



GET STARTED: INITIAL SITE SETUP

OVERVIEW

Now that you have identified a project or site where the ESII Tool will be used, this section describes the steps that you must complete in the ESII Project Workspace before data can be collected.

TERMINOLOGY

The following terminology is used within the Project Workspace:

- **Site:** the overall location where an assessment will take place. In Figure 1, the Site boundary is shown in red;
- **Data Collection Effort (DCE):** the portion of the Site that will be evaluated. In some cases, this could be the entire Site, in other cases this area may be defined by the boundaries of a specific project. In Figure 1, the DCE boundary is shown in blue;
- **Scenario:** an assessment of conditions within a DCE used to generate or compare analysis results between alternative landscape management options. A Scenario may refer to an assessment phase, such as “baseline”, “current condition”, or “post-design”, or to a specific development design label such as “brownfield redesign” or “new parking lot”;
- **Map unit:** an individual parcel of land where data collection will take place. Each map unit encompasses a relatively homogeneous area of vegetation or man-made structures (for example, an area that is all or mostly grass, or an area that is paved). In Figure 1, there are six map units delineated in yellow. A map unit may also be an aggregation of areas that share similar features, for example, a forest with small grassy openings or an office complex including all the surrounding landscape.



Figure 1. Example of a Site, DCE, and map units created during Initial Site Setup

CREATE A NEW SITE

- After you have logged in, click on the Site dropdown menu, scroll down and select “Create a new site...” (Figure 2). The following Site setup process is broken up into several steps which correspond with steps listed in the Project Workspace.

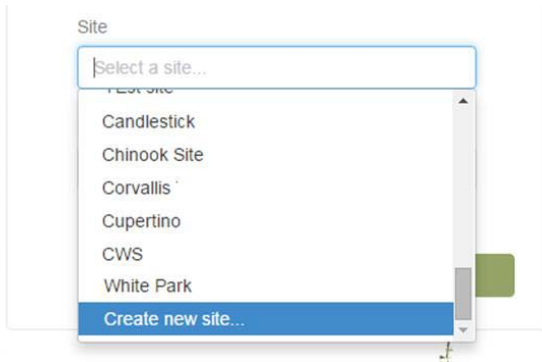


Figure 2. Use the dropdown menu to create a new Site

- **Step 1. Site Location:** In the search window, type in a location for the Site (Figure 3); you can enter a street address, city, state, or zip code. Press the Search button and a map of the location will be displayed.

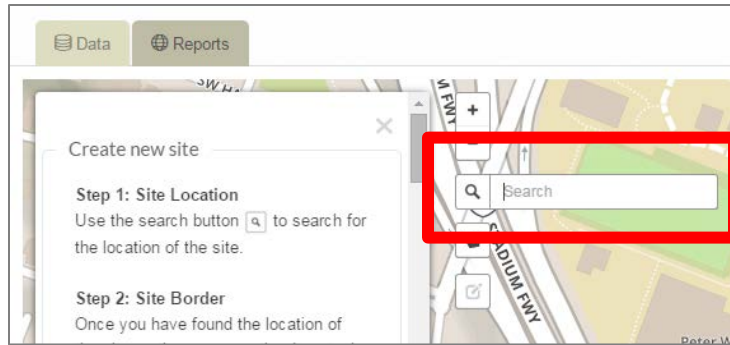


Figure 3. Type the Site location directly into the search window

Step 2. Site Border: Zoom in to find the project location. Then use the draw tool to draw the boundary of the Site (Figure 4). A boundary in the ESII Tool is defined by a series of points, or *vertices*, connected by lines.

Use the cursor to locate each vertex on the screen, then tap or click at that screen location to create the vertex. Each new vertex you create will be connected to the previous one by a line. When you arrive back at the starting point, click the initial vertex again to complete the Site border (Figure 5).

If you make an error or change your mind about a vertex, just click “Delete last point” and re-enter the vertex.

TIPS & TRICKS

It may be useful to define the Site boundaries using property boundary lines.

