

Western Monarch Overwintering Habitat Assessment (Long Form)

Please fill out as much information on this form as you can, but feel free to skip any field for which you do not have the right equipment or you are uncertain about the answer. Refer to the document *Western Monarch Overwintering Habitat Assessment Instructions* for more information about how to fill out this data sheet.

General Site Information

Date _____ Site Name _____ Site ID # _____
County _____ Property Owner _____
Observers _____ Start Time _____ End Time _____
Current Land Use(s) (e.g., park, residential, agricultural, industrial, golf course) _____

Location Information

Site Location/Directions _____

Please provide GPS coordinates of the grove's boundaries. If the grove is an odd-shaped polygon or many cluster trees, please provide additional GPS points as needed, draw a map on the back of this sheet, or make a shapefile/kmz using Google Earth or GIS products.

GPS Point of Grove's Northern corner: _____ N _____ W Accuracy (ft): _____
GPS Point of Grove's Eastern corner: _____ N _____ W Accuracy (ft): _____
GPS Point of Grove's Western corner: _____ N _____ W Accuracy (ft): _____
GPS Point of Grove's Southern corner: _____ N _____ W Accuracy (ft): _____
GPS Point of Cluster tree #1: _____ N _____ W Accuracy (ft): _____
GPS Point of Cluster tree #2: _____ N _____ W Accuracy (ft): _____

Datum of GPS Unit: __ NAD27 __ NAD83 __ WGS84 __ Smartphone __ Unknown __

Weather and Microclimate

Cloud/fog cover: _____ %
Precipitation: none / drizzle / rain / downpour

Microclimate INSIDE the grove, near the cluster trees

Temperature (°F or C): _____
Relative Humidity: _____
Average wind speed (mph, m/s or bft) _____ Maximum wind speed (mph, m/s or bft) _____
Wind Direction (direction wind is coming FROM), circle what applies: N, NE, NW, S, SE, SW, W, E

Wind OUTSIDE the grove, away from the cluster trees

Temperature (°F or C): _____
Relative Humidity: _____
Average wind speed (mph, m/s or bft) _____ Maximum wind speed (mph, m/s or bft) _____
Wind Direction (direction wind is coming FROM), circle what applies: N, NE, NW, S, SE, SW, W, E

Monarchs Observed? Yes / No

If so, is there an associated count data sheet? Yes / No

If not, roughly how many monarchs were observed? _____

Habitat Information

1. Is there a wind buffer between the cluster trees and the edge of the grove? Yes / No / No current cluster trees. If so, in what directions (circle all that apply)? N, NE, NW, S, SE, SW, W, E

2. Describe the grove's tree arrangement (e.g., u-shape, linear along a drainage, dense grove with scattered openings, etc.) _____

3. What tree species are present? _____

4. Do the cluster trees get direct sunlight? Yes / No / No current cluster trees. If so, during what times of day (circle those that apply)? Morning / Midday / Afternoon / Other _____

5. Are there dead/diseased/hazard trees in the grove? Yes / No
If so, please describe their location, # of affected trees, and species _____

6. Is there fresh water (including dew) available nearby? Yes / No
If so, what is the source? (check all that apply) Dew / Stream / Pond / Lake / Other _____
How far away is it from the cluster trees? (meters) _____

7. Are nectar plants currently blooming nearby? Yes / No.
Record what species are present (check all that apply). If possible, rate the relative amount of blooms available to monarchs per species: A= abundant; M= moderate; S= scarce)

