ALTERNATIVES ANALYSIS FOR ADVANCED USERS

OVERVIEW

This set of instructions is designed for more advanced users of the ESII Tool, including those who know how to create Sites, DCEs, Scenarios and map units in the ESII Project Workspace.

One unique feature of the ESII Tool is that it can be used to evaluate alternative design/layout scenarios for your property. These scenarios could include the current condition, a hypothetical design idea, a future project, or even a re-creation of past conditions. Since these last three conditions do not physically exist, data for those alternative designs cannot be collected using the ESII Field App.

However, within the ESII Project Workspace you can assemble and compare the data for these alternate designs. Simply create additional Scenarios within the same DCE, then create map units and survey data for each Scenario and download the results for comparison. For decision making purposes, data for alternate designs can be changed and re-run until the desired outcomes are achieved, thus providing guidance to designers and managers regarding the scope and investment required to meet ecosystem service goals.

ADD SUPPORTING IMAGERY/DATA TO BASE MAP

Additional reference layers, such as Site design drawings, can be added on top of the base map to provide additional detail for drawing map units. Adding an image of a new design, for example, can help define map units for a Scenario when the available aerial imagery is not helpful or appropriate (Figure 1). Imported files must be properly georeferenced in order to appear in the correct locations. Note that only GeoTIFF (.tif, .tiff) or shapefile data will be accepted by the system. Shapefiles must be packaged in a zip file, and GeoTIFFs must be georeferenced with a geographic coordinate system and projected in the World Geodetic System, 1984 (WGS 84).

Figure 1. Design drawing (GeoTIFF) over aerial imagery

To add such a layer to the base map, simply drag the layer file from the file manager and drop it directly into the map window in the Project Workspace (Figure 2).
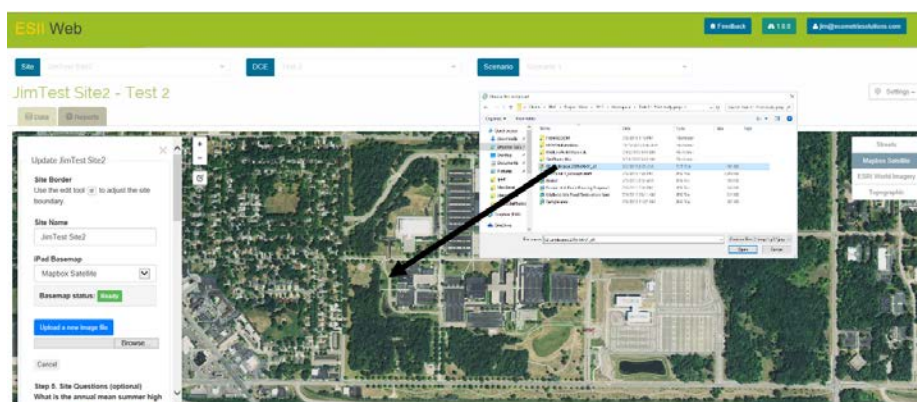

Figure 2. Drag and drop GeoTIFF file into the map window

USE AN EXISTING DATA COLLECTION EFFORT (DCE) OR CREATE A NEW DCE

To compare an alternate design to a Scenario within an existing DCE, find that DCE from the DCE dropdown menu and add a new Scenario as needed (see detailed steps below). The default Scenario will be the one you previously created for that DCE, which will be downloadable to the ESII Field App.

Alternatively, you can create a new DCE where all of your alternatives analysis will take place. From the DCE dropdown menu, select "Create a new DCE…". At Step 5 of the DCE setup process, you will create the first Scenario, the one that will be compared to subsequent Scenarios within this new DCE.

Whichever approach you choose, each DCE can contain multiple Scenarios to match the number of alternative conditions to be compared.

