

Word Cloud

What words come to mind when you think about the Monarch?



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Climate Change Canada

Environnement et
Changement climatique Canada



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Indigenous Engagement on the Draft Recovery Strategy for the Monarch in Canada

Presented by:

Elisabeth Shapiro and Kaytlyn Burrows-Kalenchuk

Canadian Wildlife Service – ON Region

October 3, 2024



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Protecting and conserving our natural heritage, predicting weather and environmental conditions, preventing and managing pollution, promoting clean growth and a sustainable environment for present and future generations.

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Branch



Species at Risk Public Website



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Canada.ca > Species at risk public registry > Species search

Monarch (Danaus plexippus) =

Species summary

Scientific name: *Danaus plexippus*
Taxonomic group: Arthropods
Range: Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Quebec, Saskatchewan



Legal list

Legal common name: Monarch
Legal scientific name: *Danaus plexippus*
Date added: June 5, 2003
Status on Schedule 1: Endangered (since December 8, 2023)
SARA status history: At SARA's proclamation in 2003, this wildlife species was listed as Special Concern on Schedule 1. On December 2, 2010, the Minister acknowledged COSEWIC's 2010 confirmation...

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Species at Risk Recovery Documents are one example of the materials and information you can find on this website



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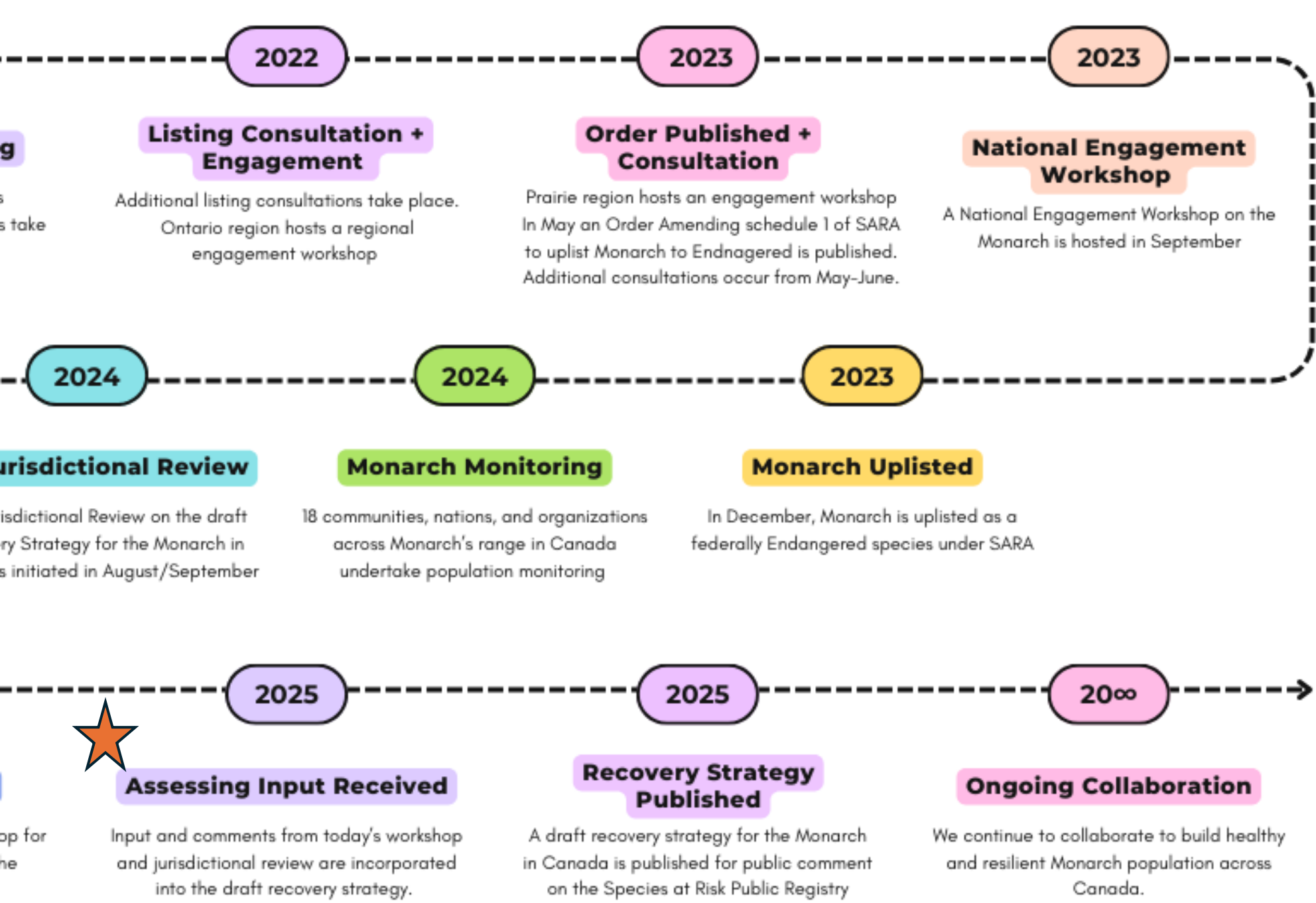
Purpose of this session



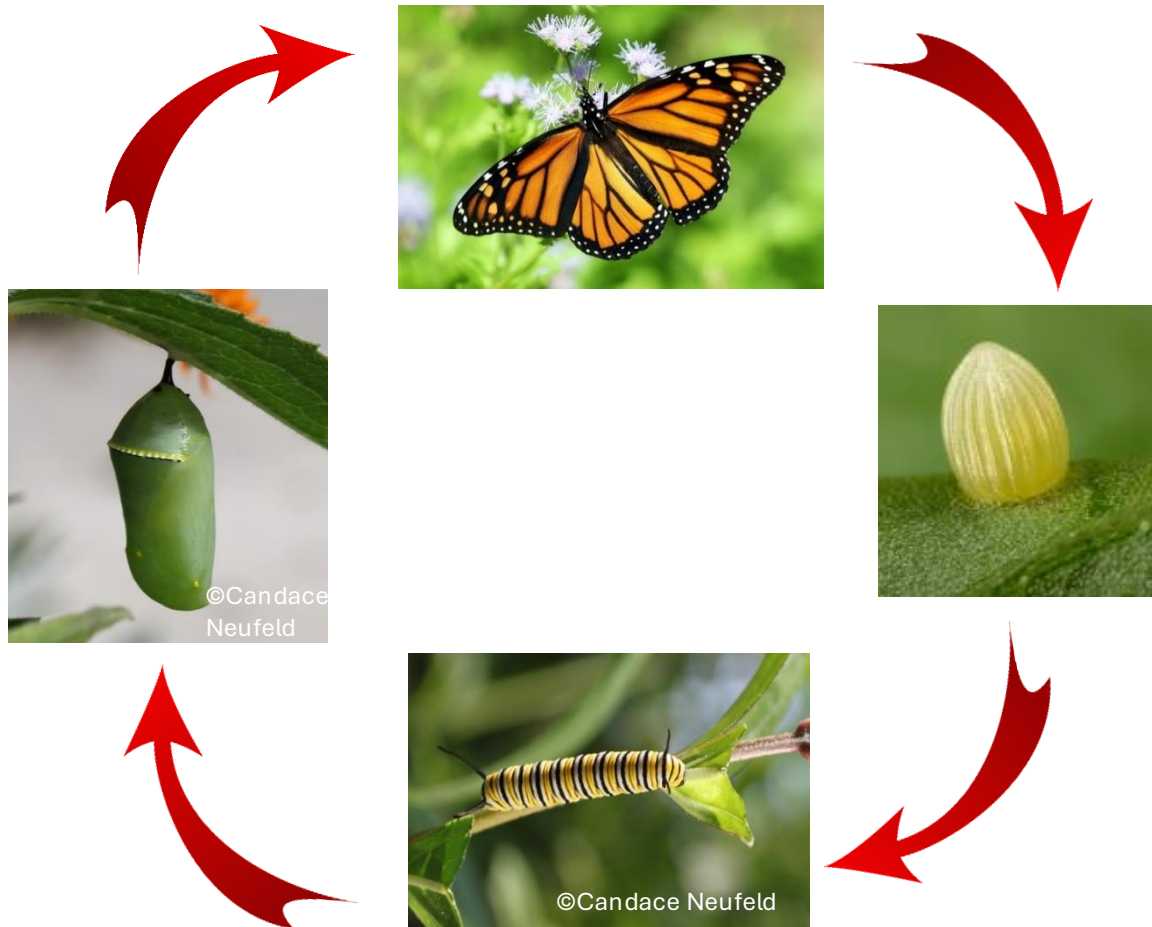
Photo/image: Bob Graham, Point Pelee National Park