<p><u>Native Species:</u> <input type="checkbox"/> Narrow leaf milkweed (<i>Asclepias fascicularis</i>) <input type="checkbox"/> Mule fat/seep willow (<i>Baccharis glutinosa</i>) <input type="checkbox"/> Coyote brush (<i>Baccharis pilularis</i>) <input type="checkbox"/> Arroyo willow (<i>Salix lasiolepis</i>) <input type="checkbox"/> Other willow (<i>Salix</i> sp.) <input type="checkbox"/> Monkeyflower (<i>Mimulus</i> sp.) <input type="checkbox"/> Morning glory (<i>Calystegia</i> sp.) <input type="checkbox"/> Miner's lettuce (<i>Montia perfoliata</i>) <input type="checkbox"/> Dune groundsel/ragwort (<i>Senecio blochmaniae</i>) <input type="checkbox"/> Mock heather (<i>Ericameria ericoides</i>) <input type="checkbox"/> Crisp dune mint (<i>Monardella crispera</i>) <input type="checkbox"/> California blackberry (<i>Rubus ursinus</i>) <input type="checkbox"/> Manzanita (<i>Arctostaphylos</i> sp.) <input type="checkbox"/> Blue blossom (<i>Ceanothus thyrsiflorus</i>) <input type="checkbox"/> Western goldenrod (<i>Euthamia occidentalis</i>) <input type="checkbox"/> Bluedicks (<i>Dichelostemma capitatum</i>)</p>	<p><u>Native Species (cont.):</u> <input type="checkbox"/> Red alder (<i>Alnus rubra</i>) <input type="checkbox"/> Aster (<i>Aster</i> sp.) <input type="checkbox"/> Seaside fleabane (<i>Erigeron glaucus</i>) Other: _____ _____ <u>Non-native Species:</u> <input type="checkbox"/> Tropical milkweed (<i>Asclepias curassavica</i>) <input type="checkbox"/> Blue gum (<i>Eucalyptus globulus</i>) <input type="checkbox"/> Red gum (<i>Eucalyptus camaldulensis</i>) <input type="checkbox"/> Black mustard (<i>Brassica nigra</i>) <input type="checkbox"/> Unknown or other mustard (<i>Brassica</i> sp.) <input type="checkbox"/> Common dandelion (<i>Taraxacum officinale</i>) <input type="checkbox"/> Ox-eye daisy (<i>Chrysanthemum leucanthemum</i>) <input type="checkbox"/> Periwinkle (<i>Vinca major</i>) <input type="checkbox"/> Butterfly bush (<i>Buddleia</i> sp.)</p>	<p><u>Non-native Species (cont.):</u> <input type="checkbox"/> English ivy (<i>Hedera helix</i>) <input type="checkbox"/> German ivy (<i>Senecio mikanioides</i>) <input type="checkbox"/> Passionflower vine (<i>Passiflora</i> sp.) <input type="checkbox"/> Bull thistle (<i>Cirsium vulgare</i>) <input type="checkbox"/> Wild radish (<i>Raphanus sativus</i>) <input type="checkbox"/> English daisy (<i>Bellis perennis</i>) <input type="checkbox"/> White nightshade (<i>Solanum nodiflorum</i>) <input type="checkbox"/> Ice plant (<i>Mesembryanthemum</i> sp.) <input type="checkbox"/> Field bindweed (<i>Convolvulus arvensis</i>) <input type="checkbox"/> Chrysanthemum (<i>Chrysanthemum</i> sp.) <input type="checkbox"/> Klamath weed/tansy mustard (<i>Senecio</i> sp.) <input type="checkbox"/> Lily-of-the-Nile (<i>Agapanthus africanus</i>) <input type="checkbox"/> Sweet fennel (<i>Foeniculum vulgare</i>) <input type="checkbox"/> Bottlebrush (<i>Callistemon</i> sp.) <input type="checkbox"/> Lantana (<i>Lantana</i> sp.) <input type="checkbox"/> Lemon (<i>Citrus limon</i>) <input type="checkbox"/> Pride of madeira (<i>Echium fastuosum</i>) Other: _____ _____ _____</p>
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8. Roughly, how close is the closest nectar source from the monarch cluster trees? (meters) _____

9. Did you observe monarchs feeding on nectar? Yes / No

If yes, which species? _____

10. Record the tree species that monarchs are clustering on (check all that apply).

<input type="checkbox"/> Blue gum (<i>Eucalyptus globulus</i>)	<input type="checkbox"/> Coastal redwood (<i>Sequoia sempervirens</i>)
<input type="checkbox"/> Red river gum (<i>Eucalyptus camaldulensis</i>)	<input type="checkbox"/> Coast live oak (<i>Quercus agrifolia</i>)
<input type="checkbox"/> Unknown or other Eucalyptus species (<i>Eucalyptus spp.</i>)	<input type="checkbox"/> Western sycamore (<i>Platanus racemosa</i>)
<input type="checkbox"/> Monterey pine (<i>Pinus radiata</i>)	<input type="checkbox"/> Willow (<i>Salix spp.</i>)
<input type="checkbox"/> Unknown or other pine (<i>Pinus spp.</i>)	<input type="checkbox"/> Acacias (<i>Acacia spp.</i>)
<input type="checkbox"/> Monterey cypress (<i>Cupressus macrocarpa</i>)	Other: _____