CREATE A NEW SCENARIO

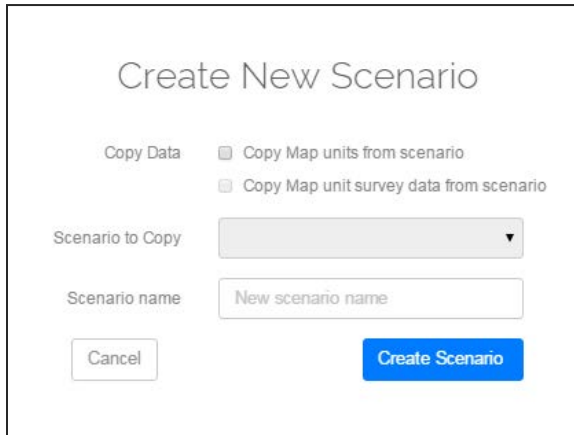From the Scenario dropdown menu, choose "Create a new scenario". The following popup window appears (Figure 3).
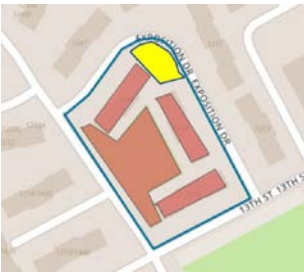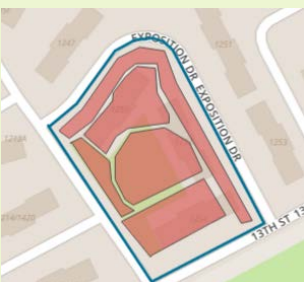

Figure 3. Popup window for creating a new Scenario

Table 1 describes some options for creating a new Scenario. There may be additional Scenario options that are not included here.

Table 1. Considerations for creating a new Scenario

	Scenario Options	Map Units	Process Steps
A	The new Scenario will use the same map unit boundaries as an existing Scenario, but there will be changes to some or all of the attributes in each map unit. For example, each map unit delineated is a parking lot in the existing Scenario. Each lot will be removed and replaced with native grasses in the new scenario.		In the popup window shown in Figure 2, check the box next to "Copy map units from scenario" and select the Scenario name from the dropdown list.* Type in a new scenario name and click Create Scenario.
B	The new Scenario will modify the boundaries of some existing map units, create new map units, and delete existing ones.		In the popup window shown in Figure 2, check the box next to "Copy map units from scenario" and select the Scenario name from the dropdown list.* Type in a new scenario name and click Create Scenario.
C	The new Scenario will use the same map unit boundaries from an existing Scenario, but will add new map units. For example, native grasses will be planted in the new, highlighted map unit.		In the popup window shown in Figure 2, check the box next to "Copy map units from scenario" **and** check the box next to "Copy map unit survey data from scenario", then select the Scenario name from the dropdown list.* Type in a new scenario name and click Create Scenario.
D	The new Scenario will completely redesign the portion of the site being evaluated. New map units will be created.		In the popup window shown in Figure 2, leave boxes unchecked and type in a new scenario name, then click Create Scenario.

* Copying data from an existing map unit can save time, but you must carefully edit the attribute data for each map unit that will change under the new Scenario.

CREATE NEW MAP UNITS OR USE EXISTING MAP UNITS

Take advantage of areas already mapped by copying existing data to the new Scenario. Modify map unit survey data if attributes are changing but the map unit boundaries are not affected by the new designs. You can use existing map units and merge, delete, or edit map unit boundaries from another Scenario to meet the mapping and data needs of new designs.

If you are creating new map units, follow the same considerations as you have previously when creating map units. Draw map units 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 data resolution than splitting 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 that includes the surrounding landscaped areas.

ENTER SURVEY DATA FOR MAP UNITS

Once map units are created they are listed in the Map Units screen, where they can be selected for data entry. Select the map unit by clicking within the map unit's border or by selecting the map unit from the map unit list. Select either "Edit survey" from the popup window or click the Survey slider on the right side of the screen (Figure 4).
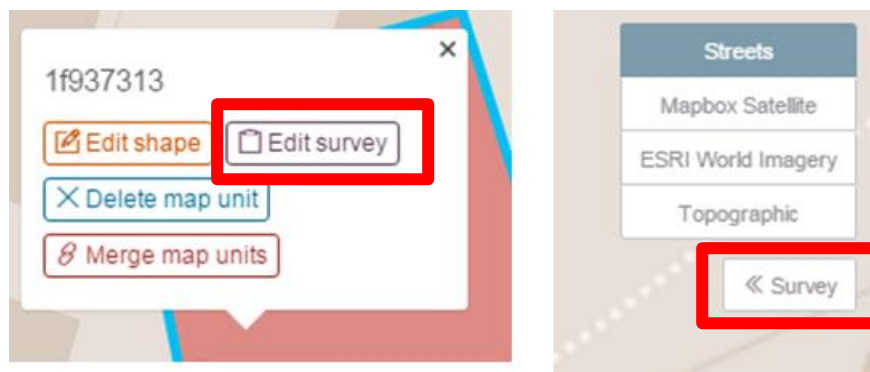

