



Photo: Ohio Dept. of Transportation



Photo: USFWS



Photo: City of Marion, IA

# LANDOWNER GUIDE

## Nationwide Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands

**June 2022**

Cooperatively Prepared by:

*U.S. Fish and Wildlife Service  
University of Illinois – Chicago, Energy Resources Center  
Rights of Way as Habitat Working Group  
Cardno (Stantec)  
American Farm Bureau Federation*

## Table of Contents

<b>1.</b>	<b>What is the Monarch CCAA?</b> .....	<b>1-2</b>
1.1	Why is monarch conservation important? .....	1-2
1.2	What do monarchs need? .....	1-2
1.3	How does the CCAA work?.....	1-3
1.4	What is the Landowner Buffer Provision? .....	1-3
<b>2.</b>	<b>Speaking the language of the Monarch CCAA (Terminology)</b> .....	<b>2-4</b>
<b>3.</b>	<b>Landowners and the Monarch CCAA</b> .....	<b>3-6</b>
3.1	What does the CCAA mean for landowners with property along rights-of-way? .....	3-6
	CCAA Measures on Fee-Title Lands vs. Easements .....	3-6
	Working Together on Conservation.....	3-6
3.2	As a landowner, do I need to do anything with the CCAA? .....	3-7
	Take no action .....	3-7
	Self-certify your monarch habitat work under the optional buffer provision .....	3-7
<b>4.</b>	<b>Landowner Buffer Provision Process</b> .....	<b>4-7</b>
<b>5.</b>	<b>Monarch Conservation Tips for Landowners</b> .....	<b>5-11</b>
5.1	Common landowners along energy and transportation lands.....	5-11
5.2	Recommended conservation actions for landowners .....	5-11
5.3	Online resources for landowners.....	5-11
	For Agricultural Producers:.....	5-11
	For Non-Agricultural Landowners:.....	5-12
	Community Science Participation:.....	5-12
	Conservation Partnerships: .....	5-13
5.4	CCAA-focused conservation measures .....	5-13
<b>6.</b>	<b>Who to Contact for More Information</b> .....	<b>6-1</b>
	<b>Appendix A. CCAA Conservation Measures for Monarch Butterflies</b> .....	<b>i</b>

# 1. What is the Monarch CCAA?

---

The Nationwide Candidate Conservation Agreement with Assurances for Monarch Butterflies on Energy and Transportation Lands (CCAA) was developed by energy companies and transportation agencies with the U.S. Fish and Wildlife Service and the Energy Resources Center at the University of Illinois Chicago. The CCAA provides regulatory certainty for energy companies' and transportation agencies' ongoing activities and supports monarch conservation. Long-term success of this agreement is best accomplished through cooperation between landowners and easement holders enrolled in the CCAA.

The CCAA is the first, nationwide conservation agreement of its kind. Energy companies and transportation agencies participating in this agreement make an important contribution to conservation by:

- Creating and sustaining much-needed habitat for the iconic monarch butterfly,
- Supporting a national framework for large-scale conservation across two major industries,
- Being an example for other conservation agreements to address other species at-risk.

## 1.1 Why is monarch conservation important?

Monarch butterfly (*Danaus plexippus*) populations are in decline across their range in North America. The butterfly, associated with milkweeds and meadows across the country, has eastern and western populations generally separated by the Rocky Mountains (in addition to a small, non-migratory population in Florida). Both have experienced declines since modern surveying and recordkeeping began in the mid-1990s. In its [2020 Species Status Assessment Report](#), the U.S. Fish and Wildlife Service (Service) calculated that, given recent trends in species decline and habitat degradation and loss, the probability of losing the eastern population over the next 60 years is 61%, with near 99% probability for the western population (USFWS 2020). Due to recent declines and a petition to list the monarch, the Service assessed the species for potential listing as Federally Threatened or Endangered. In December of 2020, the Service determined that listing the monarch under the Endangered Species Act is warranted but that the species would not be proposed for listing at that time due to higher priority listing actions that the Service is working on. The Service will reevaluate the monarch's status annually until a final listing decision is proposed in 2024.

## 1.2 What do monarchs need?

Monarchs rely solely on a group of plants commonly referred to as milkweeds, primarily those species in the genus *Asclepias*. They lay eggs on milkweeds and then the larvae feed exclusively on these plants until they pupate and emerge as adult butterflies. As adults, monarchs will feed on a variety of flowering plant species and require nectar sources throughout the growing season. Therefore, a diverse array of wildflowers is necessary to support a healthy monarch population, including species that flower during the early, mid, and late summer, and fall.

General lack of habitat and habitat degradation are important factors in monarch decline. Habitat connectivity plays a role in monarch health. Habitat connectivity may be improved by simply increasing the acreage of land supporting milkweed and other native wildflowers, and by restoring corridors of naturally vegetated green spaces that allow for species migration and movement. These corridors provide the opportunity for flight when one area becomes less suitable for monarch survival. During spring and fall migration, monarchs may have to fly significant distances over inhospitable terrain, including urban and industrial areas and those dominated by row crop agriculture. Increasing availability of foraging and stopover habitat will better support the species and their seasonal migration.

### **1.3 How does the CCAA work?**

The CCAA is a voluntary agreement that promotes conservation to benefit monarch butterflies. Energy companies and transportation agencies may enroll as Partners and by committing to take beneficial actions for monarch butterflies, they receive clarity and certainty on future regulatory requirements related to the monarch. The Enhancement of Survival Permit, issued by U.S. Fish and Wildlife Service along with the CCAA, allows enrolled energy companies and transportation agencies to perform routine operations and maintenance work on lands they own and manage without additional Endangered Species Act regulatory requirements associated with monarch butterflies.

