

## Wildlife Habitat Evaluation Guide Datasheet for the Monarch Butterfly: Western Coastal Plain

Owner/Operator:		Field Office:	
NRCS Planner and/or Consulting Biologist:		Date:	
Assessment Area:	Acres:	Ecological Site:	

RAPID SCREENING: HABITAT SCREENING OF LOW VALUE PLANT COMMUNITIES				
Select Appropriate Monarch Plant Community Type for AA	Benchmark Rating	Management Alternatives (Unless selected, label AA as <i>OUT</i> on the project map)	Planned Rating	Applied Rating
<input type="checkbox"/> <b>Crop</b> <i>Area is planted annually to produce a crop</i>	<b>Poor</b>	Using habitat and scoring criteria in the remaining sections of this Monarch WHEG, decision maker will convert all or part of AA to monarch friendly habitat using Conservation Practice(s) Conservation Cover (327), Field Border (386), Riparian Herbaceous Buffer (390) or Upland Wildlife Habitat (645), with monarch habitat as the target condition.  -----And -----  If insecticides and herbicides remain a risk, they will be applied in a manner that results in a minimum score of 0.5 for the insecticide risk variable ( $V^{IR}$ ) and the herbicide risk score ( $V^{HR}$ ).	<b>Good or Excellent</b>	
<input type="checkbox"/> <b>Intensively managed hay</b> <i>Hayland that is commonly fertilized, mowed, and/or treated with herbicide resulting in low forb richness. Grasses often introduced.</i>	<b>Poor</b>		<b>Good or Excellent</b>	
<input type="checkbox"/> <b>Intensively managed pasture</b> <i>Grassland that is commonly fertilized, mowed, and/or treated with herbicide resulting in low forb richness. Grasses often introduced.</i>	<b>Poor</b>		<b>Good or Excellent</b>	
<input type="checkbox"/> <b>Invasive species or woody mid-story dominate</b> <i>Invasive species or woody mid-story at a density such that monarch habitat is mostly absent.</i>	<b>Poor</b>		<b>Good or Excellent</b>	
<input type="checkbox"/> <b>Other herbaceous plant communities</b> <i>Pasture or range, ungrazed grassland, unmanaged hayland, associated agricultural lands, or non-commercial forest.</i>	<b>Proceed to STANDARD APPROACH (page 2): SAMPLE ASSESSMENT AREA AND DETERMINE BENCHMARK MONARCH HABITAT CONDITION RATING.</b>			

**STANDARD APPROACH: DETERMINE MONARCH CONDITION RATINGS FOR OTHER HERBACEOUS COMMUNITIES**

Use this Standard Approach for habitat assessment and conservation planning only if the Benchmark Condition could not be assessed as POOR with the Rapid Screening on page 1.

<b>V<sup>HR</sup>: Herbicide (Weed Management) Risk Condition<sup>1</sup></b>	<b>Benchmark Score</b>	<b>Management Alternatives</b> (Unless selected, label AA as <i>OUT</i> on the project map)	<b>Planned Score</b>	<b>Applied Score</b>
AA is treated with or subject to drift from a non-selective and or broad spectrum herbicides	<b>0.1</b>	Decision maker will consider and/or implement mitigation measures for on-site and offsite herbicide risks to monarch habitat. The Pest Management Conservation Practice (595) is an option.		
AA is treated with or subject to drift from select herbicide that does not affect milkweed or nectar sources.	<b>0.5</b>			
None of the above	<b>1.0</b>	Decision maker will continue with current management practices.		

- *This question relates to ongoing herbicide applications that occur on a regular cycle (e.g. annually, biannually, every 5-10 years). Do not consider an assessment area as “treated with herbicides” if the application of herbicides was part of a past weed control program that has been discontinued (no treatment in recent years, or anticipated in the future).*
- *Do not consider Individual Plant Treatments (IPT) for plants deemed undesirable (e.g., spot treatment of brush, noxious weeds, or invasive species).*
- *Under the Planned or Applied scores, do not consider herbicide treatments that are applied for the purpose of enhancing or establishing milkweed or monarch nectaring habitat.*

<sup>1</sup> V is used for the term “variable”. These are variables used to calculate the final score for the assessment area.