Figure 4. Selecting the survey for a map unit

Once the survey screen opens for the selected map unit, the survey will always begin with the Map Unit Habitat Type (Figure 5). The survey list is divided into four sections: Habitat Type, Vegetation Attributes, Surface Conditions, and Visual and Noise Characteristics. Select the answer that is most appropriate from the dropdown list (Figure 6).
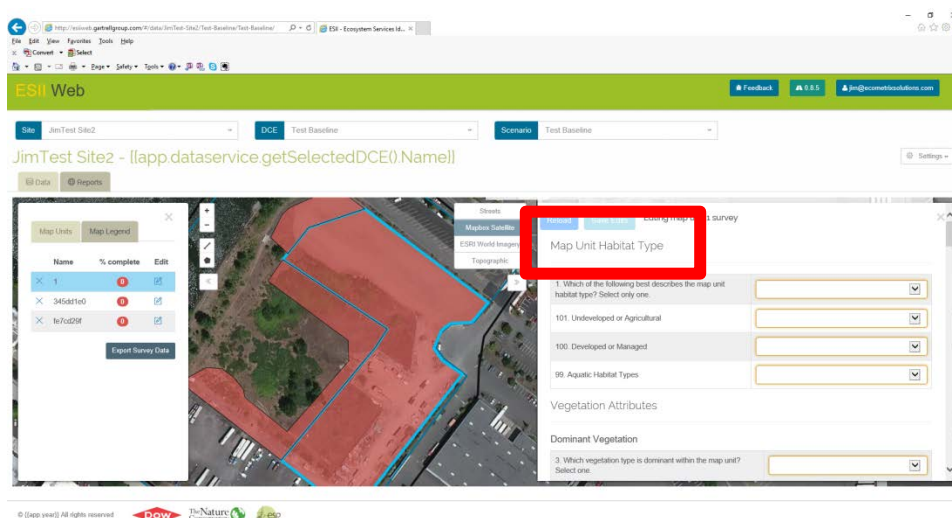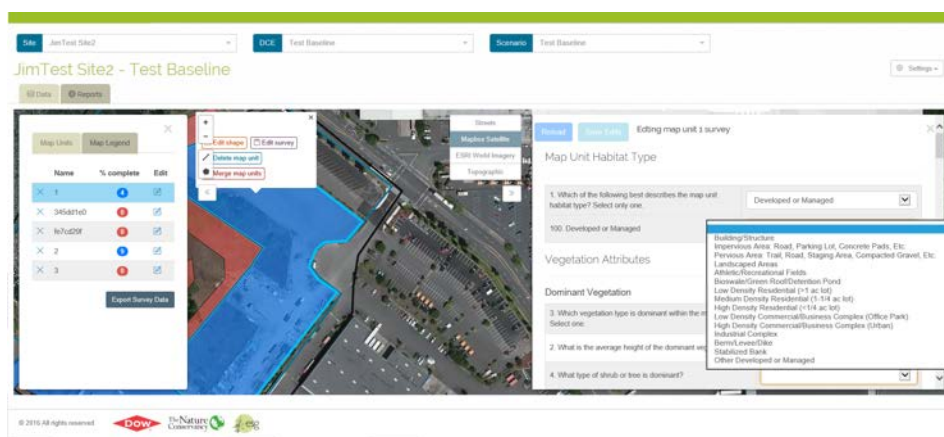
Figure 5. Map unit survey

Figure 6. Responses to a survey question

COMPARE OUTPUTS

Click the Tables sub-tab under the Reports tab to display tables that show summary data for the various Scenarios that you created. You can either view individual Scenario outputs in one CSV file or view all of the Scenario outputs within the DCE in one CSV file (Figure 7).
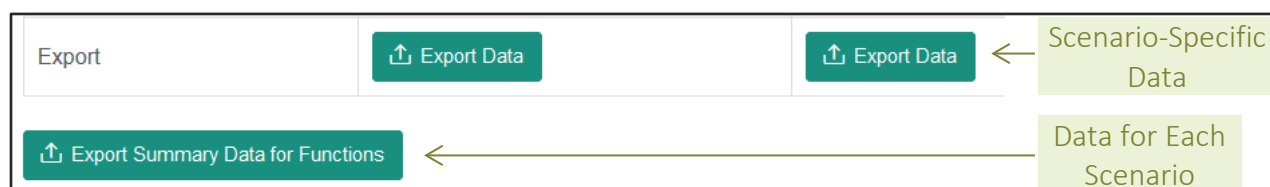

Figure 7. Export options for model results in the Project Workspace. The Export Data buttons download individual Scenario results, while the Export Summary Data for Functions button downloads the results for all Scenarios.