2019 Glenview Monarch Conservation Plan



(Photo by: Lucas Slovicek)

Village of Glenview Monarch Conservation Plan

2019



Developed by:
The Village of Glenview Natural Resources Commission

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INTRODUCTION

Monarch butterfly populations have plummeted in recent years at an alarming rate. This decline threatens to deprive future generations of the wonder and beauty of the monarch and is an ominous indicator of the worsening health of interconnected ecosystems. As recently as 1996, the monarch population wintering in Mexico was over 1 billion, turning forests into seas of orange and black. In 2013 an estimated 56 million overwintering monarch butterflies were estimated in Mexico. Thanks to coordinated conservation efforts across Canada, the United States, and Mexico, the population of monarch butterflies at the overwintering grounds in Mexico increased to approximately 200 million (4.01 hectares). However, the population has not reached the level recommended by the National Strategy to Promote the Health of Honey Bees and Other Pollinators of 6 hectares (the average population between 2014 and 2015). Six hectares, or a population of 225 million butterflies, would indicate species health and ensure species survival if another winter storm threatens the monarchs' overwintering habitat.

Monarch butterflies, as well as other butterfly species, bees, birds, and bats, help move pollen from one plant to another, fertilizing flowers and making it possible for plants to produce food needed to feed people and wildlife. More than a third of the food that we eat requires pollinators to grow, yet many of these pollinator species are declining, due to contributing factors such as habitat loss, pesticides, and climate change. We need to know more about why monarchs are disappearing, but we do not need to wait to take the actions that scientists tell us are necessary. Monarchs need all of us to make our homes, businesses, schools, and community spaces more wildlife-friendly.

The need for immediate action cannot be overstated. Currently, states have considerable leeway in determining action for improving habitat, limited mostly by available resources and the willingness of land owners and managers. If the monarch butterfly is listed as an endangered species under the Endangered Species Act (ESA), the environment for collaboration becomes more difficult. It is in everyone's best interest to work together in an effort to curtail any potential federal action.

1.1 SPECIES INFORMATION

Monarchs, like all butterflies, change their diet as they develop. During the caterpillar stage, they rely exclusively on milkweed plants. Milkweeds are wildflowers in the genus *Asclepias*. Milkweeds contain glycoside toxins that are harmless to the monarch but poisonous to its predators. Monarch caterpillars feed on all different parts of milkweed plants and store up the toxins in their body. The toxins remain in their system even after metamorphosis, thereby making adult monarchs poisonous as well and unpalatable to predators. Adult monarchs feed on nectar from a range of flowers, including milkweeds, but only breed in areas where milkweeds are found.

Most monarch butterflies do not live more than a few weeks. There are about three to five generations born each spring and summer and most of the offspring do not live beyond five weeks. The lone

exception is the last generation born at the end of the summer. The last generation of each year is the overwintering generation. Rather than breeding immediately, the overwintering monarchs fly to Mexico and stay there until the following spring. Because they are unable to survive over-wintering in harsh northern climates they must annually migrate south in the fall. In the early spring, they fly north to the southern United States to breed. Overwintering monarch butterflies can live upwards of eight months, but must travel through many states to reach their overwintering territory in Mexico.

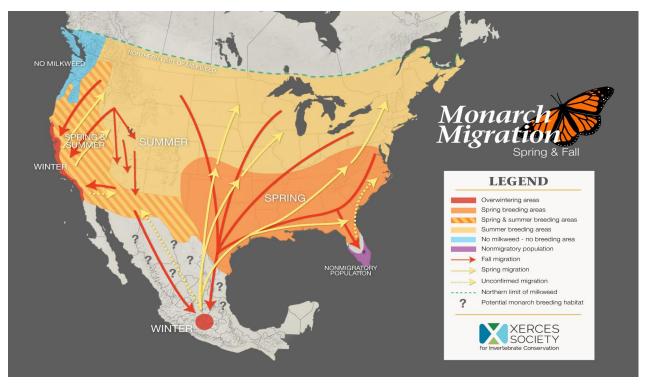


Figure 1. Seasonal monarch migration (Xerces Society).

