



Michigan Pollinator Conservation

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U.S. Fish & Wildlife Service

Outline

- What is a pollinator?
- Why are pollinators important?
- Overview of threats
- Michigan species of concern
- Monarch butterfly status
- Other pollinators & their status (FWS)
- Pollinator Conservation efforts
- How each of us can help pollinators

What is a pollinator?

Pollinators – transfer pollen from male to female flower

- Butterflies
- Flies, Bees (native, honey), wasps, ants
- Bats (Africa, SE Asia, Pacific Islands- Mexico, AZ)
- Moths (nocturnal)
- Birds-Hummingbirds



Why is Pollinator Conservation Important?

- Unique habitats, diverse ecosystems
- Ecological diversity & function-**85-90% flowering plant species require pollination**
- Food for birds and wildlife
- Parallel declines in pollinators & insect-pollinated plants
- Significant population declines
- Economic contribution
 - 35% crops worldwide
 - Pollinator dependent crops-fruit belt
 - \$24 Billion to the US economy





28%

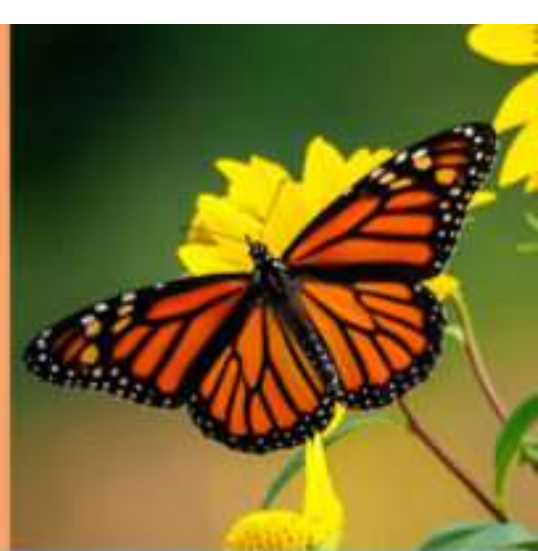
of North American bumble bees are in decline.

(Xerces and IUCN)

19%

of butterflies in the US are at risk of extinction.

(NatureServe)



Rusty patched bumble bee is endangered in the US.



The Karner blue butterfly is an endangered species that can be found locally.

27%

of mason bee species are "at risk"

(NatureServe)



50%

of leafcutter bee species are "at risk"

(NatureServe)

Why are Pollinators in Decline?

- Habitat Loss
 - Decreased floral diversity, host plants, nesting habitat
 - increased invasive plants
- Fragmentation
 - Loss of connectivity
- Contaminants/pesticides
- Disease, parasites, pathogens
- Climate change-intensified weather events
- Artificial light
 - Nocturnal pollinators & plant reproduction



Michigan Pollinator Species of Concern

MNFI

- 61 moths, butterflies, skippers
- 11 native bees

ESA

- 4 species listed as endangered
 - Mitchell's satyr butterfly (1991)
 - Karner Blue butterfly (1992)
 - Poweshiek skipperling (2014)
 - Rusty-patched bumble bee (2017)



