

Successes In Stewardship

FHWA Encourages States to Take Action in Achieving Pollinator Health

Pollinator species such as bees, birds, bats, and butterflies assist the reproduction of over 80 percent of the world's flowering plants. Honey bee pollination, in particular, adds more than \$15 billion in value to U.S. agricultural crops each year. In recent years, the recorded populations of these species have reached historic lows, posing threats to the Nation's environmental and economic health.

In response to the rapid decline of pollinator species, President Obama released [*Presidential Memorandum—Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators*](#) on June 20, 2014. The memorandum discusses the importance of pollinators and establishes the Pollinator Health Task Force (Task Force), which comprises representatives from executive departments and agencies including the U.S. Department of Transportation (U.S. DOT). The Task Force is responsible for increasing and improving pollinator habitat. The U.S. DOT will work with State Departments of Transportation (DOTs) to promote pollinator-friendly practices and corridors.

State DOTs Share New and Existing Best Practices for Pollinator Habitat Management

Following guidance from the Task Force, the Federal Highway Administration (FHWA) produced a case study series that highlights how several State DOTs are encouraging pollinator health using various vegetation management practices such as reducing herbicide use and decreasing mowing frequency. The purpose of the series is to provide agencies with tools that can help roadside managers encourage native vegetation—all plant species that occur naturally in a particular habitat—that benefits pollinators. The case studies describe practices in Indiana, Texas, and Washington.

Indiana Expands Vegetation Management Practices

The Indiana Department of Transportation (INDOT) has incorporated native plant and wildflower species into Indiana's roadside landscapes since the 1990s when the agency created the Hoosier Roadside Heritage Program. The program was initially established to reduce erosion, improve soil quality, and enhance plant pollination. After decades of successful pollinator practices, INDOT plans to expand the roadside management program to increase ecological and economic benefits.

Control of invasive species is an important component in encouraging native plant growth. To detect and manage new and existing invasive species, the Indiana State legislature established

the Indiana Invasive Species Council (IISC), which includes INDOT. The IISC used the Early Detection and Distribution Mapping System (EDDMapS), a web-based mapping system for documenting invasive species distribution in order to control and



INDOT has reduced roadside mowing since it converted anti-icing trucks to spray herbicides. The roadside in this image was mowed in early June 2015 and maintains pollinator habitat throughout the year. The pollinator habitat has not been mowed for three years. (Courtesy of INDOT)

reduce their impact on native ecosystems, to create [Report IN](#). Report IN allows State agencies such as INDOT and the Indiana Department of Natural Resources to better manage invasive species using information entered into an online database, in many cases from a smartphone application. Anyone interested in reporting invasive species can log into the Report IN website and enter the details of their observations (i.e., location information and plant descriptions) into a standardized online data form. The data are immediately loaded to the website, so INDOT land managers can facilitate early detection and rapid response programs, if necessary.

INDOT has also collaborated with Purdue University on alternative vegetation management practices. After testing various management strategies and equipment on different roadway types, Purdue researchers found that converting anti-icing trucks to spray herbicides was much more efficient than using mowers—one truck was capable of covering 10 times the area of a mower. INDOT has since reduced mowing and saved \$1 million since the study was completed in July 2014. The agency has also reduced the amount of herbicides it sprays along INDOT-managed roadways. INDOT carefully times these herbicide applications and uses spot-treatment of invasive and noxious weeds in order to avoid harming or eliminating pollinator habitat, such as roadside wildflowers.

Texas Builds on Long-Standing Tradition of Wildflower Preservation



TxDOT has maintained a Wildflower Program since the 1930s. In recent years, TxDOT has focused on educating farmers and ranchers about the benefits of preserving wildflowers, such as the Texas Bluebonnet, on their lands. (Courtesy of TxDOT)

The Texas Department of Transportation (TxDOT) has been promoting pollinator health for over 75 years through its well-known [Wildflower Program](#). The program has resulted in the growth of over 5,000 wildflower species along Texas highways, and has generated millions of dollars for the economy. The program has also reduced the cost of maintenance and labor for nearly 800,000 acres of roadside rights-of-way.

The TxDOT Maintenance Field Support Section oversees integrated vegetation management to ensure the prevalence of wildflowers. This includes spot treatments of non-native species, carefully timed mowing, soil erosion control with native plantings, pruning, and noxious weed control. Mowing occurs twice a year at specifically chosen times to align with the wildflower life cycle: post-spring-bloom season and post-fall-bloom season. Additionally, each of the TxDOT's 25 districts has a vegetation manager to oversee the application of these techniques.

