

Wildlife Habitat Evaluation Guide Datasheet for the Monarch Butterfly Midwest Version 1.1

Background: This Wildlife Habitat Evaluation Guide (WHEG) is based on the habitat requirements of the monarch butterfly (*Danaus plexippus*) in the Midwest region. For more detailed information refer to the instructions entitled, "USDA NRCS MONARCH BUTTERFLY WILDLIFE HABITAT EVALUATION GUIDE AND DECISION SUPPORT TOOL: MIDWEST EDITION."

General Instructions: Each assessment area will be evaluated on a separate datasheet. If a factor is not applicable, do not score that factor. While every factor may not fit every situation, the WHEG should be completed by placing the corresponding score in the "Benchmark" column which most closely represents that factor. Planners should carefully assess each factor prior to assigning a score to a particular situation. This score represents the habitat in its current, untreated state. **Interpolate** between values if necessary. All scores are for current year (previous 12 months) unless otherwise stated. The "Planned" column is the expected score when the conservation plan or practice is mature, which will vary in time. If a factor is scored as N/A do not count that factor in the final total. In order to achieve the RMS planning criteria ≥ 0.50 , the "Planned" rating must be good or greater.

Owner/Operator:		Field Office:	
Identification # (farm, tract, field #, etc as required):			
NRCS Planner and/or Consulting Biologist (NRCS or Partner):		Date:	
<input type="checkbox"/> Check this box if the prescribed belt transect and plots were not used to complete vegetation sampling, and briefly explain reason and method used in the notes section below.			
Assessment Area:	Acres:	Ecological Site Description (if available):	
ROP Label	ROP Location (Latitude)	ROP Location (Longitude)	Compass Bearing:
ROP Label	ROP Location (Latitude)	ROP Location (Longitude)	Compass Bearing:
ROP Label	ROP Location (Latitude)	ROP Location (Longitude)	Compass Bearing:
Notes:			

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

STEP 2: RAPID SCREENING OF LOW-VALUE PLANT COMMUNITIES

Apply this step to assess sites with obvious, low monarch habitat value. If habitat does not meet one of these plant communities, go to Step 3.

Select Appropriate Monarch Plant Community Type for AA	Benchmark Rating	Selected Alternatives ¹ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)	Planned Rating	Applied Rating
<input type="checkbox"/> Crop	Poor	<input type="checkbox"/> Decision maker will convert all or a substantial portion of AA to productive monarch breeding habitat using (327), (386) or (390). <i>In addition</i> , the decision maker will implement a 125-foot wide pesticide-free buffer ¹ to benefit the species.	Meets PC if Good or Excellent	
<input type="checkbox"/> Monotypic Grasses	Poor	<input type="checkbox"/> Decision maker will convert all or a substantial portion of AA to productive monarch breeding habitat using (327), (386) or (390); and implement (315), (338) or (647), as appropriate. <i>In addition</i> , the decision maker will implement a 125-foot wide pesticide-free buffer ¹ to benefit the species.		
<input type="checkbox"/> Brush	Poor	<input type="checkbox"/> Decision maker will control brush species by implementing Conservation Practice Standard (314) and convert all or a substantial portion of AA to productive monarch breeding habitat using (327), (386) or (390). <i>In addition</i> , the decision maker will implement a 125-foot wide pesticide-free buffer ¹ to benefit the species.		

¹ Decision makers are greatly encouraged to implement Integrated Pest Management (595) or selected elements thereof to prevent or mitigate on- and off-site pesticide risk (i.e., lethal or sub-lethal exposure) to all monarch life stages. Specifically, to reduce or eliminate direct contact, or indirect exposure from ingestion of treated milkweed or nectar plants. In lieu of implementing the 595 standard, the decision maker may opt to implement a *125-foot wide pesticide-free buffer* around the entire AA or area encompassing all implemented practices. *Note: These restrictions do not apply to activities intended to establish or maintain the AA as productive monarch breeding habitat.*

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

STEP 3: DETERMINE BENCHMARK CONDITIONS FOR OTHER PLANT COMMUNITIES.

Apply this step only to monarch plant community type, *OTHER PRIMARILY HERBACEOUS COMMUNITIES*.