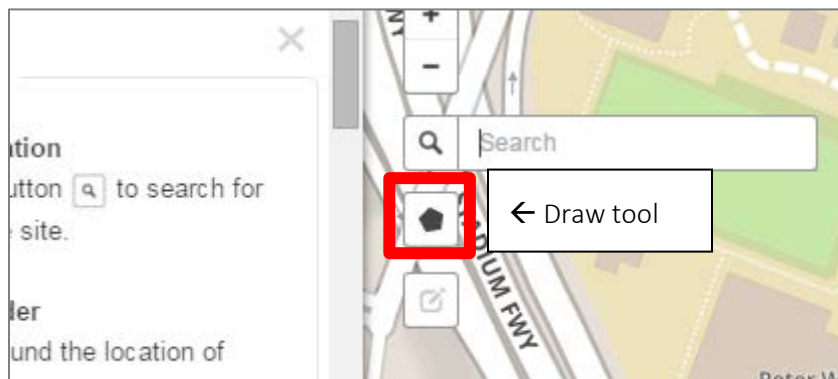


Figure 4. The Draw tool is used to draw borders around the Site



Figure 5. Site boundaries are drawn using the Draw tool

- After the Site has been drawn, you may edit the boundary by clicking on the Edit tool. This will display the vertices of the Site boundary. The vertices can be dragged to change the boundary of the Site (Figure 6).

When you are done editing, click Save to save the changes.



Figure 6. Edit the Site boundaries using the Edit tool

- **Step 3. Site Name:** Type in the name of the Site. Select a Site name that will be well understood by others in your organization.
- **Step 4. iPad Base map:** This is the background imagery that will be cached and displayed for this Site in the ESII App. Mapbox Satellite and ESRI World Imagery maps are freely available resources and have been pre-loaded into the Project Workspace, although these maps may or may not have the most up-to-date images for your location. Check both resources to determine which is the most accurate to use. You may also upload a more up-to-date image if you have one.
Uploadable data must be in the format of a GeoTIFF or shapefile.¹ If a GeoTIFF is

¹ GeoTIFF is a computer file format for storing georeferencing information within computer graphic images. Georeferencing information may include map projections, coordinate systems and other data that establishes the exact spatial reference for the file. A shapefile is a format for storing the geometric location and attribute information of geographic features used in geographic information system (GIS) software.

available, click Choose File and navigate to the location of the image on your computer, or drag and drop the image from your computer onto the map in the Project Workspace.

- **Step 5. Site Questions:** For now, you may skip this question. This relevant regional data provides additional information for the site. You may create the Site without answering these questions. However, this information must be filled out before results can be generated. See “Data Entry Validation” for instructions.
- Click Create Site.

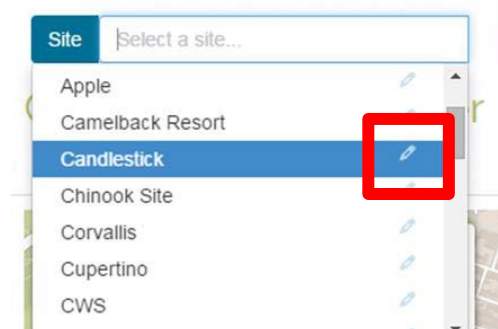


Figure 7. The Edit tool is used to edit Site information

EDIT SITE INFORMATION

You can edit Site information by selecting the site from the Site dropdown menu and clicking the edit icon on the right hand side (Figure 7). When the Site information appears you may edit the Site borders, Site name, iPad Base map selection, or regional data questions from Step 5. When finished, click “Update Site” to save the changes.

Once your Site has been created, a popup window will confirm this (Figure 8). Click OK to move to the next set of steps for creating a Data Collection Effort (DCE).

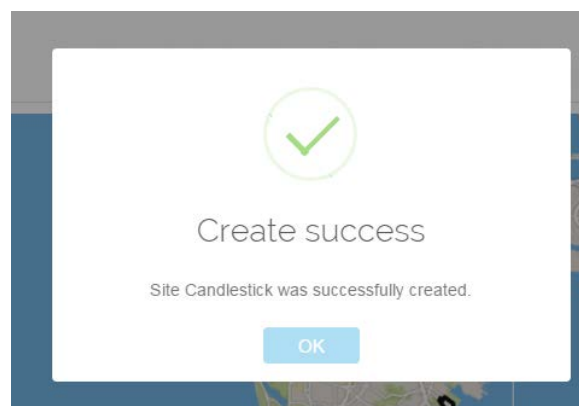


Figure 8. Popup window confirms Site creation

CREATE A DATA COLLECTION EFFORT (DCE)

- On the top toolbar, click on the dropdown arrow next to DCE and select “Create a new DCE...”. The following DCE setup process is broken up into several steps which correspond to the steps listed in the Project Workspace.
 - **Step 1. Border:** Follow the same steps used to draw the Site boundary by clicking on the Draw tool. You may edit the borders of the DCE using the Edit tool. When this tool is

active the borders of the DCE are displayed and the vertices can be dragged to different locations to re-draw the boundary. In some cases the DCE boundary may be the same as the Site boundary. Even if this is the case, you must still create a DCE.