- Strengthen our relationships through Listening, Learning and Sharing different knowledge about Monarch – an Endangered species.
- CWS will share the best available information used to develop key sections of the draft Recovery Strategy.
- Provide an open forum for discussion and input, intended to be complimentary to ongoing typical consultation process.
- Please feel free to participate in whatever way you feel comfortable. We welcome knowledge sharing, comments, concerns, and questions about Monarchs and the draft recovery strategy.



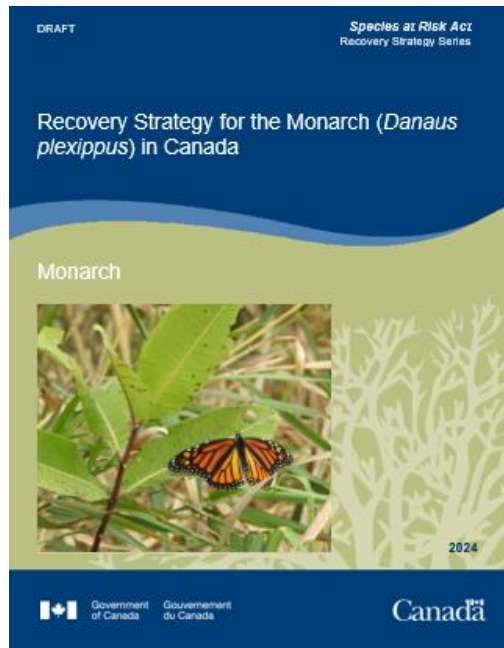


Monarch (*Danaus plexippus*): Life Cycle



Drafting a Federal Recovery Strategy

A federal Recovery Strategy (RS) is required for species listed as **Endangered**



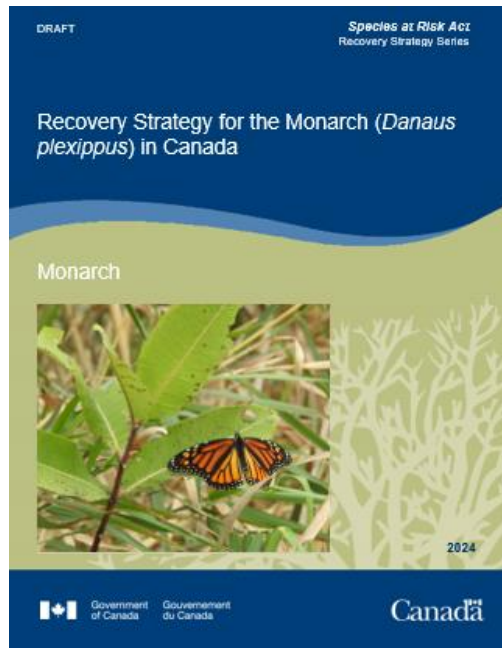
Sections of a RS:

- Species Description
- Species Population and Distribution
- Species habitat needs/Limiting factors
- Threats to the species survival / recovery
- Population and Distribution objective(s)
- Broad strategies and conservation measures
- Measuring progress
- Critical Habitat (CH) and Activities Likely to Destroy CH
- Effects the recommended actions outlined in the RS may have on the environment and other species



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A **cultural significance section** is also being drafted for inclusion



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Reason for Listing as Endangered

Species Assessment Information

- COSEWIC is an independent advisory panel that assesses the status of wildlife species at risk of extinction using a standardized process.



COSEWIC

Committee on the
Status of Endangered
Wildlife in Canada



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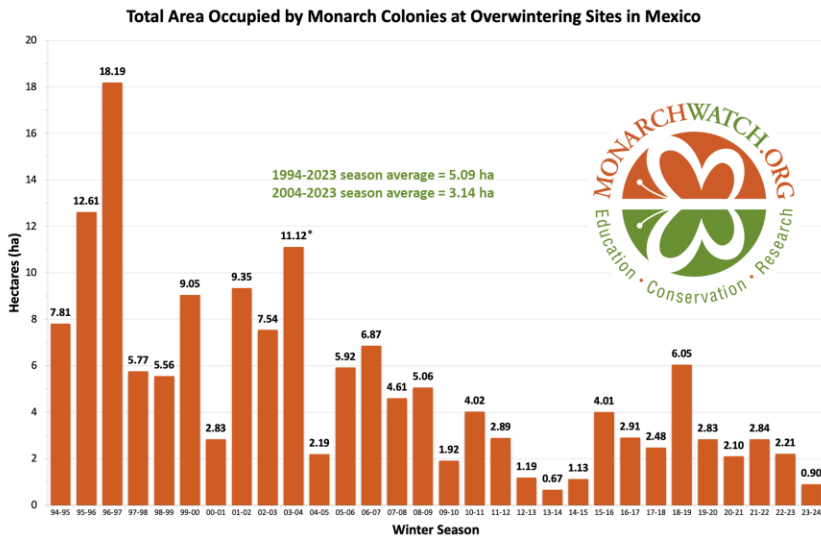
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COSEWIC Assessment Information

Population declines > 50%
between 2006-2016



Declines in habitat quality
throughout migratory route
(e.g., milkweed loss)



Threats associated with pollution
(e.g., agricultural pesticides)



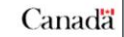
Evidence suggests **milkweed loss** is one of the key drivers of monarch population decline.