In the spring, summer, and early fall, monarch butterflies can be found wherever there are milkweeds. The relationship between monarchs and milkweed throughout the butterflies' life cycle is intricately bound. As a caterpillar, their diet consists solely of milkweed. Adult monarchs must lay their eggs on milkweed and thus are constantly searching for milkweeds in fields, meadows, and parks. For this reason, many people plant milkweeds in their gardens to make the plants more accessible for travelling monarchs. Adult monarchs cannot survive freezing temperatures, so they must overwinter in the cool, high oyamel forests in the Mexican state of Michoacán and woodlands in central and southern California. Overwintering monarch butterflies in Mexico begin to make the journey north to the United States in early spring. Soon after they leave Mexico, pairs of monarchs mate. As they reach the southern United States, females will look for available milkweed plants to lay eggs.



Figure 2. Monarch caterpillar becoming a chrysalis (Keifer).

The eggs hatch after approximately four days. The caterpillars are small and they grow many times their initial size over a two-week period. The caterpillars feed on available milkweed plants. When they get big enough, each caterpillar forms a chrysalis and goes through a process of metamorphosis.

The chrysalis protects the monarch as it is going through the major developmental change of turning from a caterpillar to a butterfly. The chrysalis is green with golden spots. After another 2-week period, an adult butterfly will emerge from the chrysalis. The adult monarchs continue the journey north that was left unfinished by their parents. Each year, three to five generations will be born to continue migrating north. It is only the last generation, born in late summer that will live eight months and migrate back to Mexico to start the cycle over again.

1.2 THREATS TO THE MONARCH

Monarch scientists attribute the decline of the monarch population to degradation and loss of summer breeding habitat in the U.S., and loss of winter habitat in Mexico.

Monarch butterfly population decline is an indicator that there is something wrong in our shared environment and a warning that we could be affected as well. Consider the following:

• One third of the monarch's summer breeding habitat has been destroyed, largely in the Midwest. Expansion of row crop agriculture and, to a lesser extent, development, has destroyed 90 percent of our nation's native grassland ecosystems, including the milkweed that monarchs depend on.

- Monarch overwintering sites are under threat, especially in Mexico where the forests used by monarchs are under logging pressure.
- Monarchs are being directly killed by insecticides both as adult butterflies and as caterpillars, in both agricultural and suburban and urban landscapes.
- Climate change has intensified weather events which may impact monarch butterfly populations.

1.3 WHY SHOULD WE PRIORITIZE MONARCH CONSERVATION?

The monarch butterfly is an iconic North American species whose multigenerational migration and metamorphosis from caterpillar to butterfly has captured the imagination of millions. Their population decline has been sudden and rapid since the late 90s that many conservation groups have been created for monarch butterflies. The monarch butterfly population decline has been so intense that international political action has been taken in attempt to protect the species. In February 2014, President Obama agreed to partner with Canadian Prime Minister Stephen Harper and Mexican President Enrique Peña Nieto to protect the monarch butterfly and ensure their continued survival for future generations. Further action must be taken on local levels in order to protect the unique and at-risk specie.

1.4 WHY IS GLENVIEW IMPORTANT TO THE SUCCESS OF MONARCHS?

The Village of Glenview lies within the migratory flyway (see Fig. 1). Each fall, millions of monarch butterflies pass through Glenview on their journey to the oyamel fir forests in central Mexico where they overwinter. In the spring and summer, monarchs breed or travel through Glenview. Urbanized locations are becoming increasingly important for refuge monarch habitat as agricultural practices have negatively affected milkweed populations in rural regions.

Habitat

In 2016, the Village signed the Mayors' Monarch Challenge and fulfilled its goals largely by partnering with two schools to assist them in creating monarch gardens and by adding monarch habitats to landscaping at the Village Hall and medians on Patriot Blvd and Chestnut Road.

