



Energy and Transportation Agencies Partner to Restore Monarch Habitats

In the last 20 years, the population of Monarch Butterflies (*Danaus plexippus*), one of the most recognizable and endeared insects in the U.S., has progressively declined.



U.S. Department of Transportation
Federal Highway Administration

What is the Monarch CCAA?

Since 2017, the University of Chicago Illinois (UIC) partnered with more than 45 energy and transportation organizations to develop the first nationwide Candidate Conservation Agreement with Assurances for Energy and Transportation Lands (Monarch CCAA). The Monarch CCAA is a historic and transformational voluntary agreement between the U.S. Fish and Wildlife Service (USFWS) and non-federal transportation and utility organizations to protect the Monarch Butterfly from extinction. The Monarch Butterfly is currently a candidate under the Endangered Species Act, with the USFWS’ listing decision scheduled for December 15, 2020.



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applicant, Minnesota Department of Transportation.. “...many States experienced regulatory uncertainty and unexpected project costs as a result of the recent northern long-eared bat listing – the Monarch listing could have much further reaching impacts...” he continued.

Programmatic agreements typically result in cost-savings for project delivery. Mowing reduction will likely result in substantial maintenance cost-savings.

Why it’s important?

Research indicates an effective way to increase the population of the Monarch Butterfly is to focus on restoration of their breeding habitat in the U.S.

Three known Monarch populations occur within North America, the eastern population, the western population and a non-migratory southern Florida population that receives an annual influx from the eastern population. **The eastern population is the largest and has declined by approximately 77% since 1995. The western population is much smaller and has declined by approximately 97% since 1997.**

Decline of the western population is important because the USFWS cannot list an invertebrate population as a distinct population segment. They must decide to list or not list the species as a whole.

Suitable habitat for Monarchs consists of lands that provide milkweed and/or flowering nectar plants that may support Monarch breeding or foraging needs from early spring to late fall. To support a strong growth rate, the species requires large population sizes and sufficient quantity and quality of habitat to accommodate all life stages.

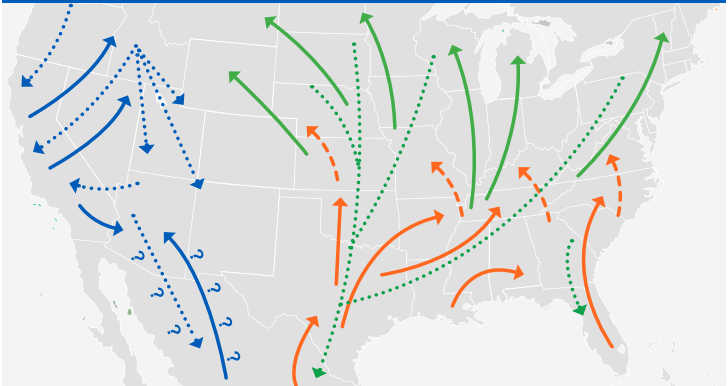
What are the benefits?

A CCAA provides multiple benefits to participants such as assurances that minimize project and other work delays. If the species is listed, incidental take coverage will be provided to participants allowing their daily operations, maintenance, and modernization construction activities such as culvert, bridge and lane widening to continue seamlessly under the agreed upon terms of the Monarch CCAA. Nineteen Departments of Transportation (DOT) including applicants from California, Georgia, Minnesota, Ohio, Oklahoma, Texas, Vermont, and Virginia, championed the Monarch CCAA development.

“...If the species is listed, maintenance has the biggest opportunity for take and the CCAA provided assurances.” – CCAA applicant, California Department of Transportation

“...Impacts to transportation agencies within the range of the Monarch Butterfly if the species is listed could be significant...” says CCAA

Monarch Population Migration Routes



Western Monarch		Eastern Monarch	
Spring/Summer Range Expansion	→	1 st Migration	→
Fall Range Contraction	→	2 nd Migration	→
		3 rd Migration	→
		4 th Migration	→

Eastern Monarchs make four migrations and produce three to five generations of offspring annually. Populations thrive or diminish according to conservation measures, available habitat, and weather conditions. Monarchs recognize breeding grounds and produce offspring during the summer months – eventually reaching most areas containing milkweeds in the U.S. by mid-June.

The number of Monarch generations produced in the summer is a function of temperature and the timespan before the 4th migration begins. A warm year may add 4th and 5th generations to the species’ population. According to a CCAA applicant with the Oklahoma Department of Transportation, “...we do have offspring from the 4th generation in Oklahoma and Texas...”

The longest of the four seasonal migrations occurs from August to December where the Monarchs return to overwintering sites. Western Monarchs’ movement is termed range expansion in spring/summer and range contraction in the fall.

What are the major threats?


The USFWS Species Status Assessment for the Monarch identified mowing and herbicide as one of the major threats to the species. The Monarch CCAA conditions require selecting voluntary conservation measures to address key habitat threats, and tracking and biological effectiveness monitoring to fulfill the agreement terms.

DOTs can select conservation measures that are consistent with their vegetation management practices such as brush removal, conservation-timed mowing, seeding or planting of native wildflowers, and pollinator-focused integrated vegetation management (IVM). Conservation measures are implemented on eight percent of enrolled highways and five percent of enrolled roadways.


“...It is vital for Maintenance to be on board. Gradual changes in vegetation management practices like reduced mowing schedules provides a high and immediate benefit for the Monarch Butterfly and its habitat,” stated CCAA applicant with the Virginia Department of Transportation. “...having flexibility in conservation measures has been helpful. Under the CCAA, being able to receive credit for conservation efforts we were already implementing was an effective messaging point to Managers and across Divisions,” she continued.

“...If listed, entering into this agreement will streamline and make permitting more predictable!” stated CCAA applicant with the Vermont Agency of Transportation.

Steps to Increase the Monarch Population




Mowing



Treatment: Pollinator/conservation-time mowing; pollinator-focused integrated vegetation management; rotational mowing or haying once every 3 years or less frequently.



Herbicide



Treatment: Spot spray; selectively apply herbicides only to target plants.




Lack of Conservation




Treatment: Wildflower seeding and planting; remove brush and invasive/noxious weeds.




A Better Habitat
Milkweed and nectar resources





More Monarchs and other pollinators



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We need your help.

This critical agreement embodies an “all-hands on deck” approach to restoring habitat for Monarch Butterfly. Another goal of the Monarch CCAA is to avoid listing the species. Agencies can only enroll through the effective listing date. The effective listing date is anticipated around December 2021. For more information about joining the Monarch CCAA, please visit <http://rightofway.erc.uic.edu/about/contact/>.



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Publication # FHWA-XX-XX-XXXX