Western Monarch Overwintering Habitat Assessment Instructions

Thank you for your interest in conducting a western monarch overwintering habitat assessment. The information that you collect is valuable to document site conditions, boundaries, and threats. And, if used regularly, these assessments can be used to document changes in a site over time. In addition, the data may be useful to site managers and conservation groups to help inform overwintering site restoration and management.

To get started, gather the supplies you will need or want for the assessment.

Equipment List

Western Monarch Overwintering Habitat Assessment Instructions (this sheet)
Western Monarch Overwintering Habitat Assessment (Short Form) or (Long Form) data sheet
Pen or pencil
Binoculars
Clipboard (helpful but not required)
Kestrel pocket weather meter or outdoor weather thermometer or a thermometer app (helpful but not required)
GPS unit or smart phone w/ GPS capability (helpful but not required)
Plant identification/field guide book (helpful but not required)
Camera or smart phone w/ camera capability (helpful but not required)
Compass or smart phone w/ compass capability (helpful but not required)

Instructions and Definitions

These are the instructions for the Western Monarch Overwintering Habitat Assessment. There are two forms of the habitat assessment: the Short Form and the Long Form—feel free to use whichever form you have time and equipment for. For whichever data sheet you choose, fill out all fields to the best of your ability. If you are unsure for any fields, no information is better than inaccurate information. The majority of the items listed on the data form are self explanatory. Below are definitions and instructions for items that require further explaination.

General Site Information

Site ID: This is the number assigned to the site from the Xerces Society's Western Monarch Overwintering Sites Database (available by request). If you do not know the site identification number, leave this blank.

Property Owner: This is the legal owner of the property that the overwintering site is located on. This may be a public agency such as the U.S. National Forest Service or California Department of Parks and Recreation (State Parks), private landowners such as home owners or business owners, or non-profit organization. List multiple owners if applicable. If the property owner is a private landowner, please provide the individual, family, or company's name and contact information, if known. If you are unsure who the owner is, leave this blank. Seem slike this copuld be metadata associated with the site ID and not need to be recorded on every site visit.

Current Land Use: This is the primary human use of a specific land area. Some examples include city, regional, county, state or national parks; state or national forests; residential; commercial; industrial; agricultural; golf courses; or other land uses. List multiple land uses if applicable.

Site Location/Directions: Please be as specific as possible, make the directions so that anyone with the directions could find the site, particularly if you are documenting a new site. Be sure to include relevant information such as town names, highway or street names, river or stream names, and distances, if applicable.

Weather Data
If you have access to a Kestrel pocket weather meter (or similar device), please use this to collect the microclimate data. Be sure to note the metric used (e.g., mph vs. m/s, C vs. F). If you do not have access to this device, please skip the relative humidity data field and use an outdoor weather thermometer to record the temperature data. If you do not have access to any weather device, leave this section blank.

Windspeed:

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires

Location Data

GPS Points: If you have access to a smart phone with GPS capabilities (most phones now have this capability) or a GPS unit, please provide GPS coordinates of the site as well as the accuracy of the GPS unit and the datum (i.e. NAD27, NAD83, WGS84) that the data is collected in. If you do not have access to GPS, leave this section blank. Providing a hand-drawn map, an aerial map, Google Maps image, ArcGIS shapefile, or Google Earth kmz file with the site boundaries, cluster locations, and/or other important features clearly marked is also really helpful!

Habitat Information
Answer habitat information questions based off of the core cluster areas where monarchs typically congregate at the site. Clustering is defined as multiple individuals together with closed wings. If you do not know where monarchs cluster at the site and do not see any clustering while you are doing this survey, indicate that on the form. You can contact Xerces (wmtc@xerces.org) to get a copy of the site report and any spatial information we have about where monarchs typically cluster so you can refine your search area in advance.

Community Structure: Record a visual estimate of the percentage each forest structure layer (i.e. tree, shrub, herbaceous layer) occupies. For example, tree cover is measured by imaging that the tree cover is viewed from above in two dimensions as if it were pressd flat against the ground. Densely growing trees would be 80-100% cover, whereas very sparsely growing trees generally would be 20% or less cover. Shrub cover includes woody species that do not reach tree height. Herbaceous cover comprises forbs (most non-woody flowers), grasses, or other plants that are not woody. Leaf litter cover is the percentage of dead material such as leaves, branches, and tree bark that covers the ground. Bare soil cover includes all exposed soil not covered by plants or dead material. Consider each layer on its own. The total for all layers combined can be greater than 100%.

Photopoints

If you are able, take a photograph or multiple photographs of the site. Record a description, to the best of your ability, on the camerapoint (where you are standing to take the photograph) and the photopoint (the direction in which you are taking the photograph). GPS points and cardinal directions (N, NE, etc) are helpful if you have access to a GPS unit and/or a compass or an app. If you have sufficient time, it is best to position the camerapoint location a few feet from the main monarch cluster tree and take photopoints in every cardinal direction (N, NE, E, SE, S, SW, W, NW). Email the photos along with this form.

Overall Site Sketch

Draw as much information as you can including monarch cluster trees, trees within the grove in which monarchs are not roosting, buildings, trails, streams/rivers, adjacent roads or highways, signs, areas with nectar plants, and open areas. Again, providing a hand-drawn map, an aerial map, Google Maps image, ArcGIS shapefile, or Google Earth kmz file with the site boundaries, cluster locations, and/or other important features clearly marked is also really helpful!

Please return completed habitat assessment forms by email to wmtc@xerces.org or by mail to The Xerces Society, 628 NE Broadway St, Suite 200, Portland, OR 97232.