In 2017, the Village partnered with the Field Museum of Natural History to census milkweed stems as a proxy for monarch habitat in the Village. Results indicate a minimum of 15,000 milkweed stems within Village limits, with particularly high concentrations in Gallery Park, Kent Fuller Air Station Prairie, and the Glen Club. Several residences were noted to include milkweed as part of their landscaping. Because the census did not include backyards, an informal survey of residents was conducted through the *Village Report* and *e-Glenview*. Sixty-three responses were collected, indicating that some residents are purposefully supporting monarch butterflies through their landscaping choices, and a few are rearing monarch caterpillars to promote successful metamorphoses (See Appendix A).

On public property, the Village continues to evaluate and improve monarch habitat. In 2017, relandscaping to include milkweed and nectar plants was conducted at the downtown Metra train station, Village Hall, a pocket park at the Glen Town Center, and road medians. In 2018, efforts to improve monarch butterfly habitat continued with the assistance of grants from the ComEd Green Region program and the National Wildlife Federation. The grant-supported projects expanded monarch habitat through plantings at Village Hall, roadside medians, both Metra stations, the Glenview Public Library, and through enhancement seeding at Techny Basin, Gallery Park, and the Baxter parcel.

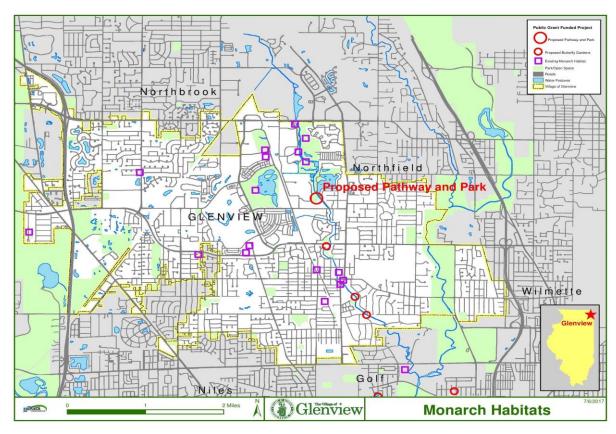


Figure 3. Glenview Monarch habitat locations, both established and proposed.

Several Village-owned locations have been registered as monarch waystations, and additional locations likely qualify. A story map to document these habitats is in progress and will be publicly available online when complete.

Monarch habitat can be enhanced at existing locations by adding greater numbers and diversity of milkweed and nectar plant species. Many locations are routinely provided supplemental seed through the Village's annual natural areas maintenance contract. In 2018, the ComEd Green Region and the National Wildlife Federation grants provided the Village with native plants and seed to enhance habitat. A grant application to the Chi-Cal Rivers Fund in 2018 for a project that would improve existing pollinator habitat at the Baxter parcel and the floodplain buyout parcels was not approved that year, but feedback was positive and the Village will continue to seek funding. As additional areas are re-landscaped throughout Glenview, monarch habitat will be considered.

Thus, a network of public and private monarch habitat exists in Glenview and can be expanded. Including milkweed and nectar plants in landscaping projects can be supported for Village and other properties.

Outreach and Education

An Eagle Scout seeking further involvement through a Hornaday Award has participated in several habitat improvement and public awareness events, and will continue to support the project by, for example, posting Monarch Waystation signs at selected public locations and participating in additional public outreach and habitat improvement projects.

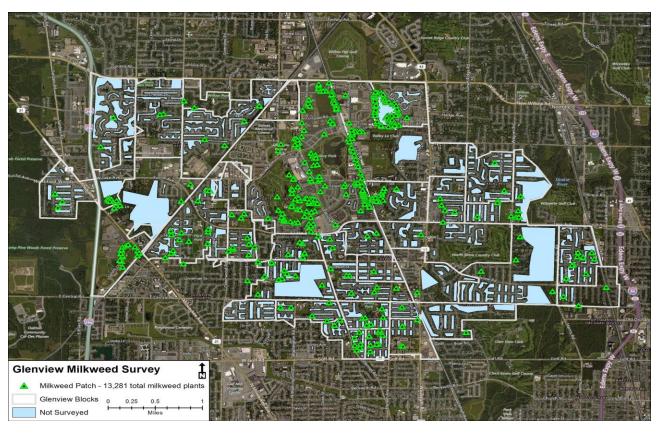


Figure 4. Glenview milkweed survey, conducted in 2017.