- **Step 2. Name:** Type in the name of your DCE. This should describe the area where data collection will take place within the Site. It should be short and concise (no more than about 50 characters) and descriptive. For example, a Site might be named “People’s Park”, with the DCEs within this Site named South Soccer Field, West Parking Lot, etc.
- **Step 3. Description:** Include a description of the DCE.
- **Step 4. Status:** This is tied to the ability to edit information in the ESII App related to the baseline Scenario created within the DCE.
 - Pre-data collection: the DCE will not appear in the ESII App and you will not be able to create alternate scenarios for DCEs.
 - Active data collection: the baseline scenario created in the DCE will appear and can be edited in the ESII App. NOTE this is the default setting.
 - Post-data collection: the baseline scenario created in the DCE will appear in the ESII App, but cannot be edited in the ESII App.
 - Archive: the DCE will not appear in the ESII App.

TIPS & TRICKS

Check that the status of your DCE is set to “Active data collection” before your colleagues are in the field to collect data, otherwise they will not be able to edit data within the DCE from the ESII App.

- **Step 5. Baseline scenario name:** Type in the name of the Scenario.
NOTE: The label used here will automatically appear as the Scenario name where map units will be created. The Scenario name cannot be edited or changed at a later date.
- **Step 6. Personnel:** The individuals selected will have view and edit privileges for the baseline Scenario within the DCE in the ESII App. Make sure that all of your colleagues (including yourself) who will be collecting data using the ESII App are selected.
- Click on the green Create DCE button.

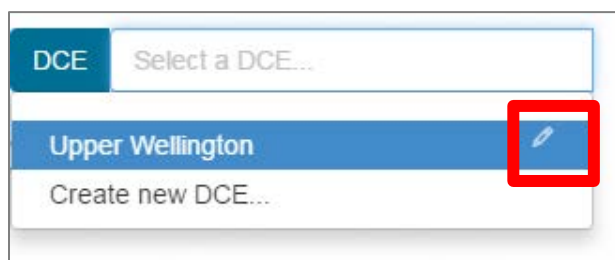


Figure 9. The Edit tool is used to edit DCE information

EDIT DCE INFORMATION

To edit DCE information, find the DCE on the DCE dropdown menu and click the Edit icon to the right of the DCE name (Figure 9). The DCE information will appear and you may edit the DCE border, Name, Description, Status, and Personnel. When finished, click “Update DCE”.

CREATE MAP UNITS

Because a DCE may include areas with widely different characteristics, you will need to divide the DCE into smaller areas, each with more or less uniform characteristics. These smaller areas are called *map units*. You must create these unique areas as map units so that your data can be tied to the specific location where it applies. You may draw map units in the Project Workspace or using the ESII Field App (see “Data Collection – ESII Field App” for instructions). The instructions below describe how to create map units in the Project Workspace.

- Click the polygon symbol (Figure 10) to begin drawing the first map unit.

