Site Selection

Overview

Site selection is the first step to be completed for participation in the IMMP. Two types of sites may be monitored within the program: random and non-random. Random sites are preferred because they provide an unbiased representation by geography and land use type. These may involve establishing new connections with landowners or managers to secure permission to survey. Non-random sites are typically sites of interest (e.g., sites managed for pollinators, outdoor labs), where gaining information helps landowners and managers to track habitat quality and monarch use.

After a site is selected, a 1-hectare monitoring plot is established within the site to guide monitoring activities. Thus, sites should be at least 1 hectare in size to provide consistency across sites and land use types. (Smaller sites may be accommodated if there are no other options in the block.)

This section describes how to select a random site, establish a non-random site, and acquire permission to survey (if applicable).

Table 1. Description of the Site Types monitored by IMMP (Eastern Population)

<table>
<thead>
<tr>
<th>Site Types</th>
<th>Code</th>
<th>Identifying Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected Grassland</td>
<td>PGS</td>
<td>Grasslands, savanna, and shrubland; herbaceous plants dominant; public or private land under easement</td>
</tr>
<tr>
<td>Unclassified Grassland</td>
<td>UGS</td>
<td>Grasslands, savanna, and shrubland; herbaceous plants dominant; public or private land with no known easement</td>
</tr>
<tr>
<td>Agriculture</td>
<td>AGC</td>
<td>Row crops, orchards, vineyards, etc. Field edges</td>
</tr>
<tr>
<td></td>
<td>AGE</td>
<td>Agricultural Conservation Lands</td>
</tr>
<tr>
<td></td>
<td>ACL</td>
<td></td>
</tr>
<tr>
<td>Rights-of-way</td>
<td>ROW</td>
<td>Roads with right-of-way habitat ≥ 4 m wide, with safe parking and accessibility; also some rail corridors; may also include power ROW.</td>
</tr>
<tr>
<td>Developed</td>
<td>DEV</td>
<td>Areas associated with residential, commercial, industrial, or public development; rural, exurban, suburban, or urban</td>
</tr>
</tbody>
</table>

Random Sites

Random sites help achieve an unbiased characterization of potential monarch habitat and use of habitat by monarchs across site types and throughout the breeding range. Random sites were selected through a process called Generalized Random Tessellation Systematic (GRTS) sampling framework. In short, sites were randomly selected and prioritized at two levels. First, a grid of 10 km x 10km squares (hereafter, Monarch Blocks) were placed across the contiguous United States and randomly numbered. Second, thousands of points (hereafter, Sampling Points) within each monarch block were randomly numbered. In both cases, lower numbers indicate higher sampling priority.
The IMMP aims to monitor one Sampling Point of each Site Type (Table 2) within high priority Monarch Blocks, for a total of five sites monitored within each block. If you know a landowner within a monarch block and her/his land is a Site Type described in Table 2 and is at least 1 hectare (2.5 acres) in size, you may monitor that site (smaller can be accommodated if it’s the only option in the block). In that case, follow the directions for non-random sites. It is strongly recommended that you select a Site Type that is not already adopted in that Monarch Block.

**Non-random Sites**

Non-random sites enable greater participation in the program. Participants interested in monitoring a site of their choosing, such as conservation sites or management areas, may also contribute data to this effort. Non-random sites must correspond to one of the Site Types listed in Table 2. Participants outline the boundaries of their area of interest by using an online mapping tool.

**Selecting Your Site**

To select a random site or submit your non-random site to the IMMP, email monitoring@monarchjointventure.org. A monitoring coordinator will send you a link and instructions for an online mapping tool. Please include your name, city for where you would like to monitor, name of any local coordinator or trainer you’ve worked with (if applicable), and if you prefer to select a random or non-random site.

In all cases, unless the person or organization monitoring the site is the owner of that property, landowners or land managers must sign the Land Access Agreement (Appendix D) before monitoring begins. This agreement contains important details on site access, data sharing permissions, and contact information. Please email a copy of this form to monitoring@monarchjointventure.org so that IMMP staff can keep track of data sharing permissions. See page 8 and Appendix B for tips on obtaining permission from landowners.

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Note: All monitoring sites are identified by a Site ID, which contains three factors: the Site Type code (Table 2), the Monarch Block number, and the Sampling Point number. For example, an agricultural crop field within Monarch Block 1395 and at Sampling Point number 4 is AGC-001395-000004 (include leading zeros to reach 6 digits).

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**Additional Option: Communicating Information to the Surveyor**

It is possible that the person selecting the site is different from the person monitoring the site. When this is the case, the following items should be communicated to the surveyor:

- Plot ID
- Latitude/longitude of Starting Point (Point 1)
- Any access information they will need to get on the property
- Information about how often, and how, to contact the land owner or land manager
- Monitoring plot configuration (standard rectangle, standard square, irregular plot, or linear) and start bearing
Gaining Permissions for Access and Waivers

Before monitoring a site, **the landowner or manager must grant permission to access and collect data at the site.** Even if the land is in public ownership, the managing authority must be contacted prior to accessing the site for the first time. Contact the most local person affiliated with the site (e.g., private landowner, state or county DOT, park manager) to let them know that someone would like to visit their land to collect monarch butterfly and habitat information as part of a national effort (see Appendix B for additional outreach resources). Suggestions for common types of land ownership are below.

<table>
<thead>
<tr>
<th>Landowner or land use type</th>
<th>Suggestions for finding landowner and acquiring permission to survey</th>
</tr>
</thead>
</table>
| Publicly accessible lands (e.g., government parks and preserves, private nature reserves) | 1. Search for the preserve manager, biologist, or similar role online and call to acquire permission. Or, visit the preserve in person to seek out the appropriate contact.  
2. Provide a description of the area to be surveyed, such as the coordinates of the plot or an aerial photo.  
3. Ask about special considerations, such as hunting seasons, or other safety concerns (e.g., scheduled prescribed fire)  
4. Ask about research permits. It is preferable that monitoring participants fill out and manage permits themselves.  
5. Ask if the land manager needs to be contacted prior to each visit, names of others conducting surveys with you, approximate dates of surveys, or other information. |
| Rights-of-way | 1. Use the internet or local contacts to find contact information for the roadside, utility, railway, or corridor manager.  
2. For roads, determine if the roadway is a state highway, county highway, or local road such as a township road. Highway Operations Managers, Commissioners, Committee Chairs, or Town Clerks can often provide more information about accessing roadside rights-of-ways.  
3. Ask about safety, such as where to park, what to wear, and unsafe weather conditions for surveys.  
4. Ask if they need to be contacted each time prior to your survey, or just once at the beginning of the season.  
5. Assure them that monitoring will not interfere with scheduled management actions. |
| Private lands | 1. Obtain landowner information from your Local Coordinator or by visiting the relevant county’s website and searching parcel data. Note that it is not necessary to obtain landowner data prior to approaching them; you may request permission in person without knowing names beforehand.  
2. Visit the site in person to share information on the project and seek permission, or call them if your Local Coordinator provided a phone number. |