

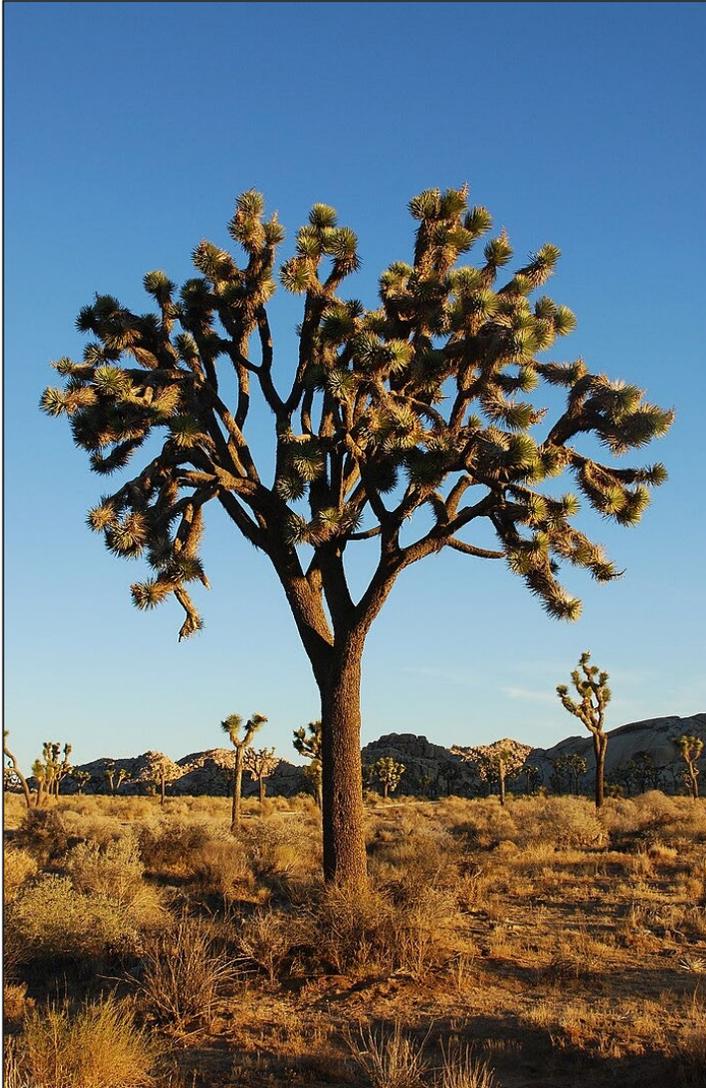
# Using Google Earth Web to Map Western Joshua Trees

Applications for a Western Joshua Tree Conservation Act Incidental Take Permit (WJTCA ITP) must include a census of all western Joshua trees on the project site. The census must include size information and photographs that categorize WJTs according to size classes.

This guide provides step by step instructions for creating a map to accompany the census using Google Earth Web.

[WJTCA ITP Census Instructions](#)

# Step 1: Collect data



Yucca brevifolia, the Western Joshua Tree.

By Jarek Tuszyński / CC-BY-SA-3.0

Collect the following data:

- The latitude and longitude (lat/long) of the corners of your project site. The project site includes the extent to which project activities will occur. The census area is your project site plus an additional 15-meter (~50 feet) buffer around that extent.
- If your data is in degrees, minutes, seconds (ex.  $35^{\circ} 36' 45''$ ) convert it to decimal degree (ex. 35.6125) using an [online conversion tool](#).
- The lat/long locations of each Western Joshua Tree (WJT) in the project site, regardless of whether it is being taken.

Collect data for each tree according to requirements on the [Census Instructions](#), being sure to keep track of the data associated with each tree. This data will go into a table which will accompany the map.