V^{IR}: Insecticide Risk condition²	Benchmark Score	Selected Alternatives¹ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)	Planned Score	Applied Score
AA is treated with insecticides (0.00)		<input type="checkbox"/> Decision maker will implement a 125-foot wide pesticide-free buffer ¹ to benefit the species. <input type="checkbox"/> Decision maker will continue with current management practices.		
A portion of the AA is located within 125 feet of areas treated with insecticides (0.30)				
Neither of the above (1.00)				
V^{WMR}: Weed Management Risk Condition	Benchmark Score	Selected Alternatives¹ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)	Planned Score	Applied Score
AA is treated with herbicides (0.10)		<input type="checkbox"/> Decision maker will implement a 125-foot wide pesticide-free buffer ¹ <input type="checkbox"/> Decision maker will continue with current management practices.		
A portion of the AA is located within 125 feet of areas treated with herbicides (0.30)				
Neither of the above; however, AA is mowed inconsistent with the Monarch Habitat Management Guidelines (0.30)				
None of the above (1.00)				
<ul style="list-style-type: none"> • BENCHMARK, PLANNED OR APPLIED SCORING: <i>Do not consider Individual Plant Treatments (IPT) for plants deemed undesirable (e.g., spot treatment of brush, noxious weeds, invasive species and other undesirable plant species).</i> • PLANNED OR APPLIED SCORING: <i>Do not consider treatments, such as NCP 314 – Brush Management or 315 - Herbaceous Weed Control, when required for establishment or enhancement of productive monarch breeding habitat.</i> 				

² V is used for the term “variable”. These are variables used to calculate the final score for the assessment area.

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

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Transect Data	ROP label	Number of Stems	ROP label	Number of Stems	ROP label	Number of Stems	Average per Acre
V^{MWD}: Average milkweed stem density per acre	Benchmark Score	Selected Alternatives³ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)			Planned Score	Applied Score	
Milkweed absent in belt transects and the AA (0.10)		<input type="checkbox"/> Decision maker will apply Conservation Practice Standard (327) to increase milkweed densities ³ .					
Milkweed absent in belt transects; however, individual milkweed stems present in the AA (0.15)							
10 – 200 (0.30)		<input type="checkbox"/> If the score is between 0.30– 0.50, the decision maker will implement one or more of the following Conservation Practice Standards to <i>increase milkweed densities</i> as the targeted condition ³ and with <i>improving monarch breeding success</i> as the stated purpose: (315), (327), (338), and/or (647).					
201 – 300 (0.50)							
301 – 500 (0.80)		<input type="checkbox"/> Decision maker will implement Conservation Practice Standards (338) and/or (647) to maintain milkweed densities ³ .					
> 500 (1.00)							

³ An adequate abundance of milkweed plants are essential to produce new monarch butterflies because milkweed (*Asclepias*) are the host plants for monarch larvae, while suitable nectar plants are the primary food sources for adult monarchs. Both milkweed and nectar plants should be considered in most circumstances.

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

STEP 3: DETERMINE BENCHMARK CONDITIONS FOR OTHER PLANT COMMUNITIES.

Apply this step only to monarch plant community type, *OTHER PRIMARILY HERBACEOUS COMMUNITIES*.

Plot Data (forb cover)	ROP			ROP			ROP			AVG
	P 1	P 2	P 3	P 1	P 2	P 3	P 1	P 2	P 3	
V ^{FC} : Average monarch nectaring forb cover within the AA	Benchmark Score	Selected Alternatives ⁴ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)				Planned Score	Applied Score			
Absent ($\leq 2\%$) (0.10)		<input type="checkbox"/> Decision maker will apply Conservation Practice Standard (327) to increase monarch nectaring forb cover ⁴ .								
Rare (2.1-5.0%) (0.20)										
Uncommon (5.1 – 15%) (0.30)		<input type="checkbox"/> If the score is between 0.30 – 0.50, the decision maker will implement one or more of the following Conservation Practice Standards to <i>increase monarch nectaring forb cover, and improve adult-monarch foraging habitat</i> as the targeted conditions ⁴ with <i>monarch breeding and foraging habitat</i> as the stated purpose: (315) or (327) or (338) or (647).								
Moderately abundant (15.1 – 25%) (0.60)		<input type="checkbox"/> Decision maker will implement Conservation Practice Standards (338) and/or (647) to maintain or enhance current conditions ⁴ .								
Abundant (25.1% – 35.0%) (0.80)										
Very Abundant (> 35%) (1.00)										

⁴ Nectar sources are necessary for adult monarch butterflies; however, suitable breeding habitat would also include milkweed in sufficient densities.

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

STEP 3: DETERMINE BENCHMARK CONDITIONS FOR OTHER PLANT COMMUNITIES.

Apply this step only to monarch plant community type, *OTHER PRIMARILY HERBACEOUS COMMUNITIES*.