The CCAA program is administered by the Energy Resources Center at the University of Illinois Chicago. In order to enroll, Partners must submit an application that details their conservation actions and commits them to meeting minimum conservation targets for the lands they own and manage, monitoring the habitat conditions on a regular basis, and then tracking and reporting their benefits to monarch butterflies on areas where practices are “adopted.”

Recognizing that their rights-of-way and other managed lands could provide suitable habitat, dozens of organizations have enrolled in the CCAA to date. Participation in the CCAA demonstrates that energy companies and transportation agencies are having a net benefit to monarch butterflies across the lands they own and manage. Collectively, these actions make a meaningful contribution to providing monarch butterfly habitat throughout the continental United States.

### **1.4 What is the Landowner Buffer Provision?**

The Enhancement of Survival Permit associated with the CCAA provides incidental take coverage for the energy companies and transportation agencies that have committed to undertaking conservation for monarch butterflies. Incidental take coverage can help limit participant liability for certain practices that may impact the monarch butterfly and provide participants with regulatory assurances that no additional practices will be required of them in the event that the monarch butterfly becomes listed as a threatened or endangered species. As a way to encourage landowner cooperation with enrolled Partners, that same permit includes a “landowner buffer provision” that extends the same incidental take coverage to landowners with lands located within 100-feet of “adopted acres.” This provision offers incidental take coverage to landowners provided that:

1. Monarch conservation measures identified in the CCAA (and this guide) are implemented and can be documented by landowners (or their designees) within the 100-foot buffer zone,
2. The incidental take by the landowners (or their designees) results from the implementation of these conservation measures or from covered activities (including the landowner's general operations, maintenance and modernization, or vegetation management activities), and
3. The activities will not result in take of listed or proposed species other than monarch butterfly, will not destroy or adversely modify designated or proposed critical habitat of any listed species, and will not affect historic properties. If unsure whether an activity may cause take, contact your local USFWS Field Office with questions.

More information about the Landowner Buffer Provision is provided in Sections 3 and 5 below.

## 2. Speaking the language of the Monarch CCAA (Terminology)

---

The CCAA uses unique words to describe aspects of the agreement and participation. Here is a brief list of terms commonly used in the CCAA. These terms have been condensed from their full description included in the [original CCAA](#) (pdf).

**Adopted Acres:** Area within a managed rights-of-way on which conservation measures are applied to support monarch butterfly habitat. Adopted acres are a subset of a Partner's enrolled lands.

**CCAA** (Candidate Conservation Agreement with Assurances): Voluntary conservation agreements between the Service and one or more non-Federal property owners or managers. Property owners or managers commit to implement mutually agreed-upon measures to support a species in conservation need. In return, the property owners receive assurances from the Service that additional requirements will not be imposed upon them should the species become listed in the future. For this particular Agreement, non-Federal property owners and managers are referred to as "Partners."

**Certificate of Inclusion:** A certificate documenting the Partner's voluntary agreement to enroll specified property in the CCAA. Certificates of Inclusion document the Partner commitment to the CCAA terms and conveys the permit applicability to enrolled land.

**Conservation Measures:** Measures that aim to conserve and enhance the survival of the monarch butterfly and its habitat by addressing identified key threats identified by the U.S. Fish and Wildlife Service. All conservation measures are conducted in accordance with existing permits, easements, and agreements that allow the Partners to access and manage their enrolled lands. Conservation measures do not include actions that pose significant environmental, socioeconomic, historic, or cultural impacts. Within the CCAA, conservation measures include actions like:

- Mowing at times of year when monarchs are not present
- Removing brush and woody plants
- Herbicide treatments that target a specific plant or group of plants and avoids contacting off-target vegetation
- Prescribed grazing or burning
- Seeding or planting flowering nectar plants
- Letting habitat grow as "idle lands"

**Covered Activities:** Land management, maintenance, and modernization activities on enrolled lands that are reasonably certain to cause take of monarchs. This may include, but is not limited to, broadcast application of herbicides or mowing in areas of suitable monarch habitat, or other vegetation management that may be incompatible with the maintenance of monarch habitat. New construction is not a covered activity. If the monarch is listed as endangered or threatened under the Endangered Species Act, incidental take of monarchs that occurs as a result of covered activities carried out by a Partner who is adhering to the terms of the Certificate of Inclusion or a landowner who is adhering to the terms of the Landowner Buffer Provision, will be authorized under the EOS Permit. See Section 5 in the CCAA for additional detail and examples of covered activities.

**Enhancement of Survival Permit (EOS Permit):** If the monarch is listed, the [EOS Permit](#) will provide incidental take authority for covered activities of Partners enrolled under the Agreement through a Certificate of Inclusion, or stated permit provisions. This permit is issued pursuant to Section 10(a)(1)(A) of the Endangered Species Act. The Permit becomes effective upon any final rule listing the monarch, if or when applicable. The Landowner Buffer Provision is described within the EOS Permit.

**Enrolled Lands:** The lands (either owned, leased, permitted, or managed easements) included by an energy company or transportation agency in their Certificate of Inclusion. Eligible lands for enrollment include any properties, leases, and easements where the company or agency may conduct work. Adopted acres are a subset of a Partner's enrolled lands.

**Harass:** To intentionally or negligently, through act or omission, create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, and sheltering.

**Harm:** To perform an act that kills or injures wildlife; may include significant habitat modification or degradation when it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

**Historic Property:** Any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource. For the purposes of the buffer provision, historic property also includes sites considered as traditional cultural properties.

**Incidental Take:** The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, any threatened or endangered species, or to attempt to do the same. 16 U.S.C. § 1532(19). An "incidental take" refers to a taking that results from, but is not the purpose of, carrying out an otherwise lawful activity. 50 C.F.R. § 402.02. To determine whether or not federally threatened or endangered species may be present, [an 'official species list' may be obtained from the USFWS](#).