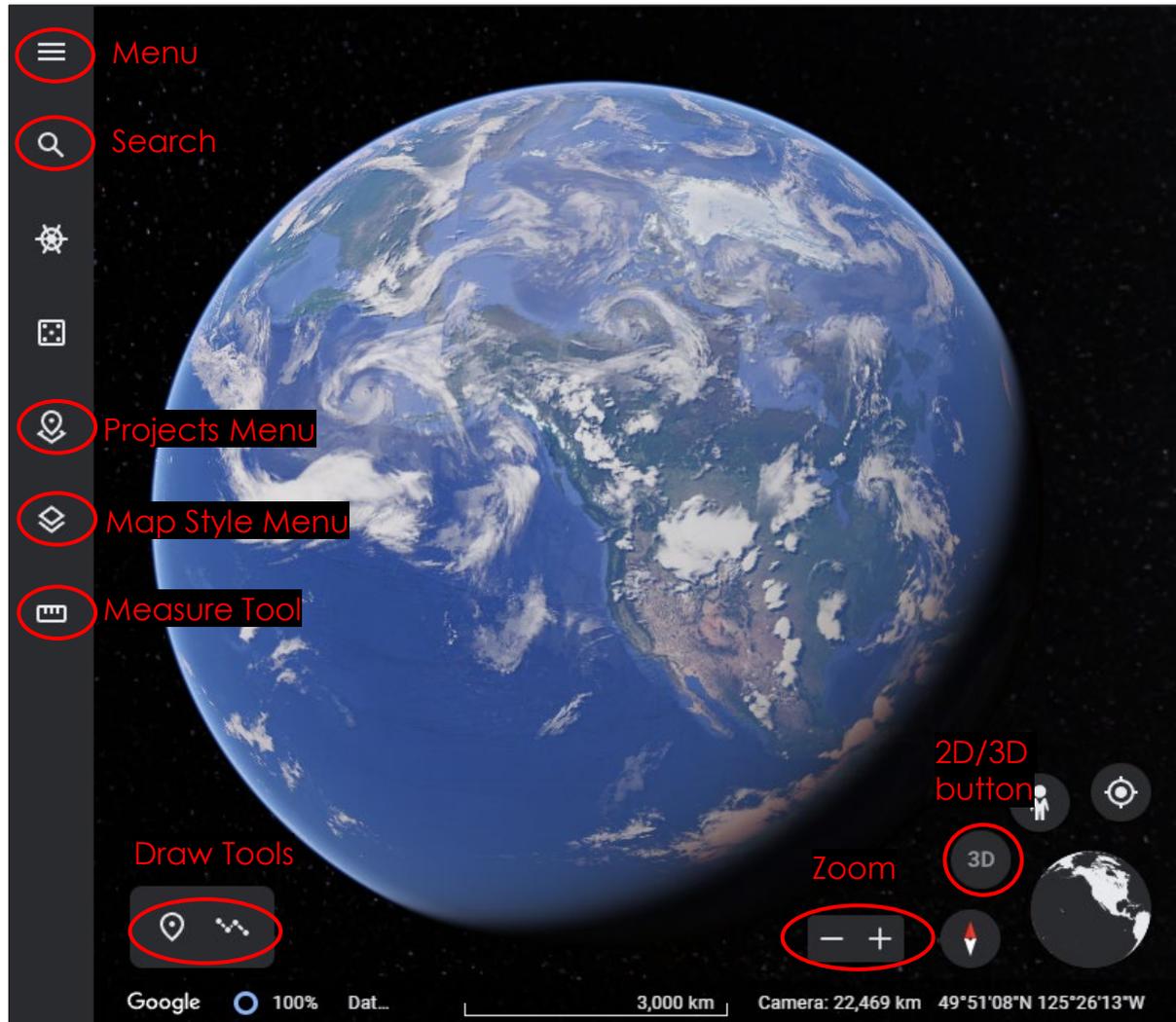
## Step 1: Collect data (Cont.)



