficial to pollinators.

(e) The Departments of Agriculture and the Interior shall, within 90 days of the date of this memorandum, develop best management practices for executive departments and agencies to enhance pollinator habitat on Federal lands.

(f) The Departments of Agriculture and the Interior shall establish a reserve of native seed mixes, including pollinator-friendly plants, for use on post-fire rehabilitation projects and other restoration activities.

(g) The Department of Agriculture shall, as appropriate and consistent with applicable law, substantially increase both the acreage and forage value of pollinator habitat in the Department's conservation programs, including the Conservation Reserve Program, and provide technical assistance, through collaboration with the land-grant university-based cooperative extension services, to executive departments and agencies, State, local, and

tribal governments, and other entities and individuals, including farmers and ranchers, in planting the most suitable pollinator-friendly habitats.

(h) The Department of the Interior shall assist States and State wildlife organizations, as appropriate, in identifying and implementing projects to conserve pollinators at risk of endangerment and further pollinator conservation through the revision and implementation of individual State Wildlife Action Plans. The Department of the Interior shall, upon request, provide technical support for these efforts, and keep the Task Force apprised of such collaborations.

(i) The Department of Transportation shall evaluate its current guidance for grantees and informational resources to identify opportunities to increase pollinator habitat along roadways and implement improvements, as appropriate. The Department of Transportation shall work with State Departments of Transportation and transportation associations to promote pollinator-friendly practices and corridors. The Department of Transportation shall evaluate opportunities to make railways, pipelines, and transportation facilities that are privately owned and operated aware of the need to increase pollinator habitat.

(j) The Department of Defense shall, consistent with law and the availability of appropriations, support habitat restoration projects for pollinators, and shall direct military service installations to use, when possible, pollinator-friendly native landscaping and minimize use of pesticides harmful to pollinators through integrated vegetation and pest management practices.

(k) The Army Corps of Engineers shall incorporate conservation practices for pollinator habitat improvement on the 12 million acres of lands and waters at resource development projects across the country, as appropriate.

(l) The Environmental Protection Agency shall assess the effect of pesticides, including neonicotinoids, on bee and other pollinator health and take action, as appropriate, to protect pollinators; engage State and tribal environmental, agricultural, and wildlife agencies in the development of State and tribal pollinator protection plans; encourage the incorporation of pollinator protection and habitat planting activities into green infrastructure and Superfund projects; and expedite review of registration applications for new products targeting pests harmful to pollinators.

(m) Executive departments and agencies shall, as appropriate, take immediate measures to support pollinators during the 2014 growing season and thereafter. These measures may include planting pollinator-friendly vegetation and increasing flower diversity in plantings, limiting mowing practices, and avoiding the use of pesticides in sensitive pollinator habitats through integrated vegetation and pest management practices.

Sec. 4. General Provisions.

(a) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(b) Nothing in this memorandum shall be construed to impair or otherwise affect:

(i) the authority granted by law to any agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(c) Nothing in this memorandum shall be construed to require the disclosure of confidential business information or trade secrets, classified information, law enforcement sensitive information, or other information that must be protected in the interest of national security or public safety.

(d) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(e) The Secretary of Agriculture is hereby authorized and directed to publish this memorandum in the Federal Register.

BARACK OBAMA

Appendix E: Advantages to Reduced Mowing

Below is a list of General and Environmental advantages to reduced or swath mowing. This list was researched by the Tennessee Department of Transportation's Highway Beautification Office and presented to the Maintenance Operations Division during consideration of swath mowing in 2018. Tennessee adopted swath mowing for interstate mileage in non-metropolitan counties between 2018 and 2020.

General Advantages of Swath Mowing**:**

G.1. Enhanced Safety: Swath mowing helps maintain clear sightlines along roadways, reducing the risk of accidents caused by obstructed views. Trimming overgrown vegetation eliminates potential hiding spots for wildlife, reducing the likelihood of collisions with animals.

G.2. Improved Roadside Visibility: Regular swath mowing enhances the visibility of road signs, exit ramps, and intersections, making it easier for drivers to navigate and reach their destinations safely.