**Incompatible Vegetation:** The Utility Arborist Association's Integrated Vegetation Management Best Management Practices Manual defines incompatible vegetation as any plant that is inconsistent with intended use of a site. Within rights-of-way, this typically includes plants that have undesirable effects on safety, security, access, fire risk, utility service reliability, wildlife habitat, pollinator forage, emergency restoration, visibility, line-of-sight requirements, regulatory compliance, the environment, or other concerns.

**Landowner Buffer Provision:** A condition under the EOS Permit that extends incidental take coverage for monarch butterflies by landowners that manage land on, or within 100-feet of, adopted acres committed under the CCAA. In order to qualify, landowners must be supporting monarch habitat. Other conditions apply. The full description of the provision can be found in Section VI of the EOS Permit titled Buffer Zone Activities.

**Official Species List:** An official letter from the local USFWS office containing information to assist you in evaluating the potential presence of federally listed and proposed species in a defined area. It includes a list of species and critical habitat that should be considered when evaluating the potential impacts of a project.

**Partners:** Companies, agencies, and other organizations working in the energy or transportation sectors that are landowners or manage vegetation through an easement, permit, or other access and management type agreement, who voluntarily agree to the terms and conditions described in the CCAA and their Certificate of Inclusion in it.

**Program Administrator:** The organization that holds the EOS Permit issued by, and subject to, USFWS oversight. The University of Illinois Chicago operates as the Program Administrator for the CCAA.

**Suitable Habitat (for monarch butterflies):** Lands that provide either milkweed and/or potentially flowering nectar plants which support monarch breeding or foraging needs at times of the year when monarchs are present.

## 3. Landowners and the Monarch CCAA

---

### 3.1 What does the CCAA mean for landowners with property along rights-of-way?

Rights-of-way managers (referred to as “Partners” to the CCAA) may enroll fee-title owned lands (company/agency-owned lands) and lands on which the Partner maintains leases, easements or other agreements that allow conservation measures and/or covered activities described in the CCAA. The land ownership and management rights attributed to the Partner dictates what they can or cannot do in terms of monarch conservation.

#### **CCAA Measures on Fee-Title Lands vs. Easements**

Partners enrolling fee-title-owned lands retain full control to address identified threats to monarch butterflies through conservation measures. In contrast, on enrolled easement or leased lands, the Partner is limited only to the property rights allowed through their lease or easement agreements. In these instances, landowners retain control of how they manage lands in light of that easement. Each relationship on easements between Partners and landowners is unique, dictated by the land-rights agreement in place for that parcel. The CCAA, or USFWS permit accompanying it, does not change or alter existing land-rights agreements, easements, leases, other agreements or the property rights of the Partner or landowner.

Partners’ participation in the CCAA does not change or impact the land use of existing agreements, nor does it give Partners permission beyond existing agreements without the consent of the landowner. For example, the CCAA does not give Partners permission to convert existing pasture, a wildlife food plot, cropland, golf course, or maintained yard into monarch habitat.

#### **Working Together on Conservation**

Partners may elect to alter vegetation management to minimize threats to monarch butterflies on a portion of enrolled lands (these areas are referred to as “adopted acres”). Examples of altered vegetation management include mowing less often or at a taller height, spot spraying incompatible vegetation or invasive species instead of widespread herbicide use, and mechanically removing incompatible vegetation. A list of monarch conservation measures aligned with the CCAA is summarized in Appendix A to this guide.

Partners enrolling easements within the CCAA agree to obtain consent from landowners before taking any actions outside the scope of existing easement agreements. When implementing conservation measures on easements or leased lands, the Partner is limited to only those activities allowed under the easement/lease or must obtain additional consent from the underlying landowner as outlined below.

- Where *conservation measures coincide with activities authorized* under existing leases, easements or other land-rights agreements, the Partner will follow its organization’s applicable procedures regarding landowner notification or consent and conduct activities only within the allowable scope.
- Where *conservation measures do not coincide with easement or lease authority*, the Partner will either a) not conduct the activity beyond the allowable scope, or b) obtain the required consent or authorization from the underlying landowner prior to conducting the activity.
- Partners will obtain consent or authorization from the underlying landowner before intentionally seeding or planting native plants on active cropland specifically for the purpose of creating monarch habitat.
- Monitoring plants and habitat in areas where vegetation management is done in a manner to support monarch butterflies is part of the CCAA. This monitoring is conducted once a year, or



less frequently, in randomly selected locations across the adopted acres. Partners will abide by access language in existing agreements with landowners when conducting monitoring activities.

The enrollment of lands in the CCAA or the buffer provision (described below and in Section 4) does not impact any existing or future agreements with the U.S Department of Agriculture or the U.S. Fish and Wildlife Service, including those for the monarch butterfly.

### **3.2 As a landowner, do I need to do anything with the CCAA?**

If you are a landowner with an energy or transportation rights-of-way located on or adjacent to your land, we encourage you to engage in your own monarch conservation efforts by establishing and/or protecting milkweed and flowering plants. Section 5 provides additional guidance on how you can help.

Under the CCAA, landowners have the ability to “self-certify” their own conservation actions and incidental take coverage under the CCAA permit’s Landowner Buffer Provision (see Section 4 for the specific procedures). Under this provision, landowners located on or adjacent to an energy or transportation rights-of-way enrolled in the CCAA can either:

#### **Take no action**

Landowners are not required to take action or participate in the CCAA. Even if an energy company or transportation agency enrolls easement or leased lands, the authority in current land-use agreements remains unchanged.