Monarch habitat has been the highlighted topic during at least two Farmer's Market Green Table events last season, with free milkweed seeds or plants given to interested visitors. In 2017, a special tabling event took place at the downtown Glenview Metra train station to provide information and milkweed seed packets to commuters passing by the new butterfly garden. An article and survey in *The Village Report* highlighted monarch butterflies and steps residents could take to favor them. In 2019, a program hosted by the Glenview Public Library focused on pollinators. In addition, the Glen Club golf course was awarded recognition of its efforts to support monarch conservation in 2018, the inaugural year of the Village's environmental sustainability award program.

1.5 MISSION AND VISION

Mission: To increase monarchs and their habitat throughout Glenview.

Vision: A stabilized monarch population and an educated populace.

1.6 POTENTIAL COLLABORATORS

- Field Museum
- Chicago Metropolitan Agency for Planning
- Glenview Park District
- Glenview Public Library
- School Districts
- Private golf courses
- Landscape companies
- Nurseries
- Residents
- Land-owning businesses

1.7 DETAILS OF THE MONARCH CONSERVATION PLAN

GOAL 1: FORMALIZING AND INTEGRATING MONARCH PLANNING INTO OPERATIONS

Strategy 1: Discuss monarch plan with team during 2019 review of Village codes and ordinances.

Strategy 2: Adopt the monarch conservation plan as internal policy or as an amendment to *A Plan for Nature in Glenview*.

Strategy 3: Request that the Village Board recognize Glenview as a Monarch Waystation, as demonstrated by the Northbrook-based Monarch Maniac organization.

GOAL 2: INCREASING THE NUMBER OF MONARCH HABITATS AND WAYSTATIONS

Strategy 1: Promote plant lists that support monarchs at all of their life stages.

• The Glenview Natural Resources Commission will continue to offer the Field Museum *Rapid Color Guide* describing monarch-supporting native plant species for residential gardens. The guide can be offered at public events and online.

Strategy 2: Establish new pollinator habitats each year.

- The Village will create or assist in creating at least one new pollinator habitat on public property each year.
- The Natural Resources Commission will partner with the Glenview Public Library to present a program about the value of pollinators and how to create habitat for them in urban/suburban locations (2018, 2019).
- The Natural Resources Commission and Village staff will offer information to residents seeking to install pollinator habitat on private property and encourage enrollment in the Monarch Waystation program.
- Residents seeking to install rain gardens will be encouraged to consider monarch habitat in their design.

Strategy 3: Engage plant sellers and nurseries in monarch conservation efforts

- Develop a list of local plant sellers, nurseries, and native plant sales.
- Encourage plant sellers to sell locally adapted milkweed and nectar plants.
- Encourage plant sellers to sell pesticide-free plants and label them as such.

Strategy 4: Continue to sell or offer milkweed seed packets or plants at events sponsored by the Village of Glenview or Glenview Park District.

GOAL 3: IMPROVING EXISTING HABITATS

Strategy 1: Add milkweed and nectar plant diversity to natural areas and gardens maintained by the Village.

- The Glenview Natural Resources Commission will partner with NWF to install milkweed seed in Gallery Park and Techny Basin
- Ensure that enhancement seeding or planting as part of the natural areas maintenance contract includes milkweed and nectar plants.

Strategy 2: Partner with local organizations and institutions to discuss maintenance, enhancement, and expansion possibilities for their monarch-friendly landscapes. Examples include the Glenview Park District, Glenview school districts, Glenview Public Library, Illinois Department of Transportation, golf courses, and business campuses.

- Review mowing and pesticide practices.
- Encourage diversifying milkweed and nectar species.
- Encourage expanding butterfly gardens.

GOAL 4: INCREASING AWARENESS OF THE MONARCH PLIGHT AND THE NEED FOR MONARCH CONSERVATION

Strategy 1: Continue to use existing communication tools to support monarch conservation.