Western Joshua Tree Fruit By Robb Hannawacker

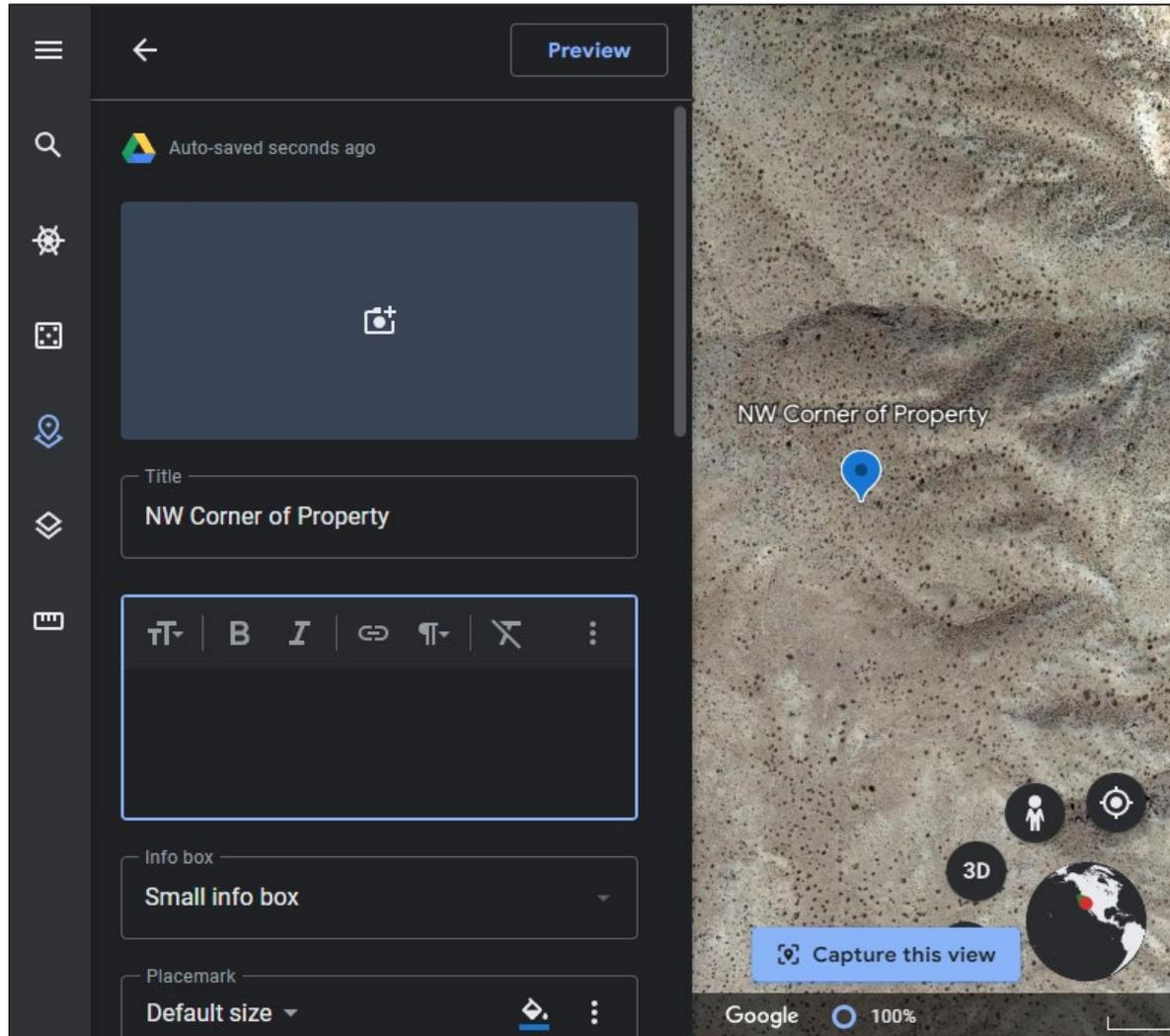
- If your project site is not easily identifiable by satellite imagery, you can collect the coordinates of the boundary corners using a GPS device (such as those used for hiking or backcountry navigation) or cell phone with Location Services to record the required coordinates.
- Many free smartphone apps are available to help you collect GPS coordinates, such as Google Maps, Apple Maps, Strava, Avenza, etc. Guidance on best methods for collecting and viewing locational data should be available online or directly in the app. Touching and holding your zoomed-in location in the Google or Apple Maps app displays the coordinates of that location.

Step 2: Open Google Earth Web and familiarize yourself with the layout.