If a landowner opts to take no action, the Partner organization (i.e., energy company or transportation agency) may continue to enroll lands and receive assurances (i.e., regulatory protection). In this situation, the landowner does not receive regulatory protection since they did not seek incidental take coverage through their own self-certification process. **Landowners will be responsible for ensuring that incidental take of monarchs does not occur if this species is listed.**

#### **Self-certify your monarch habitat work under the optional buffer provision**

Landowners may self-certify their eligibility for the optional Landowner Buffer Provision in order to receive incidental take coverage for monarch butterflies within 100 feet of the Partner’s adopted acres. The provision is not applicable to buffer lands in row crop agriculture because row crop agriculture is generally considered as not providing habitat (milkweeds and flowering plants) for the monarch butterfly; however, it may be applicable to pastureland or other non-production areas because these lands may contain natural vegetation that can include milkweeds or flowering plants that provide nectar for monarchs.

Landowners enrolling in the buffer provision must complete a self-certification form online (download, print, sign and retain for your records.). See Section 4 for additional information.

---

## **4. Landowner Buffer Provision Process**

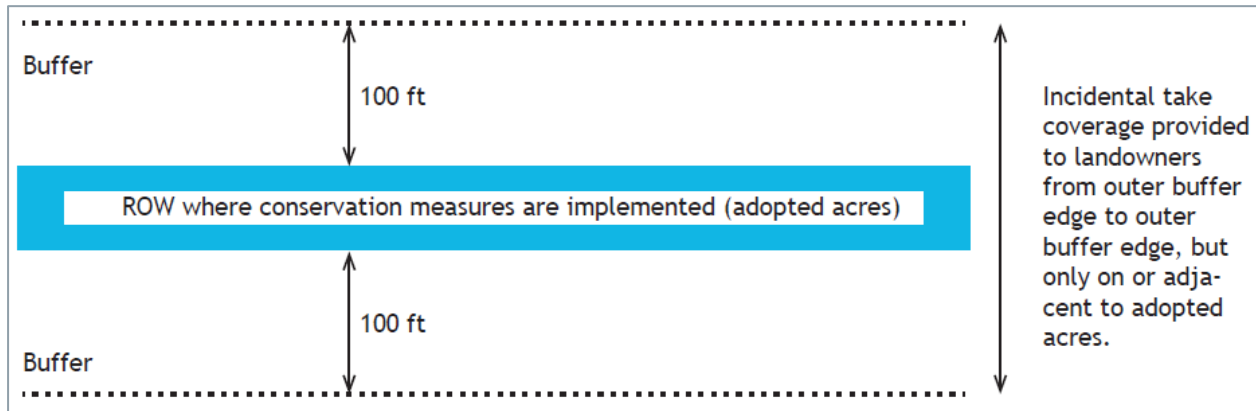
---

We recommend landowners interested in monarch conservation and who would like permission for incidental take of monarchs on eligible lands under the buffer provision document their conservation efforts following an established self-certification process (Figure 2):

1. Landowner confirms they have a rights-of-way (ROW) on, or within 100 feet of, their land by reviewing their own property and easement agreements (Figure 1).



Figure 1. Illustration of the buffer zone



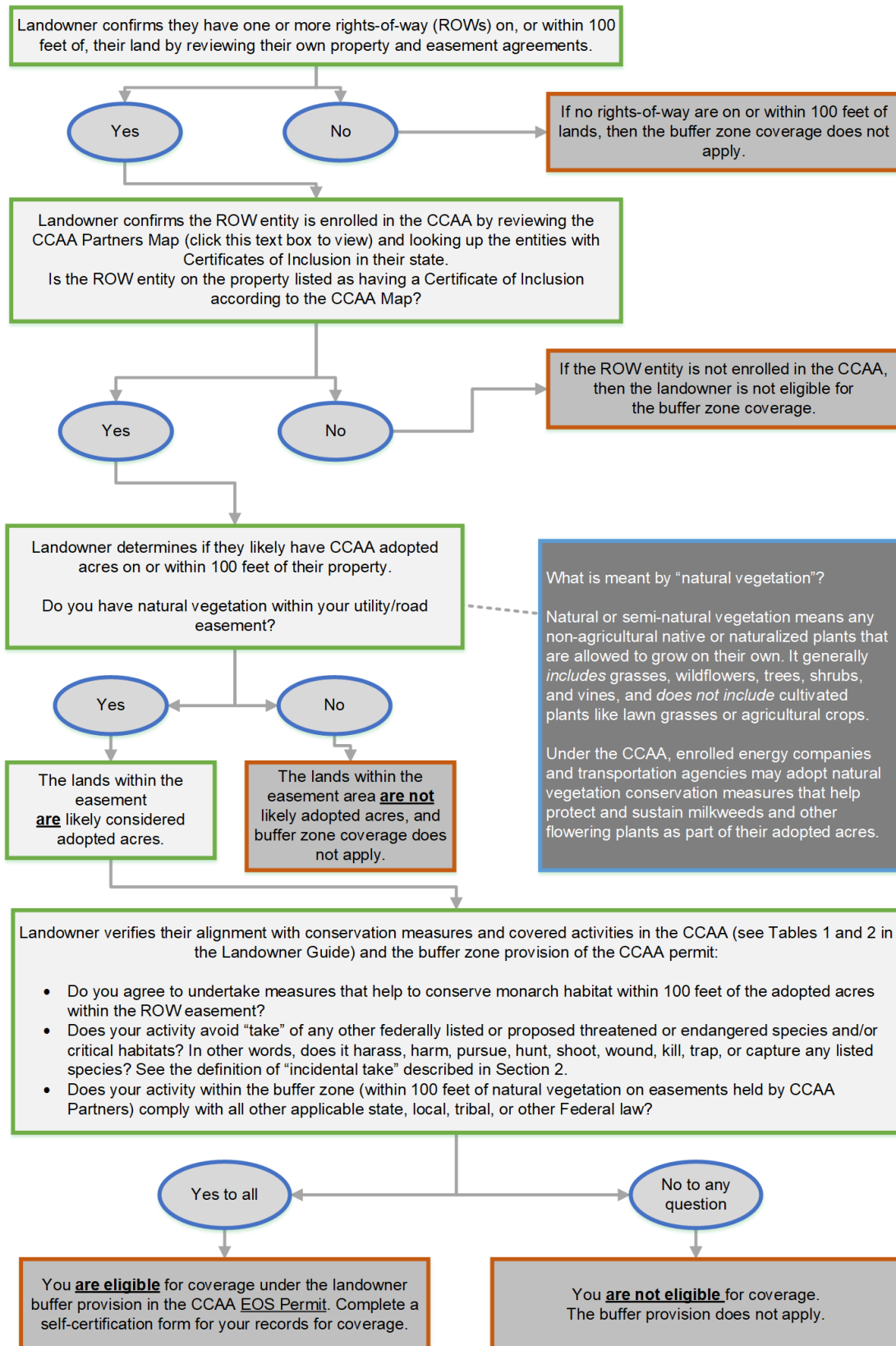
2. Landowner confirms the ROW entity is enrolled in CCAA by reviewing enrolled Partners website.
  - a. [See the CCAA Partners Map](#). Landowners can click on the map to see a list of CCAA Partners in their state.
  - b. If the ROW entity (utility or highway department) on, or within 100 feet of, the property is on the list of Certificates of Inclusion in the landowner's state, proceed to next question. If not, the ROW entity is not enrolled in the CCAA and the landowner is not eligible for the buffer zone coverage.
3. Landowner determines if they likely have CCAA adopted acres on or within 100 feet of their property. How does a landowner know if they have an adopted acre on or within 100 feet of their property? Confirm the following:
  - a. Do you have natural vegetation within your utility/road easement?
    - i. Natural or semi-natural vegetation means any-non-agricultural, native, or naturalized plants that are allowed to grow on their own. It generally *includes* grasses, wildflowers, trees, shrubs, and vines, and *does not include* cultivated plants like lawn grasses or agricultural crops.  
  