11. Record other tree species present at the site that monarchs are not clustering on (check all that apply).

<input type="checkbox"/> Blue gum (<i>Eucalyptus globulus</i>)	<input type="checkbox"/> Coastal redwood (<i>Sequoia sempervirens</i>)
<input type="checkbox"/> Red river gum (<i>Eucalyptus camaldulensis</i>)	<input type="checkbox"/> Coast live oak (<i>Quercus agrifolia</i>)
<input type="checkbox"/> Unknown or other Eucalyptus species (<i>Eucalyptus spp.</i>)	<input type="checkbox"/> Western sycamore (<i>Platanus racemosa</i>)
<input type="checkbox"/> Monterey pine (<i>Pinus radiata</i>)	<input type="checkbox"/> Willow (<i>Salix spp.</i>)
<input type="checkbox"/> Unknown or other pine (<i>Pinus spp.</i>)	<input type="checkbox"/> Acacias (<i>Acacia spp.</i>)
<input type="checkbox"/> Monterey cypress (<i>Cupressus macrocarpa</i>)	Other: _____

12. Estimate the community structure composition (total can be >100% for all layers combined).

Tree cover ____% Shrub cover ____% Herbaceous cover ____% Leaf litter layer ____%

Bare soil cover ____%

13. Record any threats or disturbances you observe at the site (check all that apply).

<input type="checkbox"/> Storm damage	<input type="checkbox"/> Cattle/burro/other livestock grazing
<input type="checkbox"/> Cut trees	<input type="checkbox"/> Pesticide use at site (observed)
<input type="checkbox"/> Trimmed trees	<input type="checkbox"/> Pesticide use at site (likely)
<input type="checkbox"/> Possibly too dense of trees (i.e. too much shade)	<input type="checkbox"/> Fire damage
<input type="checkbox"/> Trees diseased from pitch canker	<input type="checkbox"/> Construction
<input type="checkbox"/> Trees diseased from Eucalyptus leaf beetle	<input type="checkbox"/> Buildings
<input type="checkbox"/> Trees diseased from Eucalyptus lerp psyllid	<input type="checkbox"/> Pavement
<input type="checkbox"/> Trees diseased from Eucalyptus longhorn borer	<input type="checkbox"/> Parking lot
<input type="checkbox"/> Trees diseased from unknown source	<input type="checkbox"/> Mowing/plowing of nectar plants
<input type="checkbox"/> Dead/dying trees from non- disease source	<input type="checkbox"/> Railroad tracks
<input type="checkbox"/> Old/aging trees	<input type="checkbox"/> Extensive trails
<input type="checkbox"/> Utility maintenance	<input type="checkbox"/> Road (within the site)
<input type="checkbox"/> High human visitation load	Other: _____
<input type="checkbox"/> Erosion	_____
<input type="checkbox"/> Campsite	_____

14. Describe the disturbances/threats in greater detail, if possible. For example, if you observed dead/dying trees, how many did you observe and are they cluster trees? If the site is affected by erosion, what is the cause of the erosion? _____

15. Record any threats or disturbances you observe OUTSIDE but nearby the site (check all that apply).

<input type="checkbox"/> Roads/Highways <input type="checkbox"/> High vehicle traffic area <input type="checkbox"/> Housing Developments <input type="checkbox"/> Shopping Malls/Restaurants <input type="checkbox"/> Pavement	<input type="checkbox"/> Parking lot <input type="checkbox"/> Pesticide/herbicide use in landscape (observed) <input type="checkbox"/> Pesticide/herbicide use in landscape (likely) <input type="checkbox"/> Construction Other: _____
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16. Record possible future threats that seem likely to affect this site (check all that apply).

<input type="checkbox"/> High possibility that overwintering trees will be cut <input type="checkbox"/> Site might become too dense/shady in the future <input type="checkbox"/> Site might not offer enough wind protection in the future <input type="checkbox"/> Proposed housing development	<input type="checkbox"/> Proposed expansion of facilities or buildings within the site Other: _____ _____
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17. Is there a staff and/or docent presence at the site? Yes / No

If so, from what agencies/groups (list all that apply)? _____

Photopoints

Camerapoint Description: _____

Photopoint #1 Description: _____

Photopoint #2 Description: _____

Notes

Overall Site Sketch

Provide a sketch here or on the back of the datasheet; utilize aerial maps, ArcGIS, Google Earth, Google Maps, or other programs to provide a more detailed map of the site and its major features , including cluster locations, if possible).