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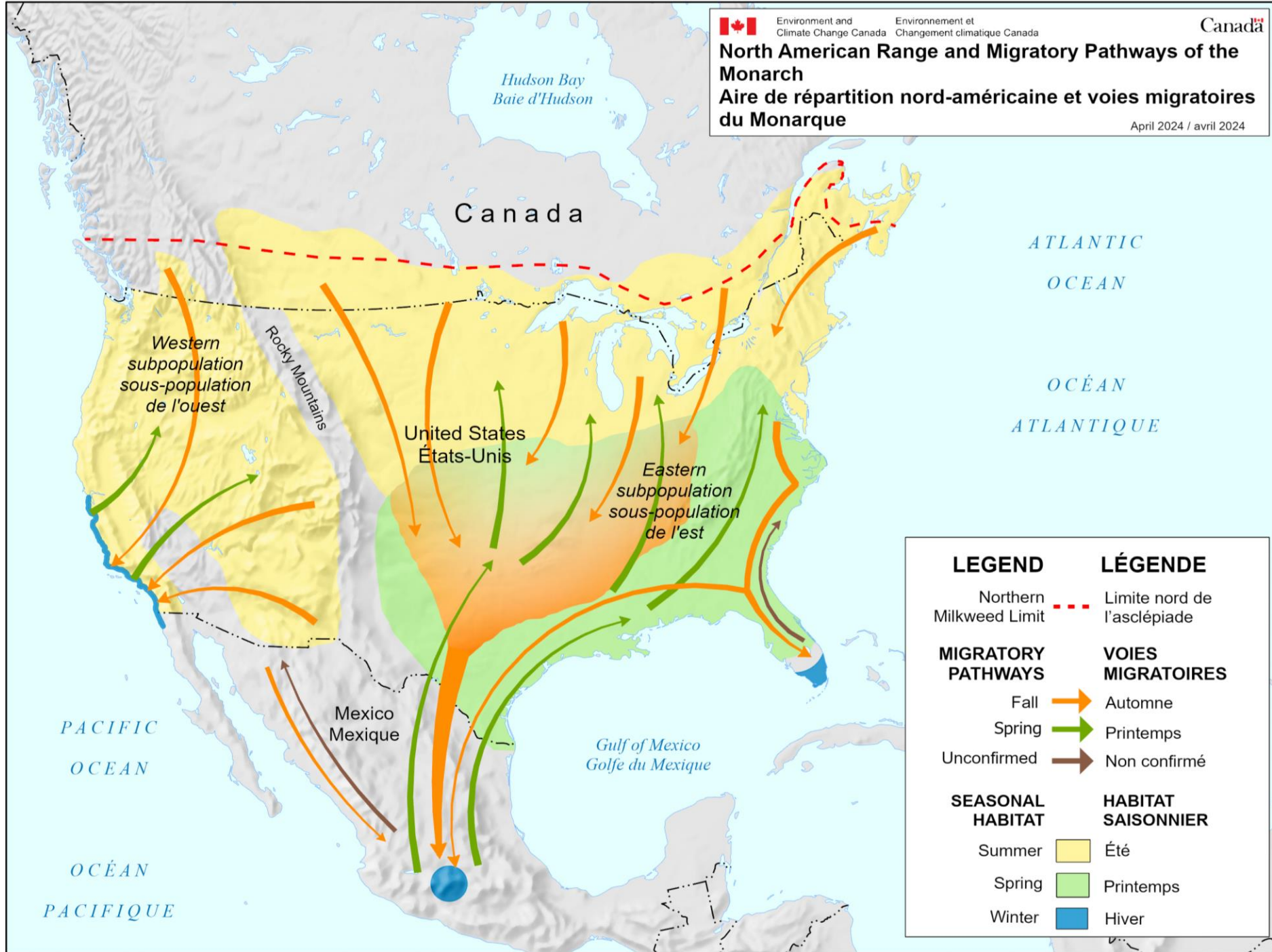
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North American Range and Migratory Pathways of the Monarch

Aire de répartition nord-américaine et voies migratoires du Monarque

April 2024 / avril 2024



LEGEND	LÉGENDE
Northern Milkweed Limit	--- Limite nord de l'asclépiade
MIGRATORY PATHWAYS	VOIES MIGRATOIRES
Fall	→ Automne
Spring	→ Printemps
Unconfirmed	→ Non confirmé
SEASONAL HABITAT	HABITAT SAISONNIER
Summer	■ Été
Spring	■ Printemps
Winter	■ Hiver

Threats to the Monarch

- Section identifies threats to the survival of the species at the population level and threats to the species' habitat.
- Threat = activities or processes that have caused, are causing, or may cause in the future the destruction, degradation, and/or impairment of the species
- Only present and future threats are considered, not historical threats.
- Threat assessment is based on credible evidence where it exists, including both western science and Indigenous Science.
- The impact of each threat was determined based on its scope, severity and timing by a panel of experts in November 2020.



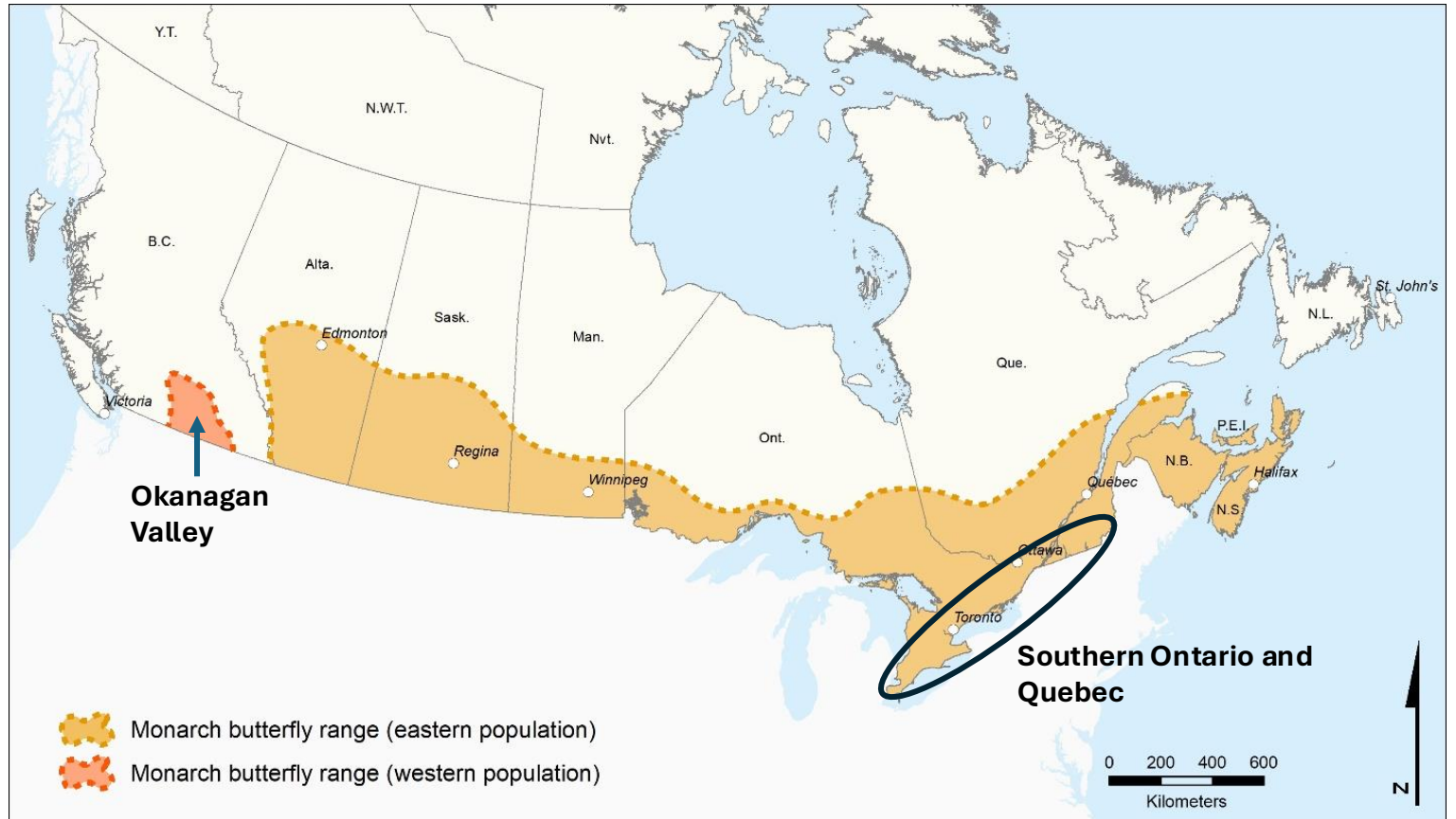
Threats to the Monarch

- The overall threat impact to Monarch was determined to be **Medium - Low**
- **24** threats were scored for Monarch:
 - High-Low: 1
 - Medium-Low: 2
 - Low: 5
 - Negligible: 7
 - Unknown: 9



Threat: Housing & Urban Areas (Low)

- Monarch populations are impacted when suitable habitat is converted for residential and commercial development.
- Greatest impact in southern Ontario and Quebec and the Okanagan Valley in British Columbia.