Plot Data (forb richness)	ROP			ROP			ROP			AVG
	P 1	P 2	P 3	P 1	P 2	P 3	P 1	P 2	P 3	
V^{FR}: Average number of monarch nectaring forb-species within the AA.	Benchmark Score	Selected Alternatives⁵ (STEP 4) (Unless selected, label AA as <i>OUT</i> on the project map)							Planned Score	Applied Score
< 1 (0.10)		<input type="checkbox"/> Decision maker will implement Conservation Practice Standard (327) to increase monarch nectaring, forb-species richness ⁵ .								
1 -2 (0.30)		<input type="checkbox"/> If the score is between 0.30 – 0.50, the decision maker will implement one or more of the following Conservation Practice Standards to <i>increase monarch nectaring, forb-species richness, and improve adult-monarch foraging habitat</i> as the targeted conditions ⁵ , with <i>monarch breeding and foraging habitat</i> as the stated purpose: (315) or (327) or (338) or (647).								
2.1 – 3.5 (0.50)										
> 3.5 (0.80)		<input type="checkbox"/> Decision maker will use Conservation Practice Standards (338) and/or (647) to maintain or enhance current conditions ⁵ .								
> 3.5 and two or more species of <i>Asclepias</i> represented in V ^{MWD} (1.00)										

⁵ Nectar sources are necessary for adult monarch butterflies; however, suitable breeding habitat would also include milkweed in sufficient densities.

Monarch Butterfly Wildlife Habitat Evaluation Guide, Midwest Version 1.1

STEP 3: DETERMINE BENCHMARK CONDITIONS FOR OTHER PLANT COMMUNITIES Apply this step only to monarch plant community type, *OTHER PRIMARILY HERBACEOUS COMMUNITIES*.

- i. Apply the following formula to determine Monarch Habitat Condition Rating (benchmark, planned, or applied rating).

$$V^{IR} \left[\frac{(V^{WMR}) + 5(V^{MWD}) + (V^{FC}) + (V^{FR})}{8} \right]$$

- ii. Determine benchmark monarch habitat condition rating and end the assessment of current conditions.

Monarch Habitat Condition Score Ranges (and Associated Ratings)	Benchmark Rating
0.00 – 0.25 (<i>poor</i>)	
0.26 – 0.49 (<i>fair</i>)	
0.50 – 0.74 (<i>good</i>)	
0.75 – 1.00 (<i>excellent</i>)	

STEP 4: EVALUATE ALTERNATIVES AND DETERMINE PLANNED CONDITION

Use the appropriate tables in STEP 3 and scoring table above to complete this step.

PLANNED HABITAT CONDITION RATING	
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STEP 5: DOCUMENT DECISIONS IN CLIENT’S CONSERVATION PLAN.

STEP 6: EVALUATE PLAN IMPLEMENTATION (2 to 3 years post-establishment)

Use the appropriate tables in STEP 3 and scoring table above to complete this step after the conservation plan has been established.

APPLIED HABITAT CONDITION RATING		DATE	
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Factor(s)	<p style="text-align: center;">Conservation Practices for Resource Concerns <i>For projects rating fair or poor, consider the following conservation practices</i></p> <p>The following practices have been reviewed and approved by the NRCS Monarch Butterfly Habitat Development Project Working Group.</p>
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	<p><u>CORE NATIONAL CONSERVATION PRACTICES</u></p> <p>314 – Brush management - The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.</p> <p>327 – Conservation Cover - Establishing and maintaining permanent vegetative cover.</p> <p>338 – Prescribed Burning - Controlled fire applied to a predetermined area.</p> <p>386 – Field Border - A strip of permanent vegetation established at the edge or around the perimeter of a field.</p> <p>390 – Riparian Herbaceous Cover – Restore, improve or maintain desired plant community within the transition zone between upland and aquatic habitats</p> <p>511 – Forage Harvest Management – The timely cutting and removal of forages to maintain and/or improve wildlife habitat and desired plant communities.</p> <p>645 – Upland Wildlife Habitat Management - Provide and manage upland habitats and connectivity within the landscape for wildlife.</p> <p>647 – Early Successional Habitat Management/Development - Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.</p> <p><u>SUPPORTING NATIONAL CONSERVATION PRACTICES</u></p> <p>315 -- Herbaceous Weed Control - The removal or control of herbaceous weeds including invasive, noxious and prohibited plants.</p> <p>382 – Fence – To provide a means to control of animals and people including vehicles.</p> <p>394 – Fire Break – Permanent or temporary strip of vegetation to reduce the spread of wildfire and contain prescribed burns.</p> <p>595 – Integrated Pest Management - Prevent or mitigate off-site pesticide risks to soil, water, air, plants, animals and humans from drift and volatilization losses.</p> <p>644 -- Wetland Wildlife Habitat Management -Retaining, developing or managing wetland habitat for wetland wildlife.</p>
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