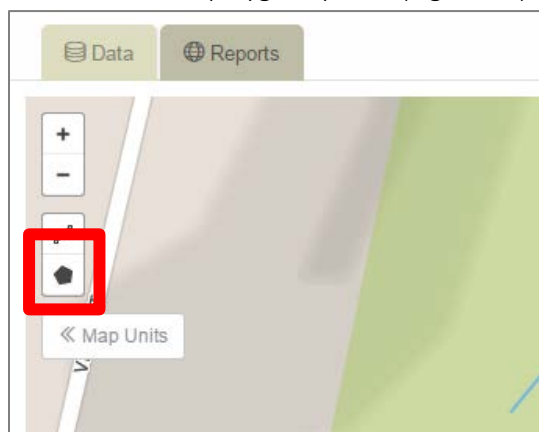


Figure 10. Use the Polygon button to begin drawing map units

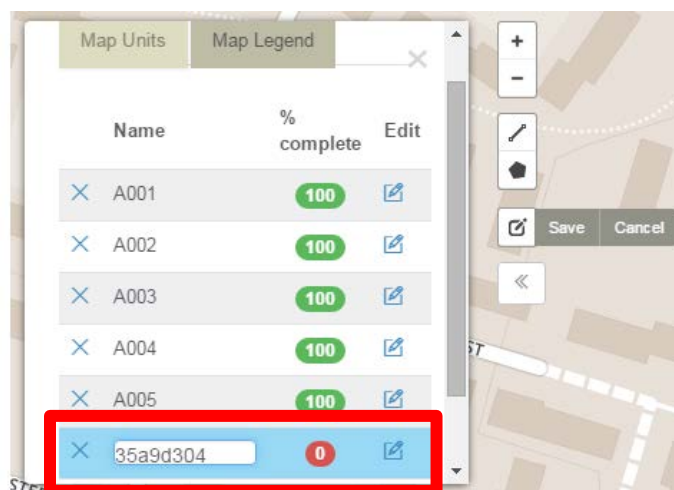
Follow the same steps used to draw the Site and DCE boundaries. Using your cursor, click to add vertices as you trace the DCE boundary. When you arrive back at the starting point, click the initial vertex again to complete the border around your first map unit. You can delete the last point by clicking “Delete last point” if you have made an error while drawing the boundary.

TIPS & TRICKS

If more than one person will be collecting field data using the ESII Field App, each field person should be assigned unique areas of the DCE to work in and a naming convention should be agreed upon so that each map unit has a unique identifier. This coordination should take place prior to the field visit so that everyone is working with the same map unit boundaries.

Map units should be drawn around areas of relatively homogeneous natural features (e.g., grassy fields, forests, shrub/scrub, etc.) or man-made structures (e.g., buildings, roads, etc.). The degree to which you include anomalies in a map unit should be dictated by how much time you have and how precise you want the information to be. Lumping areas of moderate heterogeneity into one large map unit will result in a lower level of resolution than splitting out those areas into multiple map units. For expediency, map units may be aggregations of areas that share similar features, for example a forest with multiple small grassy openings or an office complex including the surrounding landscaped areas

Following the creation of a new map unit, a map unit name will be auto-generated. You can change the name by clicking the Edit tool to the right of the map unit name (Figure 11). Map units should be assigned a unique alphanumeric identifier. Type in a new map unit name, and click Save to save your changes.



MAP UNIT NAMES

We recommend using a descriptive prefix with numbers for map units. For example, for baseline conditions use B001, B002, B003...B099 or Base1, Base2, Base3...Base99.

Figure 11. The auto-generated map unit name can be edited using the Edit tool

Now you are ready to begin collecting field data using the ESII Field App!

USE THE SPLITTING TOOL

This method eliminates small gaps and overlaps between map units that may result from trying to match the edges of map units. The splitting approach results in less cleanup work, as it reduces the potential for slivers and gaps between polygons. Start by drawing one large map unit. Click on the large map unit, then click the Splitting tool shown in Figure 12.

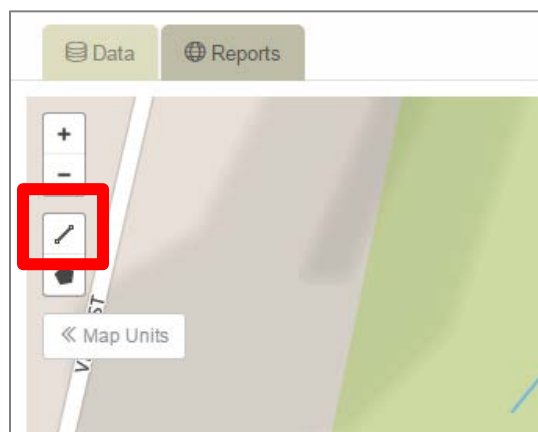


Figure 12. Use the Splitting tool to break up map units into smaller sizes

Begin by placing your cursor outside the boundary of the large map unit, close to where you want to start the split, and click to add the initial vertex. Click to add vertices along a line that will define the shared boundary between the two map units (Figure 13).



Figure 13. Use the Splitting tool to split a large map unit into smaller polygons

Double click at a point outside the map unit to complete the boundary line. This will save the split into two new map units (Figure 14).