Map adapted from CWF 2023



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Threat: Annual & Perennial Timber Crops (Medium-Low)

- Impacts from agricultural practices and changes in those practices that are reducing available breeding habitat for Monarchs.
- Intensification of farms:
 - Conversion of open habitats to field crop monocultures
 - Increases in crop area
 - Loss of hedgerows and field margins
 - Increased rates of mowing and haying
 - Increased tilling and fertilizer use



Incorporating pollinator habitat on farms

Photo: Xerces Society Jennifer Hopwood



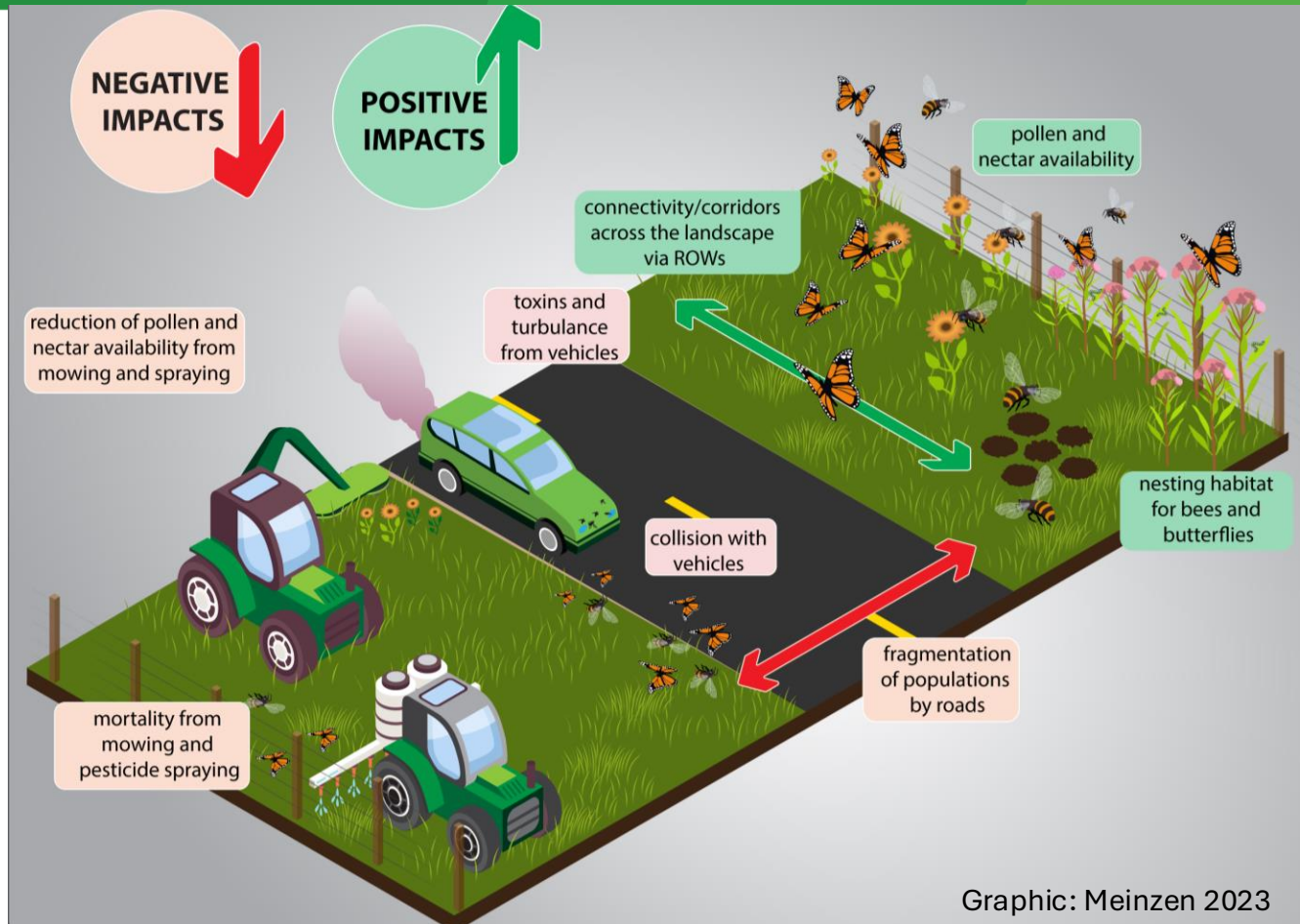
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Threat: Roads and Railroads (Medium-Low); Other Ecosystem Modifications (Unknown)



Threat: Agriculture and Forestry Effluents (Unknown)

- Impacts from pesticides to Monarch and their habitat:
- Herbicides: Loss of milkweed across breeding range is associated with the widespread switch to herbicide resistant crop varieties.
- Insecticides: Caterpillars may be especially vulnerable to insecticides as they eat the leaves of plants that they are applied to. Can result in mortality, but also have sub-lethal effects.



Illustration by Tom Kronewitter



Threat: Invasive Species (Unknown)

- The impact of this threat to the population is poorly understood.
- Monarchs have been observed accidentally laying eggs on Dog-strangling Vine, which cannot support caterpillars.
- Non-native Tropical Milkweed planted outside of its native range.
- Phragmites eliminates milkweed and native vegetation from roadsides and field margins.
- Japanese Beetle eats milkweed and may reduce availability.

Dog-strangling Vine
(Ontario Invasive Species
Centre)



Japanese Beetle
(CFIA)



Tropical Milkweed
(Xerces Society)



Phragmites
(ON Phragmites
Working Group)



Threat: Problematic Native Species; Introduced Genetic Material (Unknown)

Potential threats related to captive rearing and commercial breeding. The scale of captive rearing is unknown:

- **Problematic Native Species:** Captive reared Monarchs often have higher levels of native diseases such as *Ophyrocystis elektroscirrha* (OE) and may spread them to wild Monarchs.
- **Introduced Genetic Material:** Commercially bred individuals can differ genetically from wild individuals in ways that impact migration. (e.g., smaller wing size, failure to orient south to migrate)