G.3. Reduced Fire Hazards: By keeping roadside grass and vegetation well-maintained, the risk of wildfires spreading from the roadside to nearby areas is minimized.

G.4. Enhanced Drainage and Water Flow: Swath mowing prevents the buildup of debris and vegetation in ditches and drainage systems, ensuring proper water flow and reducing the risk of flooding during heavy rains.

G.5. Cost-Effectiveness: Swath mowing is a cost-effective vegetation management strategy compared to more intensive methods, such as herbicide application or manual clearing.

G.6. Preservation of Road Infrastructure: Maintaining clear roadsides through swath mowing helps prevent vegetation from encroaching on the road surface, reducing wear and tear on the pavement and extending its lifespan.

G.7. Aesthetics and Community Image: Swath mowing keeps roadways looking neat and well-maintained, contributing to a positive image of the community and state.

G. 8. Habitat Enhancement: Strategic mowing practices can create diverse habitats that support native plant and animal species, promoting biodiversity along Tennessee's roadways.

G. 9. Compliance with Environmental Regulations: Swath mowing can help the Tennessee Department of Transportation comply with environmental regulations regarding vegetation control and land management.

G. 10. Efficient and Timely Maintenance: Swath mowing can be performed quickly and efficiently, allowing the Department of Transportation to cover large areas in a relatively short time.

G.11. Collaborative Partnerships: Involving local communities or conservation organizations in swath mowing initiatives can foster positive partnerships and community engagement in roadside maintenance efforts.

Advantages of Swath Mowing with a focus on Environmental & Pollinator Benefits:

E.1. Pollinator Habitat Preservation: Swath mowing with consideration for timing and frequency allows for the preservation of essential habitats for pollinators like bees, butterflies, and other insects crucial for plant reproduction and ecosystem health.

E.2. Biodiversity Support: Implementing swath mowing practices that target specific areas or use rotational mowing helps maintain diverse plant communities, supporting a wider range of pollinator species and promoting overall biodiversity.

E.3. Native Plant Promotion: Swath mowing can be tailored to spare native wildflowers and grasses, which are often more beneficial to pollinators than non-native species, fostering a healthy ecosystem.

E.4. Reduced Chemical Use: By adopting swath mowing techniques to manage vegetation, the reliance on herbicides or chemical treatments can be minimized, decreasing potential harm to pollinators and the environment.

E.5. Soil Health and Erosion Prevention: Proper swath mowing reduces erosion by stabilizing the soil with maintained vegetation, preventing harmful runoff into nearby water sources, and preserving the quality of natural habitats.

E.6. Water Quality Protection: Swath mowing helps filter and regulate water flow, preventing pollutants from entering waterways, thus safeguarding the quality of aquatic environments, and benefiting pollinators that depend on these resources.

E.7. Carbon Sequestration: Maintaining roadside vegetation through swath mowing contributes to carbon sequestration, mitigating the impacts of climate change and supporting a healthier environment for all living organisms, including pollinators.

E.8. Wildlife Conservation: Swath mowing that avoids disrupting natural habitats can provide sanctuaries for various wildlife, including pollinators, promoting ecological balance, and protecting vulnerable species.

E.9. Public Awareness and Education: By incorporating educational materials and public outreach about the importance of pollinators and the environmental benefits of swath mowing, the Tennessee Department of Transportation can raise awareness and foster community support for these initiatives.

E.10. Sustainable Land Management: Adopting swath mowing as a part of sustainable land management practices demonstrates the department's commitment to the environment and sets an example for other organizations and agencies.

E.11. Partnership Opportunities: Collaborating with local conservation groups or pollinator initiatives can strengthen community ties, generate positive publicity, and enhance efforts to protect pollinators and the environment through swath mowing programs.

E.12. Long-Term Impact: Consistent and strategic swath mowing practices contribute to the long-term health and resilience of pollinator populations and the surrounding environment, ensuring their continued presence and benefits for future generations.