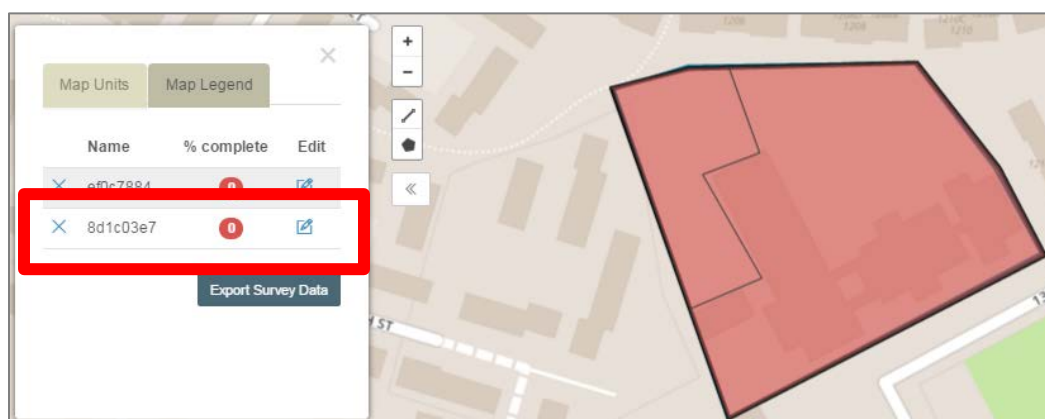


Figure 14. New map unit created using the Splitting tool

Draw borders for all of the map units that you think will be helpful, keeping in mind that conditions on the ground are almost always different than those viewed on background imagery and will need to be verified and modified by field personnel.

EDIT MAP UNITS

Clicking on the map unit will pop up a window (Figure 15) with the option to edit the shape of the map unit, edit the survey data associated with that map unit (this is an option if data for the Site or Scenario has been synced from the ESII App), delete the map unit, or merge the map unit with another.

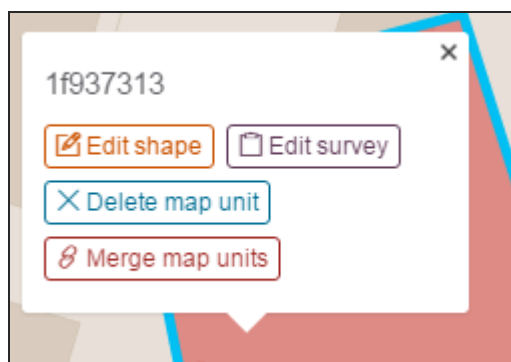


Figure 15. Popup window displays editing options for a map unit

EDIT MAP UNIT BOUNDARIES

After a map unit has been created, you may edit the boundary by clicking on Edit Shape from the popup window shown in Figure 15. When the editing tool is active, the vertices of your map unit boundary will be displayed and each vertex can be dragged to change the boundary for that map unit (Figure 16). Additional vertices may automatically appear which can also be dragged. Click Save to save your changes.



Figure 16. Editing map unit boundaries

MERGE MAP UNITS

After map units have been created, you may merge two adjacent map units by clicking on Merge Map Units from the popup window shown in Figure 15. You will be prompted to select which adjacent map unit you wish to merge with which survey data of the two map units you want to retain (Figure 17).



Figure 17. Merging map units

BOUNDARIES BETWEEN ADJACENT MAP UNITS

The boundaries of adjacent map units can overlap or not meet depending on where the vertices for each map unit are located. The more shared vertices between adjacent map units, the more likely you are to inadvertently create gaps or overlaps with adjacent map units. In editing map unit boundaries, you may also unintentionally cause a boundary to cross itself. To minimize gaps and overlaps, a setting in the Web Portal allows you to snap to the nearest vertex while a boundary is being moved during editing. The tolerance for snapping (the distance between vertices that triggers the snapping movement) can be set by clicking on the Settings button and adjusting the tolerance as desired (Figure 18).

- When this is set to 50, new vertices, or those being moved as you edit an existing border, will snap to the nearest existing map unit boundary or vertex within 50 meters of the cursor. This tolerance level is best used for map unit shapes that are relatively simple (i.e., comprised of few vertices).
- When this is set to 0, new vertices, or those being moved as you edit an existing border, will stop at the precise location of your cursor. This tolerance level is best suited for map unit shapes that are relatively complex, such as those with many curves or angles.

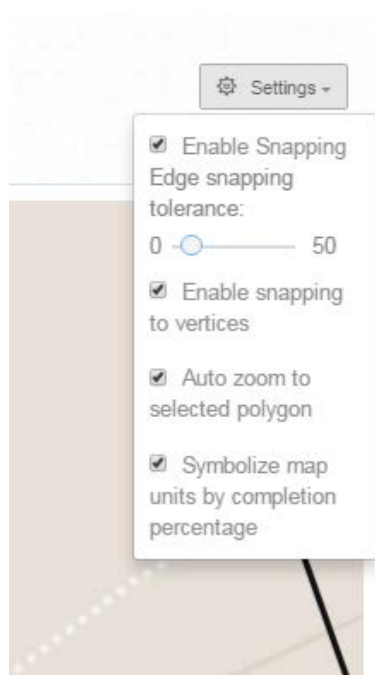


Figure 18. Setting the Snapping value