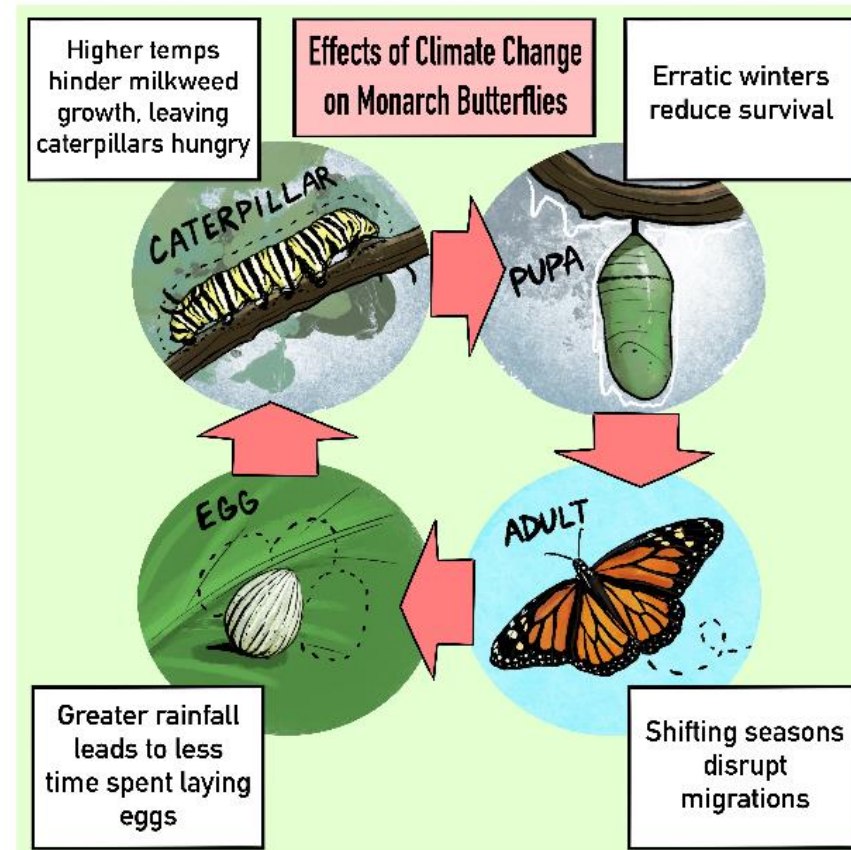


A Monarch infected with OE
Photo: Project Monarch Health



Threat: Climate Change and Severe Weather (Low)

- **Habitat Shifting:** May shift north which could result in more resources, or longer migration. May also reduce available overwintering habitat in Mexico.
- **Drought:** Impacts milkweed and flowering plant availability and quality.
- **Temperature Extremes:** Increased caterpillar mortality, decreased adult size, longer development time
- **Storms and Flooding:** Winter storms kill adults in Mexican overwintering sites and can also impact migration success.



Examples of how climate change might impact Monarchs (USGS)



Discussion

- Are any key threats to the species at the population level and/or its habitat missing?
- Do you have any other input to share on the threats section of the recovery document?
- Do you have milkweed on your lands and have you observed any threats impacting the plant?



Health Break

15-minute health break



Photo: Elisabeth Shapiro



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Population and Distribution Objective

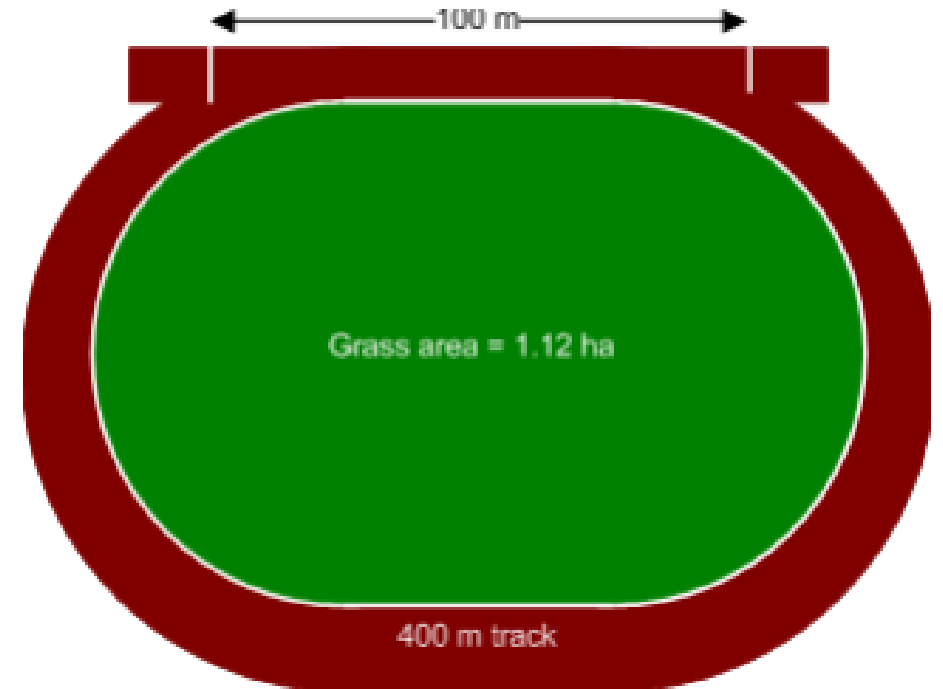
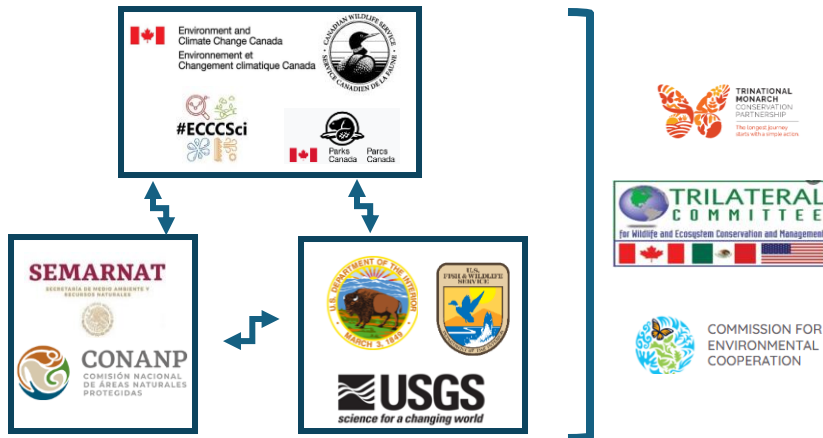
- Goal which guides the recovery of the Monarch.
- Specifies how recovery is being interpreted in the context of the recovery strategy
- Progress towards achieving recovery is measured against this objective.
- Must align with the COSEWIC reason for assessment (e.g., population declines, declines in habitat quality, and agricultural pollution) and ECCC SARA policy.



Population and Distribution Objective - Context

The governments of Canada, the U.S. and Mexico share an international recovery goal:

6 ha occupied overwintering habitat in Mexico.



Current average is
2.7 ha
(2014-2023).

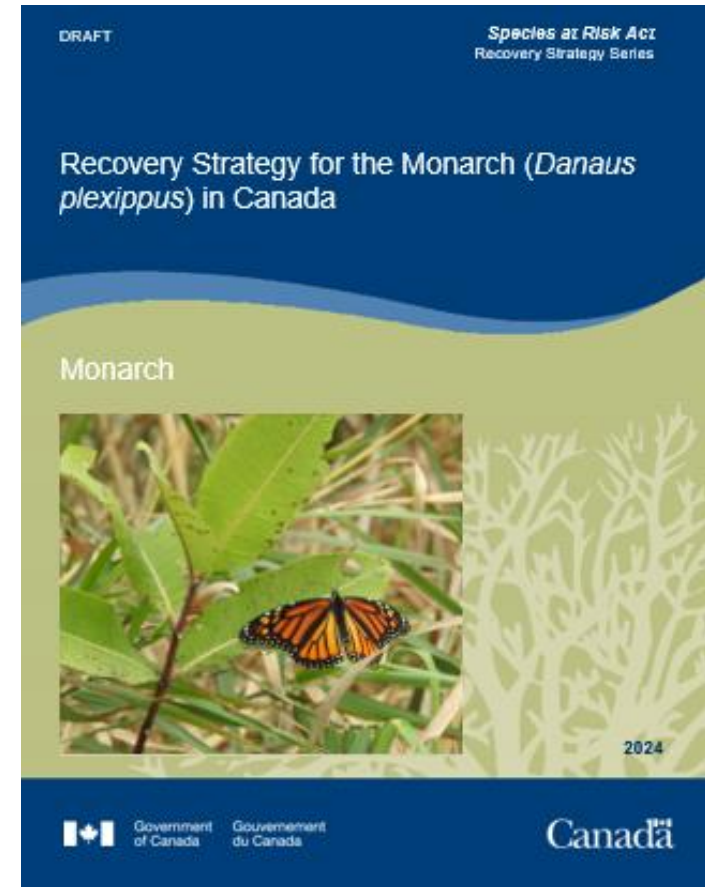
Data limitations means that we don't know a lot about the size of the Canadian Monarch population