Under the CCAA, enrolled energy companies and transportation agencies may adopt conservation measures in natural vegetation that help protect and sustain milkweeds and other flowering plants as part of their "adopted acres".
  - b. If yes, the lands within the easement are likely considered adopted acres.
  - c. If no, the lands within the easement area are not likely adopted acres.
4. Landowner verifies their alignment with conservation measures (see Appendix A) and covered activities (Table 1) in the CCAA and the buffer zone provision of the CCAA permit.
  - a. Do you agree to undertake measures that conserve monarch butterfly habitat within 100 feet of the adopted acres within the ROW easement?
  - b. Does your activity avoid "take" of or otherwise impact any other federally listed or proposed threatened or endangered species and/or critical habitats? In other words, does it not do any of the following: harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect? See the definition of "incidental take" described in Section 2.

- c. Does your activity within the buffer zone (within 100 feet of natural vegetation on easements held by CCAA Partners) comply with all other applicable state, local, tribal, or other Federal law?
5. If yes to 4a, 4b, and 4c, you are eligible for coverage under covered by the landowner buffer provision in the CCAA EOS Permit. Complete a self-certification form for your records for coverage.
  6. If no to 4a, 4b, or 4c, then the buffer provision does not apply.

**Table 1. Examples of activities that are covered and not covered under the buffer provision**

Covered	Not Covered
<ul style="list-style-type: none"> <li>• Mowing</li> <li>• Haying</li> <li>• Herbicide use</li> <li>• Controlled grazing</li> <li>• Grading and excavation</li> <li>• Driveway or roadside maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Insecticide use</li> <li>• Intentional harm, harassment, or destruction of monarchs</li> <li>• Activities outside of the 100-foot buffer area covered by the permit.</li> <li>• New construction</li> </ul>

**Figure 2. Graphic depicting the landowner buffer provision process as a flow chart.**



## 5. Monarch Conservation Tips for Landowners

---

### 5.1 Common landowners along energy and transportation lands

All non-federal landowners with lands adjacent to energy and transportation lands may participate in the Landowner Buffer Provision. Examples of landowners who may choose to conserve monarch butterfly habitat in the buffer zone include, but are not limited to, agricultural producers, homeowners, businesses, non-federal public landowners (e.g., parks), or golf courses. As no single entity is responsible for providing habitat needed to sustain monarch butterfly populations; a concerted and cooperative effort of all organizations, agencies and individuals to promote and conserve habitat is required to prevent further declines of monarch butterflies.

Participation in the Landowner Buffer Zone Provision can leverage the positive effects from Partners' efforts through the CCAA into a larger conservation benefit for monarch butterflies. By creating and sustaining additional habitat, each participant contributes to landscape-level conservation through the CCAA and many other partnerships across the U.S.

### 5.2 Recommended conservation actions for landowners

Landowners can help with conservation for monarchs in numerous ways, including:

1. Seeding and planting to restore or create habitat.
2. Controlled grazing to maintain suitable habitat.
3. Brush removal to restore grassland habitat.
4. Prescribed burning to maintain suitable habitat.
5. Maintaining undisturbed suitable habitat idle lands or set- asides.
6. Conservation-timed mowing to avoid harm to monarchs at times of year they are present.
7. Targeted herbicide treatments to maintain habitat and minimize pesticide exposure.

A full description of conservation measures is provided in Appendix A.