Washington Uses Integrated Vegetation Management to Protect Pollinators and Native Plants

The Washington State Department of Transportation (WSDOT) has used an integrated vegetation management (IVM) program for roadways since the early 1990s. IVM techniques include selective herbicide use, soil improvement, native plantings, and mowing along all 7,000 miles of State and Federal highways in Washington. These practices are pollinator-friendly, since they promote native plant species that attract pollinators and reduce herbicide use. WSDOT reports that herbicide use decreased by 70 percent between 2003 and 2007.

WSDOT approaches IVM on a site-specific basis and gives added attention to special status species, those listed as rare, threatened, or endangered by Federal and/or State governments, and require special protection. For instance, a proposed roadway realignment of U.S. Route 12 near Walla Walla, Washington will impact ground-nesting alkali bees. These bees are important to the agricultural community since they pollinate nearby alfalfa fields. To mitigate impacts to the bees, WSDOT is providing funding to farmers to move the bees to new locations.

Additionally, WSDOT is collaborating with the U.S. Forest Service on pollinator issues and is creating a website to share information with the public and other interested agencies. WSDOT is also working with the American Association of State Highway and Transportation Officials to create a webinar on pollinator issues.

Different State DOT Practices Yield New Innovations and Positive Results

While each State DOT has a slightly different approach to promoting pollinator health, they have all seen similar results. Whether using smartphones to collect data and map invasive species, decreasing mowing frequency to preserve wildflower life cycles, or collaborating with the public and other agencies to raise awareness, INDOT, TxDOT, and WSDOT have established innovative practices for protecting pollinator species that other agencies can adopt and tailor to meet their needs.

FHWA Plans Future Pollinator Health Resources for State DOTs

In addition to developing the State DOT case study series on pollinator health, FHWA is working on a number of other pollinator health projects either as a lead agency or a collaborator. In addition, the Turner-Fairbank Highway Research Center hosts a number of beehives on campus in McLean, Virginia. The U.S. DOT recently partnered with the General Services Administration and their building contractor at the U.S. DOT headquarters offices in Washington, D.C. to open a pollinator garden. These projects are demonstrations of how small changes can eventually lead to large impacts for pollinator health.

Looking for Funding?

Agencies can use Federal funds for pollinator-friendly vegetation management practices. This eligibility, authorized under SAFETEA-LU and codified at 23 U.S.C. 329, was unchanged by the MAP-21 reauthorization. For more information, please visit: <http://www.fhwa.dot.gov/hep/guidance/noxweeds.cfm>.

FHWA Released Vegetation Management Assistance in E-Book Format

In 2014, FHWA released *Vegetation Management: An Ecoregional Approach* to provide State DOTs and other land managers with resources and strategies to help them manage roadsides with fewer resources and greater environmental benefits. To reach a broader audience, FHWA recently completed an [e-book version](#) that is now available on the [FHWA Environmental Review Toolkit](#).

Xerces Society and FHWA Partner to Develop Pollinator Best Practices Literature Review

The Xerces Society for Invertebrate Conservation and FHWA recently developed a [literature review on best management practices \(BMPs\) for improving pollinator health](#). The literature review is intended to establish a foundation for the development of BMPs for pollinator habitat protection and enhancement in highway rights-of-way. FHWA is currently developing BMPs for pollinator programs; these BMPs will be described in two subsequent reports.

FHWA Joins Efforts to Increase Native Seed Availability

Many State DOTs have informed FHWA that accessing and paying for native seeds is a challenge. FHWA worked with the U.S. Bureau of Land Management and other Federal agencies to develop a national seed strategy that aims to identify native seed needs and ensure the availability of seed reserves.

FHWA Launches New Pollinators Web Page

FHWA created a [pollinators page](#) on the [Environmental Review Toolkit website](#) to provide roadside managers with resources for pollinator-friendly practices. The pollinators page features publications developed by FHWA and links to resources from other agencies, as well as information from pollinator-focused non-profits.

Contact Information

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Look What's New!

- Detailed information about the [2015 FHWA Environmental Excellence Awards](#) recipients is now available.
- The U.S. Environmental Protection Agency's (EPA) Greening America's Capitals program released four reports about the cities selected for its [2013 program](#).
- [FHWA's Fostering Livable Communities Newsletter – July 2015](#) edition is now available and features an article about the winners of the New York State DOT 2015 GreenLites program, which is committed to preserving environmental sustainability.
- The Climate Data Initiative and the Climate Resilience Toolkit now provide more than 90 datasets from across six federal agencies related to [climate change and transportation](#).

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