Draft Population and Distribution Objective

The population and distribution objectives for the Monarch in Canada are:

To recover the Monarch population by where possible, improving habitat quality and ensuring an overall supply of native milkweed and other foraging resources across the species' Canadian breeding and migratory range. For the eastern subpopulation, this will support Canada's domestic proportion towards the international recovery target of 6.0 ha occupied by overwintering Monarchs.



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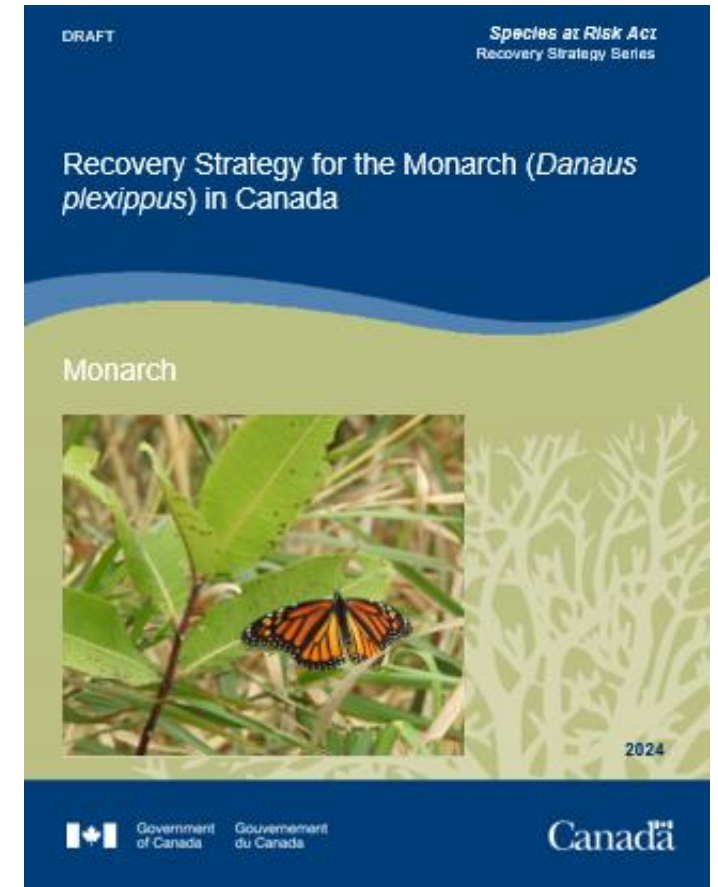
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Draft Population and Distribution Objective

Short-term statements

Within the next 10 years:

- Implement a nationwide program in Canada to monitor Monarch and milkweed abundance and distribution, track domestic Monarch population trends, assess the quality of their habitats and identify priority areas.
- Undertake stewardship activities to maintain, increase, and/or enhance the quality of habitat (e.g., planting native milkweed and other nectar sources, address human caused threats) across the eastern subpopulation's range and within priority areas identified through national monitoring.
- Maintain or increase fall migratory staging habitat availability across the eastern subpopulation's range.
- Maintain habitat in British Columbia to support western Monarchs.



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Discussion Questions

- Do you have any other comments to share on the threats section of the recovery document?
- Are any key threats to the species at population level and/or to its habitat missing?
- Do you have milkweed in your territories and have you observed any threats impacting it?



Critical Habitat

- This section outlines what habitat is identified as critical habitat for the Monarch and provides an explanation and rationale.
- It provides examples of activities that are likely to destroy critical habitat.
- It includes a “schedule of studies” – or knowledge gaps that will help to improve critical habitat identification in the future.



What is Critical Habitat?

The habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified in a recovery strategy or action plan.



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What Critical Habitat Is Not

- All individuals or residences of a species
- All suitable habitat
- Protected automatically upon being identified in a recovery strategy
- Protected only through legal regulation; voluntary preventative measures are also available



Draft Critical Habitat for the Monarch

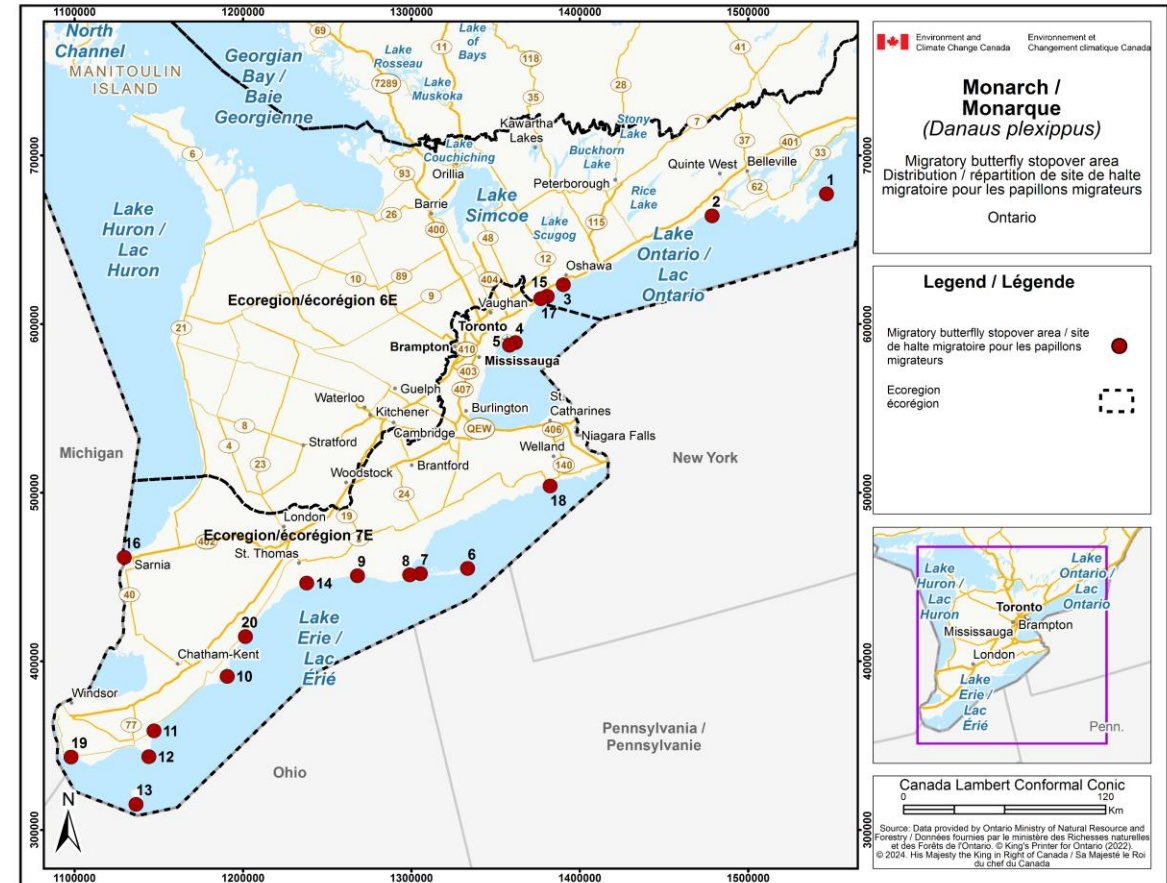
Migratory Habitat

- Monarchs congregate in large numbers along the Great Lakes shorelines during fall migration.
- These sites, or staging areas provide food and shelter during migration.
- Strong evidence of seasonal use
- Expert opinion suggests that these areas are limited and should be prioritized for protection
- Protection of these sites as critical habitat can ensure their persistence and is an important part of what Canada can do to support the migration between Canada and Mexico.