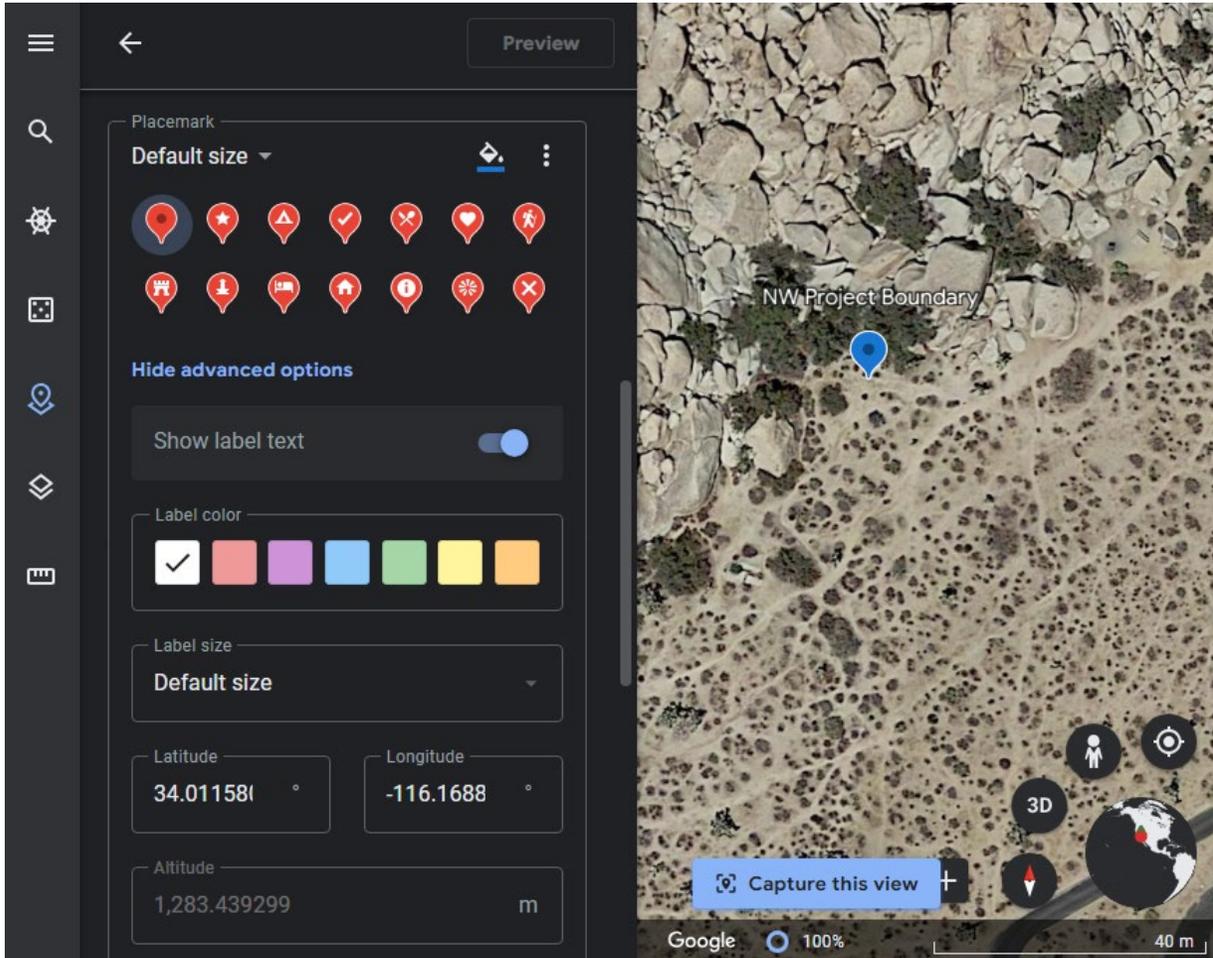
- Go to <https://earth.google.com/web/>.
- Tools and Menus
  - Menu – Used to sign in (you will need a Google account).
  - Search – Used to find locations on the map using addresses or lat/long coordinates.
  - Projects Menu – Organizes projects (each map will be stored as a project).
  - Map Style – Sets general map format.
  - Draw Tool.
    - Placemark – point features
    - Line or Shape – lines or polygons
  - Zoom – zooms in or out (you can also use the scroll wheel on your mouse).
  - 2D/3D button – switches between 2D and 3D view. For the clearest maps, click to switch it to 2D (it will read “3D” when it is in 2D mode).