### 5.3 Online resources for landowners

The following websites and resources provide general and specific conservation actions for monarchs and their habitat, along with other entities that can help you get involved in monarch conservation:

#### **For Agricultural Producers:**

<b>Program</b>	<b>Description</b>
<a href="#"><u>Partners for Fish and Wildlife</u></a>	The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program provides technical and financial assistance to landowners interested in restoring and enhancing wildlife habitat on their land.
<a href="#"><u>Working Lands for Wildlife</u></a>	U.S. Department of Agriculture Natural Resources Conservation Service program working with America's farmers, ranchers, and forest managers on voluntary conservation efforts to combat the decline of monarchs on private lands by establishing new habitat and managing existing habitat for monarchs and pollinators. <ul style="list-style-type: none"><li>• <a href="#"><u>Monarch Butterfly Conservation on Working Lands</u></a></li></ul>

**Program      Description**

[Farmers for Monarchs](#) Farmers for Monarchs - a Keystone Collaborative is an initiative of the [Keystone Policy Center](#). The collaborative consists of national organizations representing farmers, ranchers, landowners, businesses, academic institutions, federal and state entities, and conservation organizations.

**For Non-Agricultural Landowners:**

**Site              Description**

[How to Build a Pollinator Garden](#) U.S. Fish and Wildlife Service easy step-by-step guide to building your own pollinator garden.

[Monarchs in the Rough](#) A partnership between Audubon International and the Environmental Defense Fund that works together with golf courses to restore monarch and pollinator habitat in out-of-play areas. They provide milkweed seed to golf courses to create high-quality monarch habitat along with native wildflowers supplied by the courses.

[Mayors Monarch Pledge](#) The National Wildlife Federation's Mayors' Monarch Pledge encourages U.S. cities, municipalities, and other communities to commit to creating habitat for the monarch butterfly and pollinators, and to educating residents about how they can make a difference at home and in their community.

[Parks for Monarchs](#) The National Recreation and Park Association and Monarch Joint Venture developed this guide to provide a framework for how parks can get involved in monarch conservation activities.

**Community Science Participation:**

**Site              Description**

[Monarch Citizen Science](#) U.S. Fish and Wildlife Service summary of citizen, or community, science programs that are supporting monarch butterflies.

[Study Monarchs: Community Science Opportunities](#) Monarch Joint Venture relies on the help of community scientists (also called citizen scientists) to collect data during all phases of the annual life cycle of monarch breeding, migrating, and overwintering.

[Journey North](#) Journey North is a website that is collects species observations submitted by citizens in order to document and map the annual migratory movements of monarchs. This site can provide information on when monarchs are arriving and/or departing specific areas of the country.

### **Conservation Partnerships:**

These partnerships that exist to promote monarch conservation and are also available to support landowner's efforts, address concerns, and provide additional information.

<b>Organization</b>	<b>Description</b>
<a href="#"><u>Monarch Joint Venture</u></a>	Monarch Joint Venture is a national non-profit organization building a partnership of federal and state agencies, other non-profits, community groups, businesses, and academic programs that aims to protect monarchs and their migration by promoting habitat conservation, education and science. <ul style="list-style-type: none"><li>• <a href="#"><u>BMPs for Monarch Habitat in Grazing Lands (link)</u></a></li></ul>
<a href="#"><u>Xerces Society</u></a>	The Xerces Society for Invertebrate Conservation is an international non-profit science-based conservation organization that works with scientists, land managers, educators, policymakers, farmers, and communities to achieve meaningful long-term conservation. Their monarch website provides numerous resources for landowners to learn how to support monarch conservation. <ul style="list-style-type: none"><li>• <a href="#"><u>Managing Habitat for Pollinators (link)</u></a></li></ul>
<a href="#"><u>Monarch Watch</u></a>	Based at the University of Kansas, Monarch Watch is a non-profit education, conservation and research program focused on the monarch migration. Their website contains information about monarch biology, tagging and monitoring, milkweed and waystations, public events, as well as providing means to obtain milkweed seed for habitat projects.

## **5.4 CCAA-focused conservation measures**

The conservation measures given in Appendix A are the same actions that Partners enrolled in the CCAA may take on the lands they own or manage. Landowners interested in participating in the Landowner Buffer Provision must apply and document at least one of these measures to lands in the buffer zone to obtain coverage under the CCAA permit. Any "take" of monarch butterfly as a result of applying any of these measures, or other covered activities listed in the CCAA, would be covered for incidental take provided they meet the self-certification requirements. Other conservation actions (i.e., actions not included in the table below) do not apply to the Landowner Buffer Provision but are welcome additions to any of these CCAA-specific actions. Further, these actions must not affect any other federally-listed or proposed animal, plant or designated critical habitat.

## 6. Who to Contact for More Information

We understand you may have more questions about monarch butterfly conservation, the CCAA, and/or the Landowner Buffer Provision. The table below will connect you to people that can answer your questions:

If You Are...	Then...
An agricultural producer, or live on agricultural property with an interest in monarchs or the CCAA...	Contact your state Farm Bureau: > <a href="https://www.fb.org/about/join">https://www.fb.org/about/join</a>
A non-agricultural landowner or live on a residential property with an interest in monarchs or the CCAA...	Contact the U.S. Fish and Wildlife Service: > <a href="https://www.fws.gov/initiative/pollinators/monarchs">https://www.fws.gov/initiative/pollinators/monarchs</a> > <a href="mailto:midwestnews@fws.gov">midwestnews@fws.gov</a> > (612) 713-5360
Interested in monarch conservation, and how you can help...	Contact the U.S. Fish and Wildlife Service: > <a href="https://www.fws.gov/initiative/pollinators/monarchs">https://www.fws.gov/initiative/pollinators/monarchs</a> > <a href="mailto:midwestnews@fws.gov">midwestnews@fws.gov</a> > (612) 713-5360
Asking questions about the CCAA, or specific partnering organizations...	Contact the U.S. Fish and Wildlife Service: > <a href="https://www.fws.gov/initiative/pollinators/monarchs">https://www.fws.gov/initiative/pollinators/monarchs</a> > <a href="mailto:midwestnews@fws.gov">midwestnews@fws.gov</a> > (612) 713-5360
Seeking to obtain a list of federally listed or proposed species and critical habitats in your area, and learning about activities that may cause incidental take to monarchs or other species...	> <a href="https://ipac.ecosphere.fws.gov/">https://ipac.ecosphere.fws.gov/</a>



## Appendix A. CCAA Conservation Measures for Monarch Butterflies

**Table 2. Conservation measures that support monarch butterfly migration and reproduction.**

Table 2 is an excerpt from Table 6-3 in the CCAA.