Draft Recovery Strategy- Draft Critical Habitat

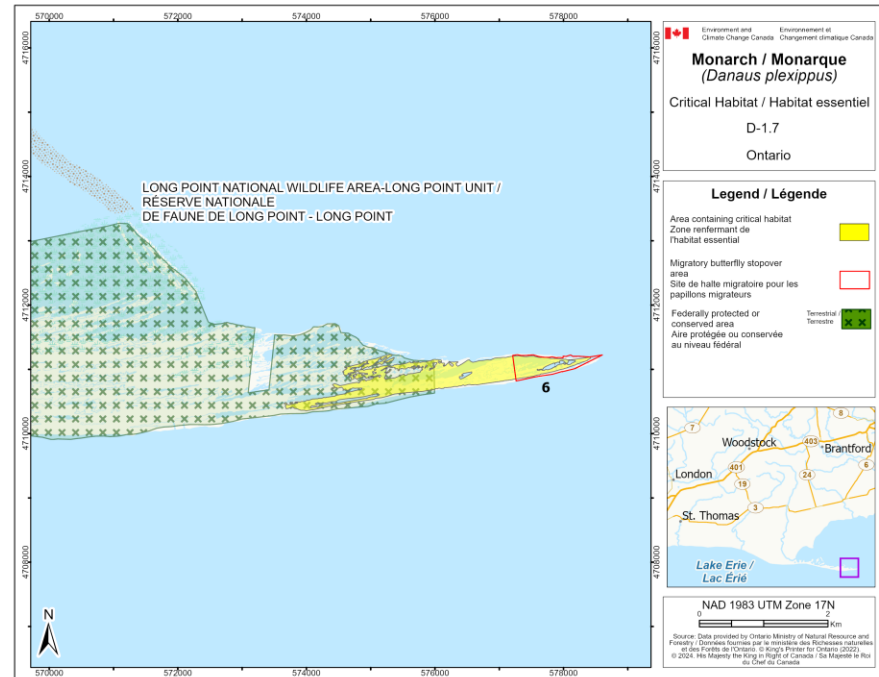
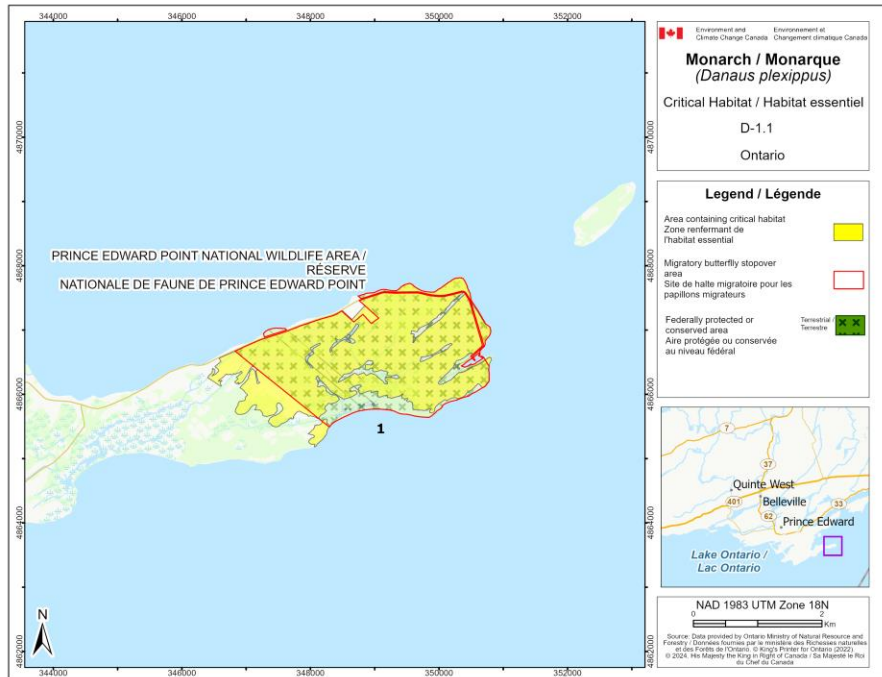
- Draft Critical Habitat for the Monarch in Canada is identified for geographic locations used by Monarchs during fall migration
- For a site to be identified as critical habitat it must meet the following criteria:
 - Where adult Monarchs have been observed at abundances of 1000 or more during a single fall migratory period (August to October in the last 20 years; AND
 - Located within 5 km of large bodies of water such as lakes Ontario, Erie, or Huron, rivers or bays, which cause significant barriers to migration AND
 - Minimum 10 ha in size; AND
 - Contain a combination of suitable habitats for roosting and foraging



Draft Critical Habitat – Results

Critical Habitat identified at **20 geographic locations in Canada (total 3981 hectares)**

- **908 ha federal land, 3072 ha non-federal land**
- All occur along the Great Lakes, in Ontario; No critical habitat identified in other provinces



CH includes the 4 protected areas internationally recognized as important migratory habitat (sister protected area network) for Monarch

ECDC (3):

- Prince Edward Point National Wildlife Area
- Long Point National Wildlife Area
- Big Creek National Wildlife Area

Parks Canada Agency (1):

- Point Pelee National Park



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Schedule of Studies

- Assess staging areas in Ontario which don't meet the current criteria to be considered for critical habitat
- Across Monarch's range in Canada, acquire and assess data to determine whether additional criteria for critical habitat can be identified



Discussion Questions

- Is there any input you would like to share on the draft critical habitat or questions that you have at this time?