**STANDARD APPROACH: DETERMINE MONARCH CONDITION RATINGS FOR OTHER HERBACEOUS COMMUNITIES**

<b>V<sup>IR</sup>: Insecticide Risk condition</b>	<b>Benchmark Score</b>	<b>Planned Score</b>	<b>Applied Score</b>
<p>The following is met:                      A portion of the AA is treated with insecticides (including insecticidal seed treatments). (Stop the assessment and provide an overall rating of <i>poor</i> for the AA, no matter quality of habitat.)</p>			
<p>Both of the following are met:                      i. A portion of the AA is located within 100' of areas treated with insecticides, AND                      ii. No insecticide drift techniques can be assured.</p>	<b>0.20</b>		
<p>Both of the following are met:                      i. A portion of the AA is located within 100' of areas treated with insecticides (e.g. cropland), AND                      ii. The AA is either (a) located where it is not downwind of the areas treated with insecticides, based on prevailing wind direction during the growing season or (b) insecticides are not applied when wind is blowing towards the AA, including situations when insecticidal seed-treated crops are being planted.</p> <p>If &gt;25% of AA within 100' of treated areas, score is 0.50                      If &lt;25% of AA within 100' of treated areas. score is 0.70</p>	<b>0.50 or 0.70</b>		
<p>The AA meets conditions described for a score of 0.50 or 0.70 (above). Additionally, off-site drift prevention or mitigation practices and/or techniques from Table 3 of TN 190-AGR-9 are implemented to meet a target index score of at least 20.                      If &gt;25% of AA within 100' of treated areas, score is 0.80                      If &lt;25% of AA within 100' of treated areas. score is 0.90</p>	<b>0.80 or 0.90</b>		
<p>AA is greater than 100' from any area treated with insecticides (including seed treatment).</p>	<b>1.00</b>		

**STANDARD APPROACH: CONTINUED**

**Vegetative Survey:** Locate three Representative Observation Points (ROP) within each Assessment Area (AA), if size allows, and within each stretch a tape 72.6 foot (note location of starting point and direction below). Tally milkweed stems rooted within 3 feet of each side of the tape along the entire length (72.6' x 6' belt-transect). Within three 6'x6' quadrats placed at the beginning of the 10, 40 and 60 foot marks on the tape, estimate percent cover and numbers of species of preferred monarch nectaring plants (refer to the monarch plant list and/or identification guide for preferred species).

Direction/location:	ROP 1 :		Lat:		ROP 2 :		Lat:		ROP 3 :		Lat:		Avg.
	Dir:	Long:	Dir:	Long:	Dir:	Long:	Dir:	Long:					
no. milkweed stems:	Belt-transect #1				Belt-transect #2				Belt-transect #3				
cover (%):	Q		Q		Q		Q		Q		Q		
richness (no. spp.)	10		40		60		10		40		60		

V <sup>MD</sup> : Average milkweed stem density per acre	Benchmark Score	Management Alternatives	Planned Score	Applied Score
Milkweed absent from belt transects and the AA .	<b>0.0</b>	Decision maker can plant milkweed with the use of Conservation Practice(s); Conservation Cover (327), Range Planting (550), Riparian Herbaceous Buffer (390) and/or Field Border (387).		
Milkweed absent in belt transects; however, individual milkweed stems present in the AA.	<b>0.2</b>			
1 – 250 stems per acre (0 to 2.5 stems per transect)	<b>0.3</b>	Decision maker can use Conservation Practice(s); Early Successional Habitat Management (647) and/or Prescribed Burning (338) to <u>improve</u> milkweed densities.		
251 – 500 stems per acre (2.5 to 5 stems per transect)	<b>0.5</b>			
501 – 2000 stems per acre (5 to 20 stems per transect)	<b>0.7</b>	Decision maker can use Conservation Practice(s); Early Successional Habitat Management (647) and/or Prescribed Burning (338) to <u>maintain</u> milkweed densities.		
> 2000 stems per acre (>20 stems per transect).	<b>1.0</b>			

**STANDARD APPROACH: CONTINUED**

<b>V<sup>FC</sup>: Average monarch nectaring forb cover within the AA</b>	<b>Benchmark Score</b>	<b>Management Alternatives</b>	<b>Planned Score</b>	<b>Applied Score</b>
< 1 % average cover	<b>0.1</b>	Decision maker can plant appropriate nectar species with the use of Conservation Cover (327), Range Planting (550), or other core conservation practice.  Decision maker can use Conservation Practice(s); Early Successional Habitat Management (647), Prescribed Burning (338) and/or plantings (327, 550) to <u>improve</u> current conditions.  Use Conservation Practice(s); Early Successional Habitat Management (647) or Prescribed Burning (338) to <u>maintain</u> or <u>enhance</u> current conditions.		
1.0 – 4.0 % average cover	<b>0.2</b>			
4.1 – 7.5 % average cover	<b>0.6</b>			
7.6 – 10.0 % average cover	<b>0.8</b>			
> 10 % average cover	<b>1.0</b>			