- Create a webpage that includes
 - o Role of urban/suburban areas in supporting pollinators.
 - o Details of Mayors' Monarch Pledge and other actions taken by the Village.
 - o Story map of public demonstration gardens.
 - o Planting best practices.
 - o Links to Field Museum, Monarch Conservation Plan and other websites.
- Distribute milkweed seed packets and monarch information at community events including
 - o Farmer's Market Green Table.
 - o The Grove plant sale.
 - o Summer Festival.
 - o Resident Open House.
 - o River cleanup events.
 - o Speaking and volunteer events.

GOAL 5: INCREASING THE AVAILABILITY OF EDUCATIONAL PROGRAMS IN SCHOOLS AND THE NUMBER OF SCHOOL GARDENS

Strategy 1: Include discussion of monarch and pollinator habitat during existing Arbor Day observations.

Strategy 2: Continue to offer support such as planning, education, and supplies as available to schools implementing pollinator gardens.

CITATIONS:

Keifer, Cathy. "Caterpillar becoming Chrysalis." *Shutterstock*, www.shutterstock.com/image-photo/monarch-caterpillar-shown-various-stages-shedding-2479996.

"Seasonal Monarch Migration." *The Xerces Society Monarch Conservation*, Xerces Society for Invertebrate Conservation, www.xerces.org/wp-content/uploads/2015/10/MonarchMap-NatureServe-10.20.png.

APPENDIX A:

The Village of Glenview was selected by the Field Museum as a pilot city to assist in assessing monarch butterflies and milkweed conservation. The goal of on-going Village-wide surveying and inventories is to investigate monarch population decline and discover solutions within the Village to bolster monarch habitat. In 2017, interns mapped milkweed stems on public property and those readily visible in the front yards of private residences and businesses (see Figure 4). To learn more about milkweed plants on private property that are not visible from streets and sidewalks, the Village surveyed its residents. Results are presented in this appendix.

Which of these milkweed species are growing in your yard?

Answer	Number of Responses	Response Ratio
Common milkweed (Asclepias syriaca)	<u>21</u>	31.3%
Butterfly milkweed (Asclepias tuberosa)	<u>16</u>	23.8%
Whorled milkweed (Asclepias verticillata)	2	2.9%
Prairie milkweed (Asclepias sullivanti)	<u>6</u>	8.9%
Swamp milkweed (Asclepias incarnata)	<u>17</u>	25.3%
Have milkweed but don't know which kind	<u>5</u>	7.4%
Not sure if it is milkweed	0	0.0%
Don't have milkweed	<u>27</u>	40.2%
Other	<u>3</u>	4.4%
	67	100%

Approximately how many milkweed stems are in your backyard? (If you know the exact number, enter that in the "Other" box.)

Answer	Number of Responses	Response Ratio	
0		<u>23</u>	32.8%
1 to 5		<u>5</u>	7.1%
6 to 10		<u>14</u>	20.0%
11 to 20		<u>8</u>	11.4%
More than 20		9	12.8%
Other		<u>3</u>	4.2%
No Responses		8	11.4%
		70	100%

Do you also have in your backyard nectar plants preferred by monarch butterflies, such as black-eyed susan, purple coneflower, native aster and native goldenrod?

Answer	Number of Responses	Res Rat	sponse iio
Yes		<u>51</u>	72.8%
No		<u>14</u>	20.0%
Not sure		<u>2</u>	2.8%
Other		1	1.4%
No Responses		2	2.8%
		70	100%

APPENDIX B:

GOAL	STRATEGY	SCHEDULE	PROGRESS 2016	PROGRESS 2017	PROGRESS 2018	PROGRESS 2019+
Goal 1: FORMALIZING AND INTEGRATING MONARCH PLANNING INTO OPERATIONS	 Discuss monarch plan with team during 2019 review of Village codes and ordinances. Adopt the monarch conservation plan as internal policy or as an amendment to A Plan for Nature in Glenview. 	 Annually discuss monarch plan. Adopt conservation plan by 2020. 	Signed Mayor's Monarch Pledge.			 Attended monarch planning seminar in Lincoln, IL to present Glenview's monarch planning process.