Broad Strategies and Conservation Measures

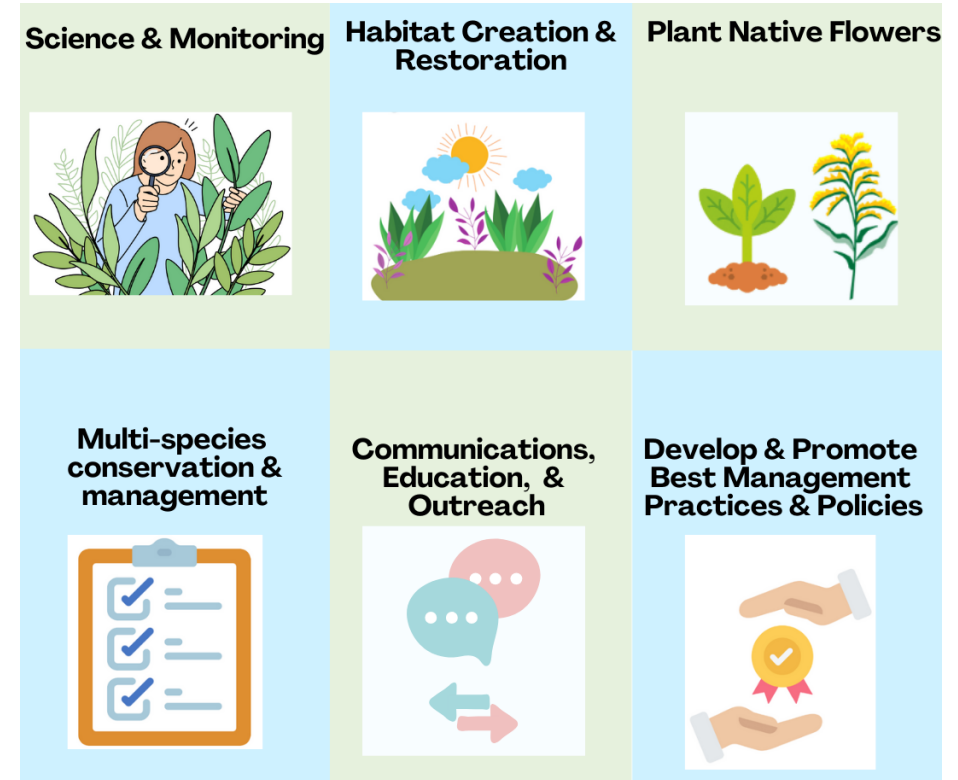
- Outlines the broad strategies to be taken to recover the Monarch in Canada.
- Aims to mitigate threats and support achieving the population and distribution objective
- Organized using a standardized system (Conservation Actions Classification)



Broad Strategies and Conservation Measures

Key Work Areas:

- Ongoing international collaboration between the governments of Canada, Mexico and U.S.
- Create and manage habitat to improve breeding habitat quality
- Remove barriers to habitat creation and management (e.g., policies, incentives, develop best management practices, improve access to regionally sourced native seeds)
- Address key threats, especially relating to pesticide use and regulation.
- Address key knowledge gaps through monitoring and research to support science-based decision making and adaptive management.



Discussion Questions

- Is there any input you would like to share on the draft broad strategies and conservation measures or questions that you have at this time?
- Would any of the Mission Monarch Expert participants like to share a story about their experience with Monarch monitoring this summer?



Cultural Significance

- An exploration of the cultural significance of the Monarch to Indigenous communities.
- Goal is to establish a foundation for the considerate and meaningful inclusion of Indigenous Science, languages, and perspectives within the recovery strategy.
- Caveats: the current draft section uses publicly available information and is limited. Requires input and collaboration to ensure meaning and inclusion.



pípałwícya
(Syilx)

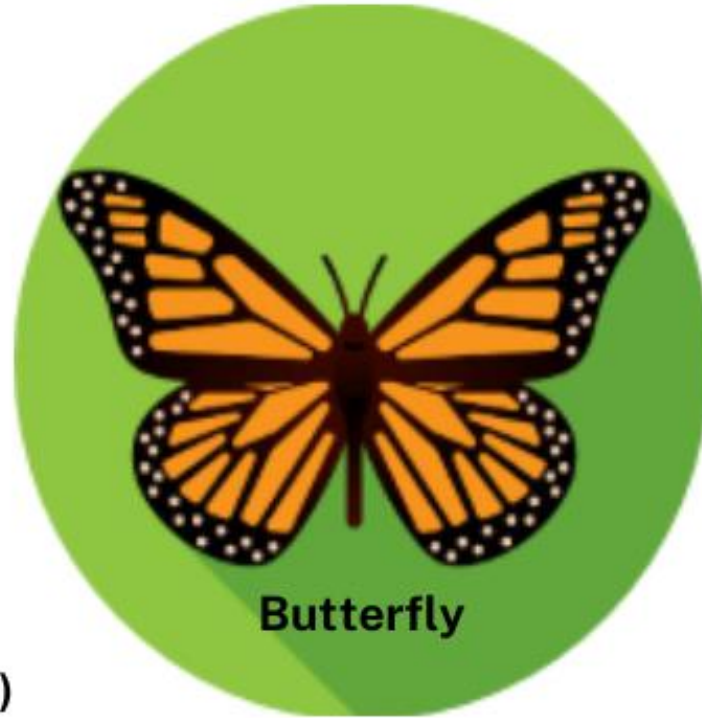
nkíkaxñl
(nłe?kepmxcin)

skw'ulwexe'
(HUL'Q'UMI'NUM')

mimikwas
(Plains Cree)

Qelaxen
(SENĆOFEN;
butterfly or
moth)

Maemaengwaen
(michif)



kamamak (large butterfly)
(nêhiyawêwin; Plains Cree)

palwícya?
(Nsilxcen)

smímeyáth
(Halq'eméylem)

mimikej
(Mi'kmaq)

kulilu
(Ktunaxa)

Pasít
(Lílwat)

memengwa
(Anishinaabemowin)

kamâmakoskâ (many
butterflies; infested
by moths or
butterflies)
(nêhiyawêwin;
Plains Cree)

Nakól,
(Northern Státimcets)

s'pećnéłp
(Showy Milkweed)
(nłe?kepmxcin)

onnikiisaikimsskaan
(Blackfoot)

tohtôsâpôwask
(nêhiyawêwin; Plains Cree)

kuçǫku
(Ktunaxa)

li fwayn foo
(michif)

Ninwish
(Anishinaabemowin)

tsyoranàtskara
(Kanyen'kéha; Mohawk)



bagizowinan, zesabiig
(Swamp Milkweed)
(Anishinaabemowin)

ininiwinzhiig
(Potawatomi Ojibwe)

ininiwinashkoon
(Manitoulin Ojibwe)

ininiwanzhiig,
zhaaboziganan
(Common Milkweed)
(Anishinaabemowin)

Cultural Significance – Discussion

Do you have any knowledge, stories, or perspectives you would like to share?



Art by: Ryan Connors




- The Monarch is a powerful cultural symbol for the Purépecha of Michoacán and the Mazahua of Estado de México in central Mexico.
- The butterfly returns during the Day of the Dead and is said to carry the souls of ancestors visiting from the afterlife.
- In the Purépecha language the Monarch is known as the ‘Harvester Butterfly’ because its arrival signals the start of the corn harvest.



We would like to hear from you...

- Capacity funding to support review of the draft recovery strategy is available through the Species at Risk Act Consultation, Cooperation and Accommodation Project (SARA-CCA). Please contact **Lynn Mallett** lmallett@yourcier.org.
- We welcome input and comments on the draft federal recovery strategy. If you have comments, we request that you please submit them by **November 01, 2024**.
- Please connect with your regional consultation contact if you have any questions or would like information on where to send comments in your region. Contact information available on last slide.



CWS Regions with Monarch	Contact Information	Contact – <i>putting a face to the name</i>
<p>Pacific</p>	<p>Arran Gregory E-mail: Arran.Gregory@ec.gc.ca</p>	
<p>Prairie</p>	<p>Kaytlyn Burrows Kalenchuk E-mail: Kaytlyn.BurrowsKalenchuk@ec.gc.ca Where to send comments on the draft Monarch Recovery Strategy in Prairie region: SARA.PNR@ec.gc.ca</p>	
<p>Ontario</p>	<p>Chris Rohe E-mail: Christina.Rohe@ec.gc.ca Where to send comments on the draft Monarch Recovery Strategy in Ontario region: SpeciesatRisk.Ontario@ec.gc.ca</p>	
<p>Québec</p>	<p>Marie-Hélène Dickey E-mail: Marie-Helene.Dickey@ec.gc.ca</p>	
<p>Atlantic</p>	<p>Brigid Prouse E-mail: Brigid.Prouse@ec.gc.ca</p>	