<b>V<sup>FR</sup>: Average number of monarch nectaring forb species per transect</b>	<b>Benchmark Score</b>	<b>Management Alternatives</b>	<b>Planned Score</b>	<b>Applied Score</b>
< 2 average number of monarch nectaring forb species	<b>0.1</b>	Decision maker can plant appropriate nectar species with the use of Conservation Cover (327) or Range Planting (550).  Decision maker can use Conservation Practice(s); Prescribed Burning (338), Early Successional Habitat Management (647) and/or plantings to <u>improve</u> current conditions.  Use Conservation Practice(s); Early Successional Habitat Management (647) or Prescribed Burning (338) to <u>maintain</u> or <u>enhance</u> current conditions.		
2 – 4 average number of monarch nectaring forb species	<b>0.5</b>			
> 4 average number of monarch nectaring forb species	<b>1.0</b>			

**Notes:**

**STANDARD APPROACH: CONTINUED**

Apply the following formulas to determine Monarch Habitat Condition Scores (benchmark, planned, applied rating) and rate habitat according to the chart. Scores may be improved by applying management alternatives as outlined in the individual Variable scoring tables above. The planned cumulative score must be "Excellent" to meet planning criteria AND neither the breeding nor nectaring score can be less than "Good" to meet planning criteria.

**Habitat Condition Ratings**

0.00 – 0.25 = Poor

0.26 – 0.49 = Fair

0.50 – 0.74 = Good

0.75 – 1.00 = Excellent

**Monarch Breeding Habitat Condition Score**

Formula	Benchmark Rating	Planned Rating	Applied Rating
$(V^{IR}) \frac{V^{HR} + 3V^{MD}}{4}$	$(\ ) \frac{\_ + 3(\ )}{4} =$ Rating = _____	$(\ ) \frac{\_ + 3(\ )}{4} =$ Rating = _____	$(\ ) \frac{\_ + 3(\ )}{4} =$ Rating = _____

**Monarch Nectaring Habitat Condition Score**

Formula	Benchmark Rating	Planned Rating	Applied Rating
$(V^{IR}) \frac{V^{HR} + 3V^{FC} + V^{FR}}{5}$	$(\ ) \frac{\_ + 3(\ ) + \_}{5} =$ Rating = _____	$(\ ) \frac{\_ + 3(\ ) + \_}{5} =$ Rating = _____	$(\ ) \frac{\_ + 3(\ ) + \_}{5} =$ Rating = _____

**Cumulative Monarch Habitat Condition Score**

Formula	Benchmark Rating	Planned Rating	Applied Rating
$\frac{\text{Breeding Score} + \text{Nectaring Score}}{2}$	$\frac{\_ + \_}{2} =$ Rating = _____	$\frac{\_ + \_}{2} =$ Rating = _____	$\frac{\_ + \_}{2} =$ Rating = _____

<p><b>Factor(s)</b></p>	<p style="text-align: center;"><b>Conservation Practices for Resource Concerns</b></p> <p><i>Habitat score of 0.5 or less, 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> <p><b>CORE NATIONAL CONSERVATION PRACTICES</b></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>528 – Prescribed Grazing - Apply grazing to meet a vegetative objective.</p> <p>550 – Range Planting - Establishing and maintaining permanent vegetative cover to support grazing and wildlife.</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><b>FACILITATIVE NATIONAL CONSERVATION PRACTICES</b></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.</p> <p>394 – Fire Break - Permanent or temporary strip of vegetation to reduce the spread of wildfire and contain prescribed burns.</p> <p>516 – Livestock Pipeline - Provide livestock a source of water to facilitate Prescribed Grazing.</p> <p>533 – Pumping Plant - Provide livestock a source of water to facilitate Prescribed Grazing.</p> <p>561 – Heavy Use Area Protection - Provide stable, non-eroding surface to protect water source for livestock to facilitate Prescribed Grazing.</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>614 – Watering Facility - Provide livestock a source of water to facilitate Prescribed Grazing.</p> <p>642 – Water Well – Provide livestock a source of water to facilitate Prescribed Grazing.</p> <p>644 – Wetland Wildlife Habitat Management - Retaining, developing or managing wetland habitat for wetland wildlife.</p> <p>666 – Forest Stand Improvement - The manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation.</p>
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