Conservation Measure	Purpose	Description	Examples
<p><b>Seeding and planting to restore or create habitat</b></p>	<p>Active planting of an area to promote preferred native floral resources for monarch breeding and/or foraging.</p> <p>Addresses key threats to monarchs including loss of habitat resulting from land conversion.</p>	<p>Completing seeding or planting projects that create areas of suitable habitat with milkweed and/or floral resources available throughout the growing season.</p> <p>Seed mixes should be free of invasive or aggressive non-native species that inhibit species diversity when established.</p> <p>Seed mixes and plugs should not be treated with systemic insecticides.</p> <p>Determine applicability of seeding and planting based on seasonality, frequency, location, and timing for implementation based on state or regional guidelines.</p>	<ul style="list-style-type: none"> <li>● <b>Establish native seed mixes containing a diversity of native wildflowers, including milkweed, as appropriate.</b></li> <li>● <b>Apply native seed mixes in bare soil areas including those recently cleared, graded, or disturbed.</b></li> <li>● <b>Landscape facilities with native flowering plants that act as nectar resources.</b></li> <li>● <b>Implement enhancement projects that increase the habitat available (special partnership habitat restoration projects on enrolled lands, and post-construction enhanced seeding where appropriate).</b></li> </ul>
<p><b>Controlled grazing to promote suitable habitat</b></p>	<p>Use of controlled grazing to sustain open early successional habitats suitable for monarchs.</p> <p>Addresses key threats to monarchs including loss of habitat from herbicide use and mowing.</p>	<p>Implement grazing within suitable habitat using BMPs that minimize impacts to monarchs.</p> <p>Determine applicability of grazing based on seasonality, frequency, location, and timing for implementation based on state or regional guidelines.</p>	<ul style="list-style-type: none"> <li>● <b>Minimize use of grazing in existing monarch habitat during peak monarch breeding and migration periods while considering the long-term goal of improving habitat for the species and promoting fall nectar plants.</b></li> <li>● <b>Examples of conservation grazing can be found in the Federal Highways Administration handbook pp. 40-41, Xerces' "Roadside Best Management Practices that Benefit Pollinators," or the Best Management Practices for Monarch and Pollinator Habitat in Grazing Operations (developed by Missourians for Monarchs).</b></li> </ul>

Conservation Measure	Purpose	Description	Examples
<p><b>Brush removal to promote suitable habitat</b></p>	<p>Management or removal of woody (non- herbaceous) plants including those that are invasive or listed as a noxious weed.</p> <p>Addresses key threats to monarchs including loss of habitat from herbicide use and mowing.</p>	<p>Removal of dense brush using forestry mowing, chainsaws, or other mechanical methods to promote more open grassland habitat types. Maintenance of brush management involves monitoring for regrowth or reoccurrence of brush.</p>	<ul style="list-style-type: none"> <li>● <b>Removal of woody plants in densely covered shrub areas not containing suitable habitat (e.g., shrub thickets, invasive species colonies).</b></li> <li>● <b>Removal of woody plants in areas containing suitable habitat when monarchs are not likely present.</b></li> <li>● <b>Removal of woody plants by hand at any time of the year.</b></li> </ul>
<p><b>Prescribed burning to promote suitable habitat</b></p>	<p>Management through use of prescribed fire to sustain or enhance plant diversity.</p> <p>Addresses key threats to monarchs including loss of habitat from herbicide use and mowing.</p>	<p>Use of prescribed fire to sustain open early successional habitats suitable for monarchs.</p>	<ul style="list-style-type: none"> <li>● <b>Conduct prescribed burns in suitable habitat using BMPs that minimize impacts to monarchs or their habitat use.</b></li> </ul>
<p><b>Suitable habitat idle lands, or set-asides</b></p>	<p>Sustain areas of relatively undisturbed suitable habitat throughout the portions of the growing season when monarchs may be present.</p> <p>Addresses key threats to monarchs including loss of habitat from land conversion, herbicide use, and mowing.</p>	<p>Maintaining areas of suitable habitat annually that will be undisturbed by temporary losses from construction, maintenance, or vegetation management in any given year.</p> <p>These areas may change spatially on an annual basis as new habitat becomes available and maintenance needs occur.</p>	<ul style="list-style-type: none"> <li>● <b>Sustaining idle lands in between vegetation management treatments or cycles.</b></li> <li>● <b>Designating special habitat ‘preserves’ in areas that will be protected from construction or maintenance. These may include special restoration projects, high quality areas, or other location designated by the Agreement Partner.</b></li> <li>● <b>Avoid disruption to disturbance of existing monarch habitat during peak monarch breeding and migration periods.</b></li> </ul>