Monarch Butterfly *Danaus plexippus*



Jim HudginsUSFWS

Monarch Butterfly Lifecycle

Egg



Larva



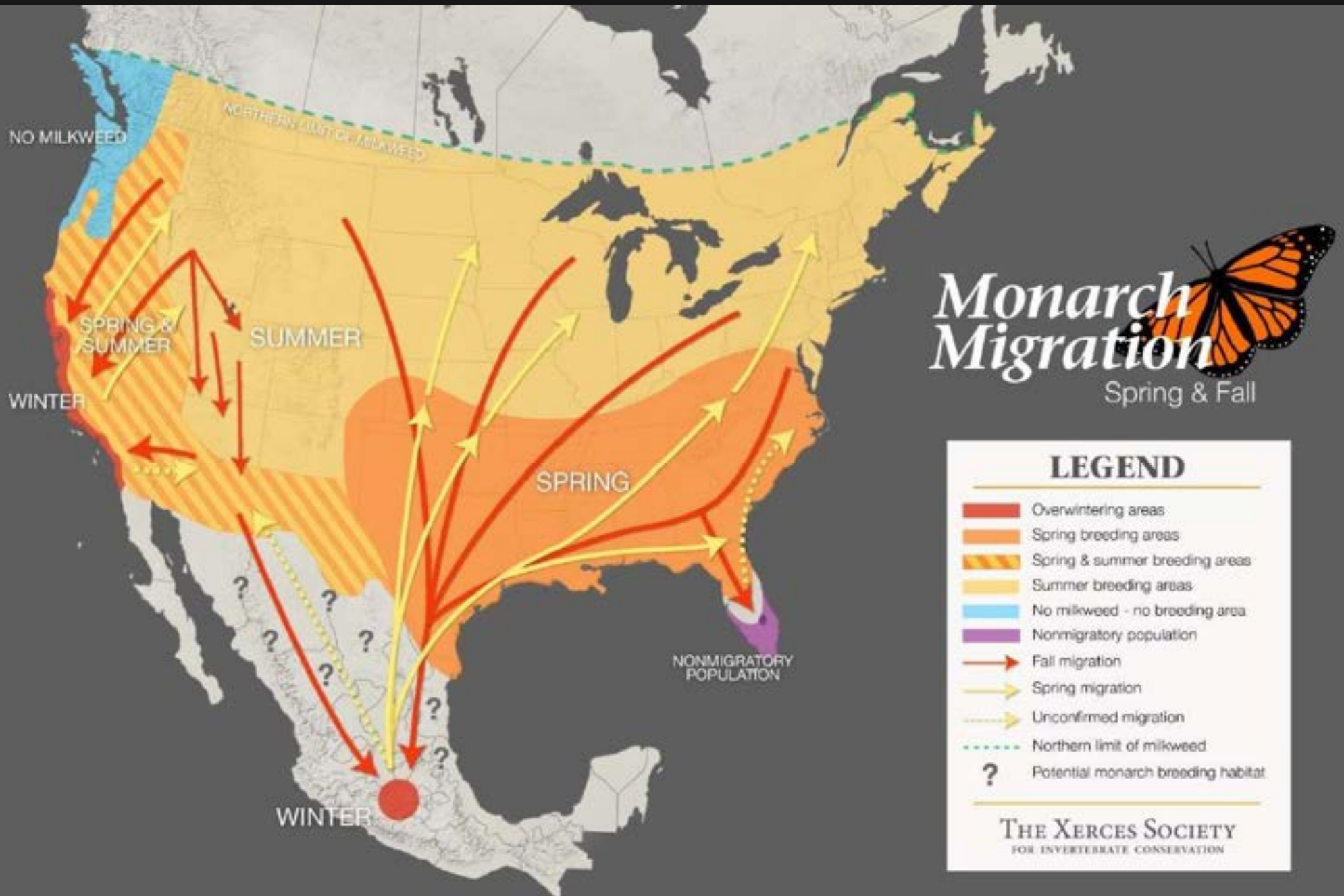
Chrysalis



Adult

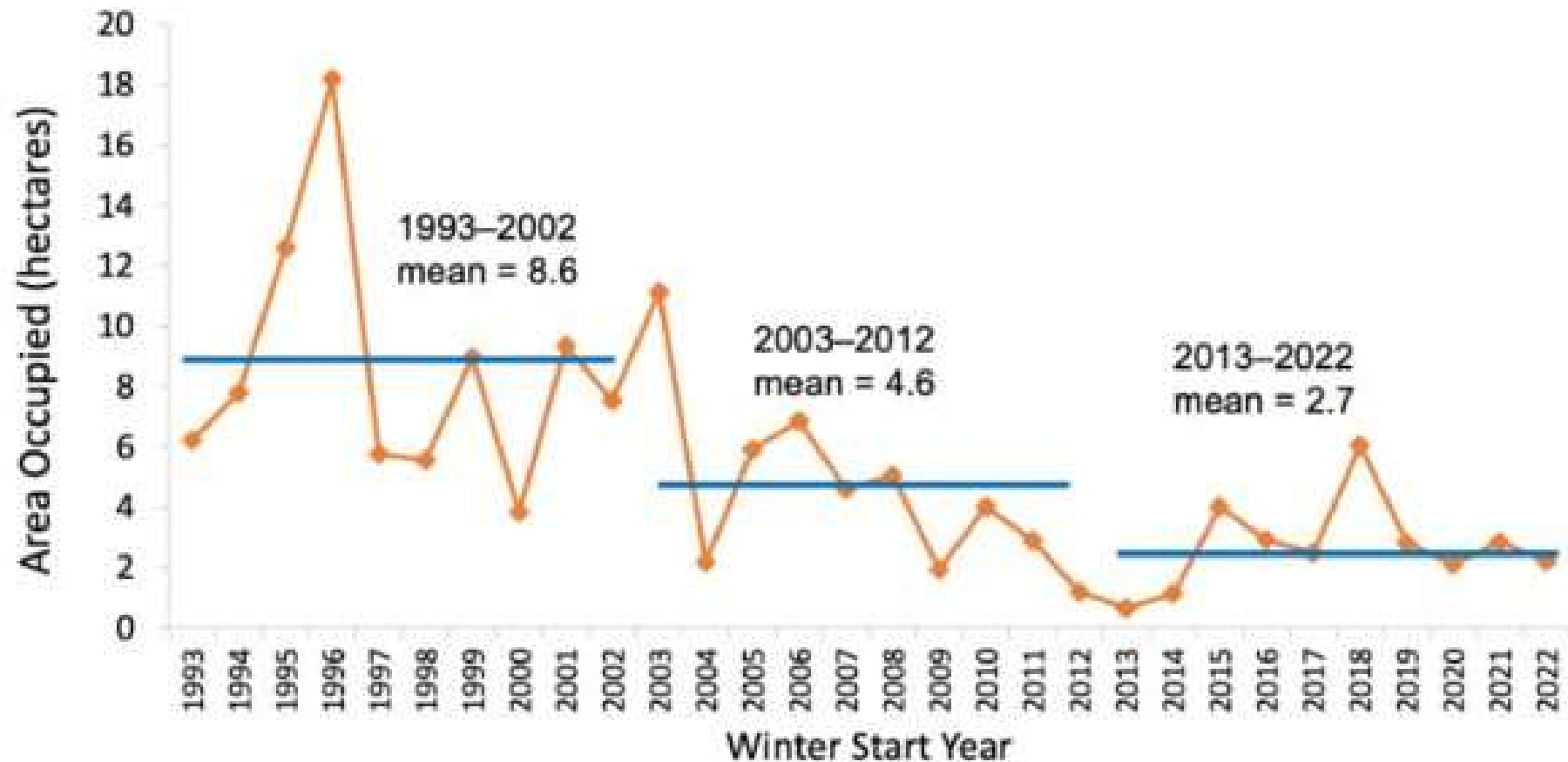


Monarch Butterfly Migration



Monarch Butterfly Population

Area Occupied in Mexico Winter Sites



Area with monarchs roosting on trees (1 hectare = 2.5 acres). Note year to year weather-driven variation, and long-term decline in monarch numbers illustrated by decade means. Data from 1993–2003: Monarch Butterfly Biosphere Reserve (MBBR, CONANP). Data from 2003–2022: WWF-Telcel Alliance, in coordination with the MBBR.