GOAL	STRATEGY	SCHEDULE	PROGRESS 2016	PROGRESS 2017	PROGRESS 2018	PROGRESS 2019+
Goal 2: INCREASING THE NUMBER OF MONARCH HABITATS AND WAYSTATIONS	 Promote plant lists that support monarchs. Establish new pollinator habitats each year. Engage plant sellers and nurseries in monarch conservation efforts. Sell or offer milkweed seed packets or plants at events. 	 Annually promote plant lists and engage sellers/nurser ies. Annually establish and sell seed in the spring and summer. 	 Village provided mulch and technical support for butterfly garden planting at Westbrook Elementary School. Village provided lesson plan, design, technical support, and planting supervision for butterfly garden planting at Hoffman Elementary School. 	• Installed butterfly garden at downtown Glenview Metra station.	• Installed butterfly gardens at pedestrian path north of downtown Glenview Metra station, at Village Hall, at the Glen/North Glenview Metra station platform, and at the Glenview Public Library.	

GOAL	STRATEGY	SCHEDULE	PROGRESS 2016	PROGRESS 2017	PROGRESS 2018	PROGRESS 2019+
Goal 3: IMPROVING EXISTING HABITATS	 Add milkweed and nectar plant diversity to natural areas and gardens maintained by the Village. Partner with local organizations and institutions to discuss implementation, maintenance, enhancement, and expansion possibilities for their monarchfriendly landscapes. 	 Add milkweed and nectar plants annually in spring, early summer, or fall as needed to maintain populations. Annually partner with local organizations and institutions. 	 Village provided mulch and technical support for butterfly garden planting at Westbrook school as well as Hoffman. Median replantings included milkweed. Added milkweed plugs and nectar plants to Village Hall landscaping. 	 Installed butterfly garden at downtown Glenview Metra station. Median replantings included milkweed. 	 Installed butterfly gardens at: pedestrian path near Glenview Metra station Village Hall Glen/North Glenview Metra station platform Glenview Public Library medians (part of Com Ed Green Region grant). Installed milkweed and nectar plant seed at Techny Basin, Gallery Park, and Baxter Parcel (part of National Wildlife Federation grant). 	

GOAL	STRATEGY	SCHEDULE	PROGRESS 2016	PROGRESS 2017	PROGRESS 2018	PROGRESS 2019+
Goal 4: INCREASING AWARENESS OF THE MONARCH PLIGHT AND THE NEED FOR MONARCH CONSERVATION	 Continue to use existing communication tools to support monarch conservation. Distribute milkweed seed packets and monarch information at community events. 	 Use communicati on tools year-round. Annually distribute milkweed packets and information during spring, summer, and fall. 	Hosted Farmer's Market green table to provide pollinator information to residents.	 Collaborated with Field Museum to map milkweed stems in the Village. Conducted survey of residents regarding milkweed planting on private property. Hosted Farmer's Market monarch green tables. 	 Hosted Farmer's Market green tables to provide monarch information to residents. Hosted pollinator information event at the Glenview Public Library. 	 Hosted pollinator talk at the Glenview Public Library. Promoted Field Museum's private-property monarch monitoring webinar and hosted inperson training session at Village Hall.

GOAL	STRATEGY	SCHEDULE	PROGRESS 2016	PROGRESS 2017	PROGRESS 2018	PROGRESS 2019+
Goal 5: INCREASING THE AVAILABILITY OF EDUCATIONAL PROGRAMS IN SCHOOLS AND THE NUMBER OF SCHOOL GARDENS	 Include discussion of monarch and pollinator habitat during existing Arbor Day observations. Continue to offer support such as planning, education, and supplies as available to schools implementing pollinator gardens. 	 Annually at Arbor Day events. Seasonally offer support as schools request assistance from the Village. 	 Village provided mulch and technical support for butterfly garden planting at Westbrook Elementary School. Village provided lesson plan, design, technical support, and planting supervision for butterfly garden planting at Hoffman Elementary School. 			