Conservation Measure	Purpose	Description	Examples
<p><b>Conservation mowing to enhance floral resource habitat</b></p>	<p>Mowing in a manner that promotes habitat and minimizes impacts based on monarch breeding and migration activity.</p> <p>Addresses key threats to monarchs including loss of habitat from mowing.</p>	<p>Conduct mowing and/or haying practices in a manner consistent with the intent and recommendations outlined in published BMPs for monarchs, and in conjunction with operational needs.</p> <p>Timing may be informed by published guidance, annual monitoring documented by Journey North, or in consultation with the Program Administrator or USFWS Agreement Coordinator.</p>	<ul style="list-style-type: none"> <li>● <b>Conduct mowing in suitable habitat where possible in conjunction with recommended practices by Monarch Joint Venture, Xerces Society, FHWA BMPs for pollinators, mowing BMPs (pp. 18-25), and/or Federal agencies BMPs for Mowing and Pollinators (p. 29).</b></li> <li>● <b>Mowing or haying at a periodic rotation (e.g., less frequently than annually), or based on an Applicant-defined IVM strategy that is within the targets set for net conservation benefit.</b></li> <li>● <b>Conduct training for mower operators to help identify and avoid milkweed and blooming nectar plants during operations.</b></li> </ul>
<p><b>Targeted herbicide treatments</b></p>	<p>Herbicide applied to control undesirable vegetation and restore native or desired plant communities and enhance suitable habitat.</p> <p>Addresses key threats to monarchs including loss of habitat from herbicide use.</p>	<p>Targeted application of herbicides completed in a manner that applies chemicals to a specific plant or group of plants while avoiding herbicides contacting off-target vegetation.</p>	<ul style="list-style-type: none"> <li>● <b>Spot spraying of ecologically invasive, defined noxious weeds, or incompatible vegetation to promote a diversity of nectar plants.</b></li> <li>● <b>Keep broadcast applications limited to active use facilities, or areas within spans containing non-contributing lands with little or no available milkweed and/or blooming nectar resources.</b></li> <li>● <b>Targeted herbicide treatments applied in conjunction with other conservation measures such as site preparation for native seed mix installations or follow up treatment of previously-mowed dense brush.</b></li> </ul>

**Table 2. Conservation measures that support monarch butterfly overwintering.**

Table 2 is an excerpt from Table 6-4 in the CCAA.

Conservation Measures	Time Period	Applicable Location	Purpose
<p><b>Eastern Population:</b></p> <p>Maintain and enhance flowering nectar plants.</p> <p>As much as possible, avoid removing flowering nectar plants and shrubs.</p>	<p>November 15<sup>th</sup> - March 15<sup>th</sup></p>	<p>Within a half mile inland of known winter aggregation sites along Southern Atlantic Ocean coast.</p>	<p>In winter months (approximately November 15<sup>th</sup> - March 15<sup>th</sup>), some monarchs remain in reproductive diapause in sites along the Southern Atlantic Ocean coast.</p> <p>These sightings are primarily coastal (Howard et al. 2010, p. 3). Most of the Atlantic clustered monarchs are found in eastern red cedar forest. Overwintering monarchs tend to become more active in warmer weather (60-70 degrees Fahrenheit) and nectar on flowering resources nearby (usually planted flowers in developed areas). Maintaining nectar resources in the winter when they are typically scarce is important for the population.</p>
<p><b>Western Population:</b></p> <p>Maintain and enhance flowering nectar plants.</p> <p>Avoid removing flowering nectar plants</p>	<p>October 1<sup>st</sup> - March 1<sup>st</sup></p>	<p>Within a half mile of known aggregation sites in California, Arizona, and Nevada</p>	<p>Migratory monarchs in the Western North American population primarily overwinter in groves along the coast of California and Baja California (Jepsen and Black 2015, p. 149) although some monarchs aggregate in areas of California, Arizona, and Nevada. These aggregation sites are outside the scope of the Agreement, however conservation measures and adopted acres (in early successional habitats) within half of a mile of these areas will reflect one of the most pressing needs for western monarchs (i.e., the aggregation sites themselves cannot be enrolled in the Agreement; areas within half of a mile of these sites may be enrolled, however these specific conservation measures are required.)</p>
<p><b>Western Population:</b></p> <p>Do not remove trees and shrubs except for the purpose of maintaining human health and safety</p>	<p>All Times</p>	<p>Within a half mile of known aggregation sites in California, Arizona, and Nevada</p>	<p>The maintenance of trees and shrubs within half mile buffers is to preserve the microclimate of overwintering groves. These microclimates are a new area of study and it is uncertain what a meaningful buffer area is. As new information becomes available, it may be acceptable to restrict these areas to a smaller buffer, and this can be addressed through adaptive management.</p>

Conservation Measures	Time Period	Applicable Location	Purpose
<p><b>Western Population:</b>                      Avoid planting milkweed along the coast of California, in most areas</p>	<p>All Times</p>	<p>Along the coast of California, in most areas. Local guidance on milkweed planting may be provided through the Service, or other partners in monarch conservation.</p>	<p><b>Milkweed does not naturally grow close to the coast north of Santa Barbara (<a href="http://www.monarchmilkweedmapper.org">www.monarchmilkweedmapper.org</a>). Milkweed near aggregation sites can interrupt healthy monarch migratory and overwintering behavior and it can result in parasite load buildup such as <i>Ophryocystis elektroscirrha</i>, or OE (Satterfield et al. 2016, p. 4).</b></p>
<p><b>Western Population:</b>                      Report all Western monarch observations, including breeding</p>	<p>Reporting during any time of the year is helpful, however winter observations are important to help inform future conservation efforts.</p>	<p>Report observations of Western monarchs through tracking programs available.</p> <p>This measure only applies in Arizona, Nevada, and California.</p>	<p><b>Report all monarch observations, including breeding, to the Western Monarch Milkweed Mapper or via iNaturalist:</b>  <a href="https://xerces.org/milkweedsurvey/">https://xerces.org/milkweedsurvey/</a></p>