Monarch Butterfly Listing Status

History

2014 – FWS petitioned to list Monarch

December 2020 – Warranted, but precluded finding published

Current & Next Steps

FWS Staff review new information, update SSA, Develop strategy for potential 4(d) rule and critical habitat

Further information gathering with State and Federal partners on conservation strategy

FWS regional, Solicitor, HQ review

September 2024: Target date for proposed rule, if still warranted

November 2024: Final Rule with CH and 4(d)



Photo: Katie Steiger-Meister/USFWS

Other Pollinators

- Other butterflies-Mitchell's satyr, Karner blue- specialized locations, host plants
- Flies, beetles, wasps-larvae eat insects, dung, etc. Some adults feed on pollen & nectar
- Moths- Many species. Data gaps.
- Bees- Most effective pollination providers
 - 3,600 North American species
 - 465 species in MI
 - Collect and transport pollen
 - American Bumble Bee
 - State endangered





FWS 7-year listing plan species under review

- Monarch, *Danaus plexippus* - 2024
- Regal fritillary, *Speyeria idalia* - 2023
- Frosted Elfin, *Callophrys irus* - 2025
- American Bumble bee, *Bombus pensylvanicus* - 2026
- Variable cuckoo bumble bee, *Bombus variabilis* - 2026



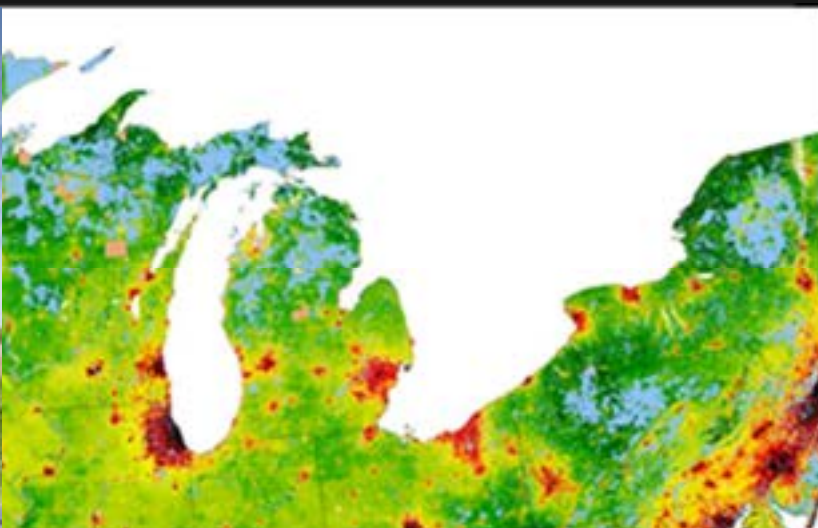
What are we doing about it?

- 2014 Obama federal memo
 - federal strategy to promote the health of honey bees & other pollinators
- Pollinator Health Task Force formed
- 2015 National Strategy to Promote the Health of Honey Bees and Other Pollinators
- Pollinator Partnership Research Action Plan
- BMP Guide
- National Seed Strategy- BIL
- 2016 Pollinator Partnership Action Plan
- Mid-America Monarch Conservation Strategy (2023 update)
- Michigan Monarch Collaborative/Strategy
- Great Lakes Pollinator Task Force
- MNFI, MSU & others
 - surveys, research, status assessments



What are we doing about it?

- Habitat Restoration
- Research/Modelling
- Surveys
- Collaboration
- Communication



Urban Pollinator Projects & Outreach



Everyone can help to restore, create, enhance, maintain & conserve pollinator habitat!!



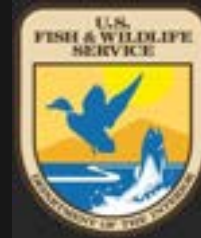
Ryan Hagerty/USFWS

Plant host, pollen & nectar plants

- Continuous bloom through the growing seasons.
- Natives are best!
- Habitat size-bigger is better
- Habitat connectivity
- Milkweed abundance & diversity
- Cover/wind break
- Management
 - mowing/timing
 - Rx fire
- Identify & treat invasive species



Collaboration



PRIVATE LANDOWNERS



SCHOOLS

INDUSTRY

LOCAL GOVERNMENTS

col·lab·o·ra·tion

noun

Two or more people working together towards shared goals



A photograph of a yellow and black striped butterfly perched on a cluster of small pink flowers. The background is a lush green field of yellow flowers under a clear blue sky.

Thank you!

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Questions?