## Step 3: Create Project and input point.



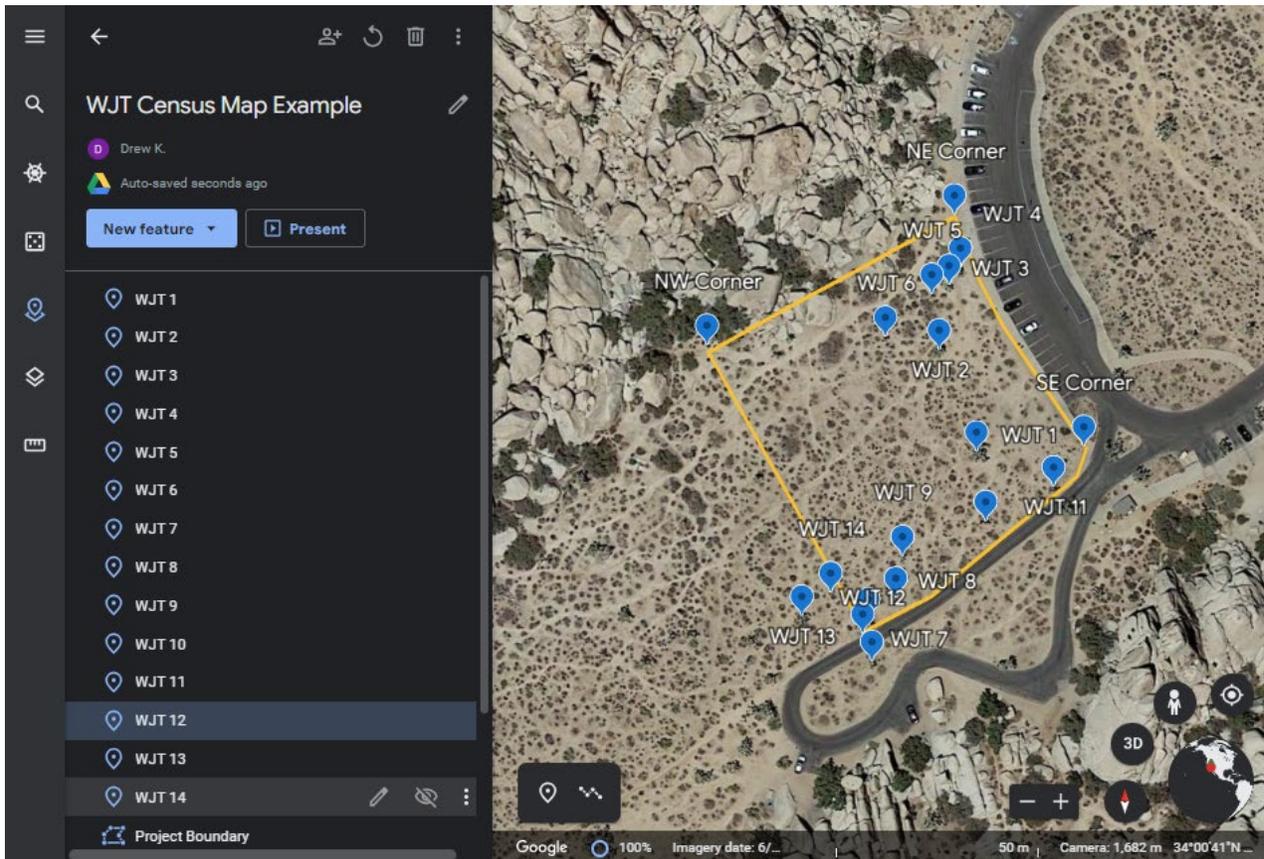
- Using search tool, navigate to approximate location of project.
  - Enter values in lat, long order (i.e. 35.6206, -115.941).
  - Because all longitudes are negative in California, be sure to put a “-” sign in front of the longitude value.
- Select the placemark tool  and click on the map to place a project boundary point (we’ll move it to the proper location shortly).
- The system may ask you to create or choose a project. Initially, create a project, then choose the same project each time thereafter.
- After you create or select a project, a window will appear asking you to name the placemark. Do so and then leave this window open and move on to Step 4.

## Step 4: Move points to proper location and draw remaining points.



- Scroll halfway down in the window from Step 3 and click on “Show advanced options.”
- In the window that appears, enter latitude and longitude of your collected points. Leave all other values at their defaults. Hit “Enter.”
- When you enter the value, the point will move to its proper location. If necessary, zoom/pan to see the point. Click the back arrow in the top left corner of the window to continue adding more features.
- Repeat to enter remaining property and western Joshua tree points, naming the tree points with the ID numbers (ex. WJT 1, WJT 2, etc.) that will be used in the table. If you make a mistake and enter a feature in the wrong place, just leave it – we will delete it later.
- Close windows by clicking on the left arrow at the top. You may need to click on the “Project” menu button to close that window.