Appendix F: List of State DOT Pollinator Program Links

Arkansas	**https://www.arkansasmonarchs.org/**
Illinois	**http://www.idot.illinois.gov/home/monarch**
Iowa	**https://iowadot.gov/lrtf**
Kentucky	**https://www.kyagr.com/statevet/documents/OSV_Bee_KY-Pollinator-Pro-Plan.pdf**
Louisiana	**https://marcpastorek.com/2016/03/19/la-dotd-focusing-on-pollinator-species-in-landscape-designs/**
Minnesota	**http://www.dot.state.mn.us/pollinators/**
Mississippi	**http://www.dot.state.mn.us/environment/livingsnowfence/pdf/payment- structure.pdf**
Tennessee	**https://tnpollinators.org/**
Wisconsin	**https://wisconsindot.gov/Pages/doing-bus/real estate/roadsides/nativeplantsandprairies.aspx**

Appendix G: Additional Resources

ARKANSAS

1. Arkansas Pollinator Stewardship Program (uada.edu)
2. Arkansas-Monarch-and-Pollinator-Conservation-Plan-SinglePageLayout.pdf (cloudinary.com)

ILLINOIS

3. USDA Pollinator Gardens Design Guide.pdf (illinoiscleanenergy.org)
4. Mowing Guidelines for ROWs final_imp_mowingguidance_june2019_printversion.pdf (ilfb.org)
5. polinator_habitat_guide_-_2021.pdf (uic.edu)

KENTUCKY

6. Department of Agriculture Pollination Plan- pollination plan, 2019 revision - third draft.indd (kyagr.com)
7. 17 Kentucky Native Flowers That Support Pollinators (kynativeplants.com)

MISSISSIPPI

8. Gardening for Beneficial Bees in Mississippi (msstate.edu)

MISSOURI

9. The Missouri Pollinator Habitat Planning Scorecard for Solar Sites (fresh-energy.org)
10. MOBeeGuide.pdf (pollinator.org)

WISCONSIN

11. Planting and Mowing Practices FDM 27-25 Plant Materials (wisconsindot.gov)

Regional or Multi-State Programs

12. Pollinator Toolkit- MRPC
    MRPC-2023-Polinator-Week (mrpcmembers.com)
13. MRPC Proclamation- MRPC
    Microsoft Word - PW-Proclamation.docx (mrpcmembers.com)
14. Maintaining Roadsides Guide for DOT agencies- MRPC.
    Maintaining-Roadsides-for-Pollinators.pdf (mrpcmembers.com)
15. Conserving Pollinators
    Conserving Pollinators (mrpcmembers.com)
16. Pollinator Best Management practices

Pollinator Best Management Practices for Roadsides and Other Rights-of-way (mrpcmembers.com)

17. Pollinator and Roadsides Best Management Practices
    Pollinators-and-Roadsides-Best-Management-Practices.pdf (mrpcmembers.com)
18. 15-055_01_pollinators_BMPs_in_highway_ROW.pdf (xerces.org)
19. XERCES Pollinator Resource Center Link (Gives Regional specific resources. Gives a broader way to look at things) Pollinator Conservation Resource Center | Xerces Society
20. xerces.org/sites/default/files/2018-07/18-017_01_Overview of powerlines and pollinators.pdf
21. 15-054_01_SARE_Cover-Cropping-for-Pollinators+Beneficial-Insects_web.pdf (xerces.org)
22. Pollinator.org Resources Page (Webinars, Learning Center, Garden Cards, Pesticide Education) Homepage | Pollinator.org
23. Resources to Help Pollinators | Natural Resources Conservation Service (usda.gov)
24. Report Pollinator Habitats Along Great River Road
    Pollinator Habitats - MRPC Members
25. MRPC 2023 Pollinator Webinar
    Pollinators and the Great River Road - MRPC Members
26. Cons.-Pollinator-FAQ.pdf (ncelenviro.org)
27. Monarch Watch Monarch Waystation Program
28. A map of pesticide ordinances: Map of U.S. Pesticide Reform Policies - Google My Maps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