## Step 5: Draw Project Boundary

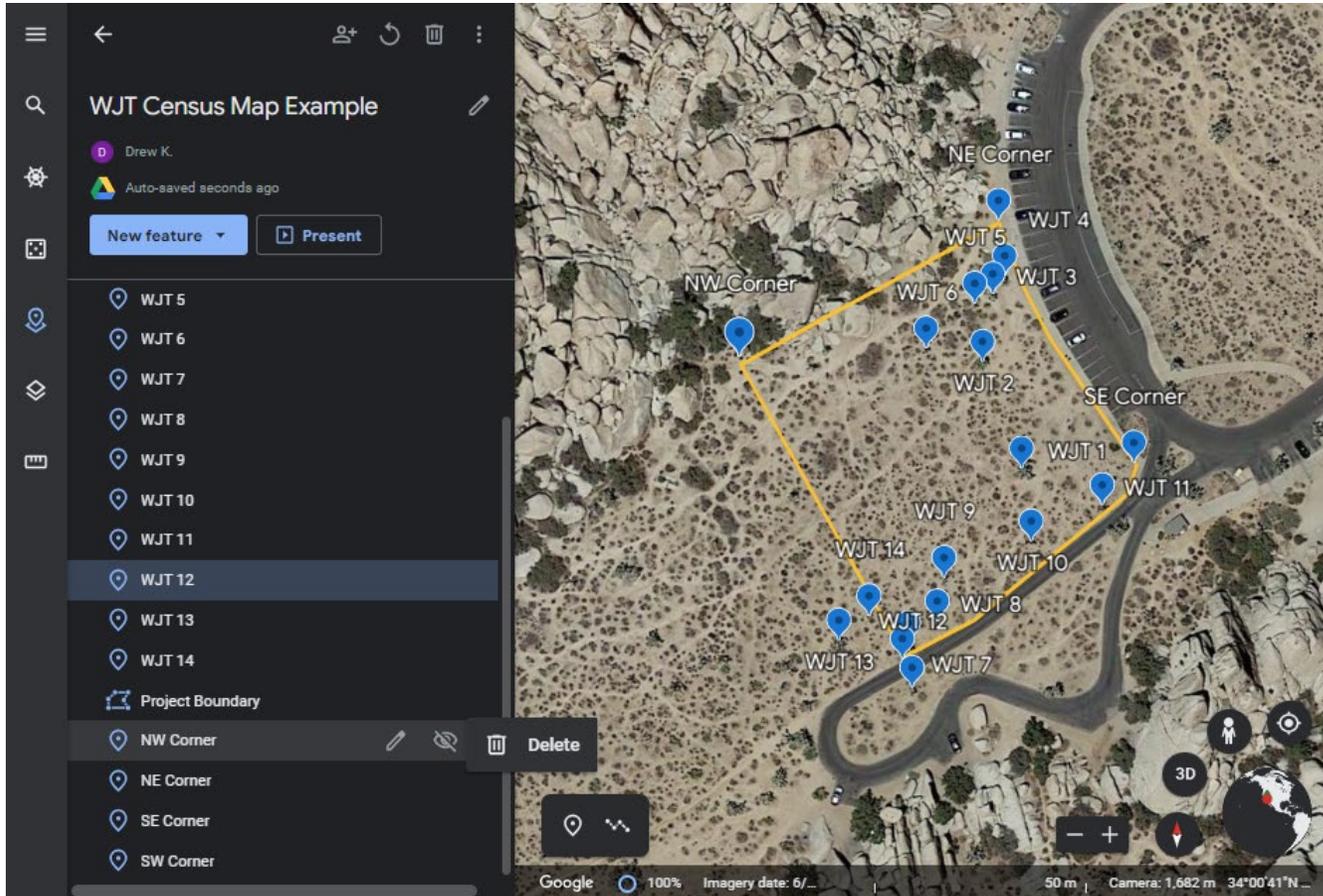


- You should have a map with labeled boundary points and western Joshua trees.
- Select the “Draw Line or Shape”  tool and click on each boundary point, in order, to create a polygon. When you get back to the first point, click once in the shaded area to close the polygon.
- In the window that opens, choose your project and name the feature, leaving the window open.
- Scroll down and in “fill color” change the “25%” value to “0%”. Leave all other values the same.

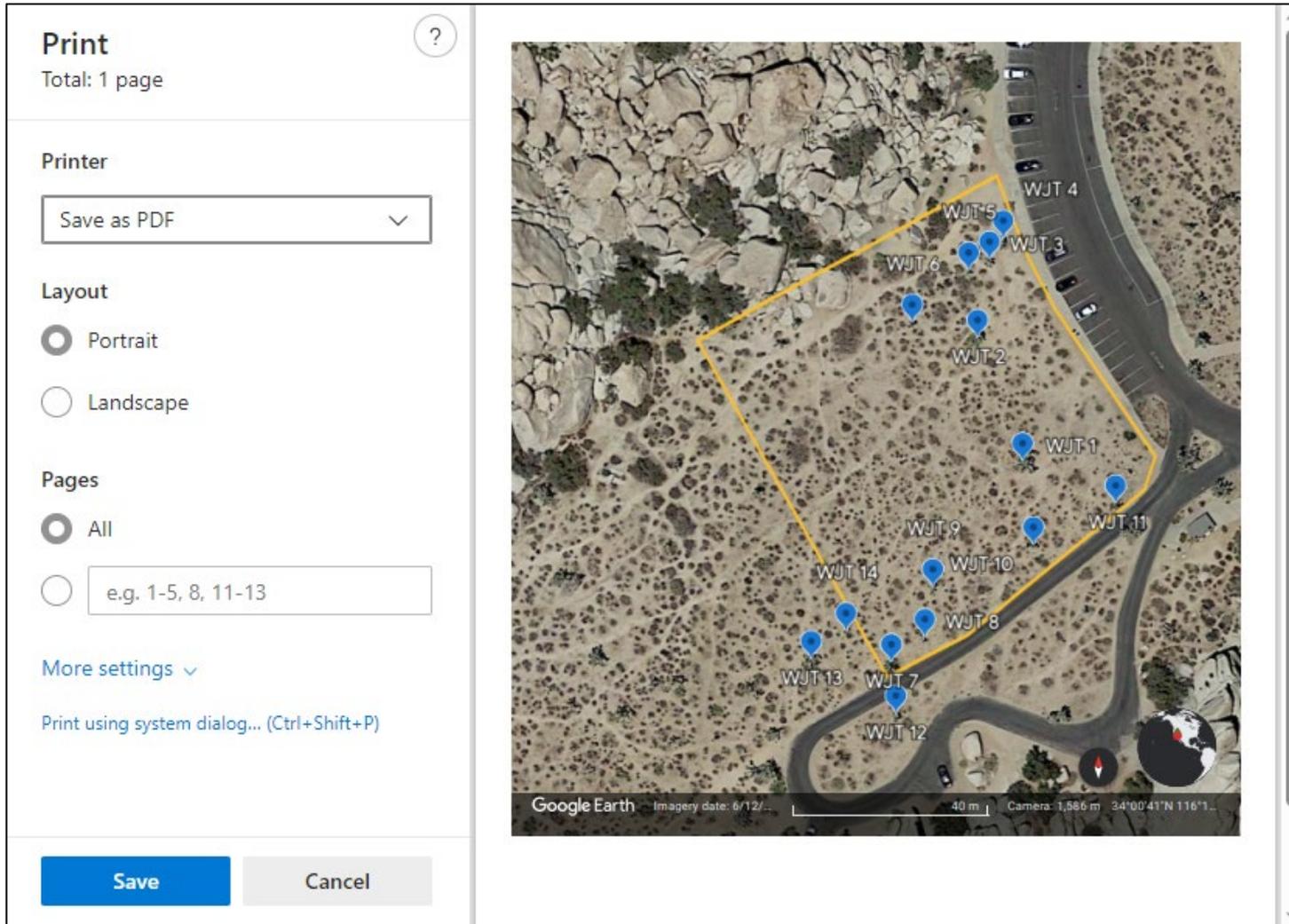
## Step 6: Clean up map

You may have created features you don't need. To delete any extra points:

- Open the “Projects” menu and click on the name of your project. Another window will appear listing all of the features on your map with their labels.
- Click on a feature and move the mouse to the right to click on the 3 dots. Click on the garbage can that appears to delete the feature.
- If you want to edit any names, click on the feature and choose the pencil tool to open the edit window.



# Step 7: Print Map



- Close out of any menus on the left side so only the map is displayed.
- Click the 2D  icon, if not selected already, to flatten the view. It will switch to 3D when it is in 2D mode.
- Click Compass  icon to orient the map. Make sure the red arrow is pointing up.
- Zoom until the property fills about half of the screen.
- Hold down the ctrl (or “cmd” for iOS) key and hit “p.”
- Choose “Save to PDF” and select your destination to download a copy of the map.