

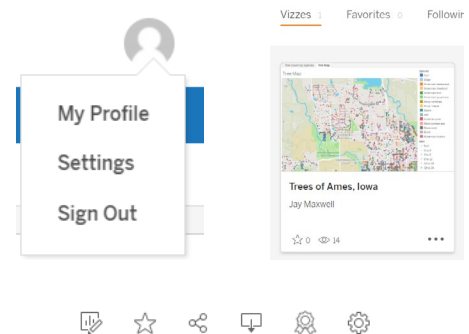
## Mapping Ames Trees in Tableau

Tableau Public is a leading data visualization tool that helps people see and understand their data. It offers a range of features for creating interactive and shareable dashboards. One of its standout capabilities is handling spatial data, which refers to information about the physical location and shape of objects. Spatial data is crucial for mapping and geographic analysis, enabling users to visualize and analyze data in a spatial context.

In this tutorial, we'll explore how to use Tableau Public to create maps using the city of Ames' tree inventory data. We'll start by plotting the tree locations on a map using their latitude and longitude coordinates. From there, we'll experiment with different visualizations to display information such as tree species and Diameter at Breast Height (DBH). These visualizations will help us uncover patterns and insights about the distribution and characteristics of trees across the city, transforming raw spatial data into meaningful visual stories.

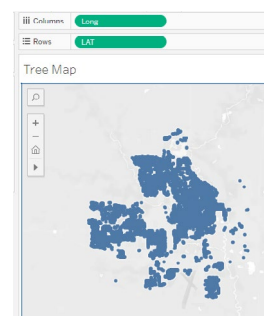
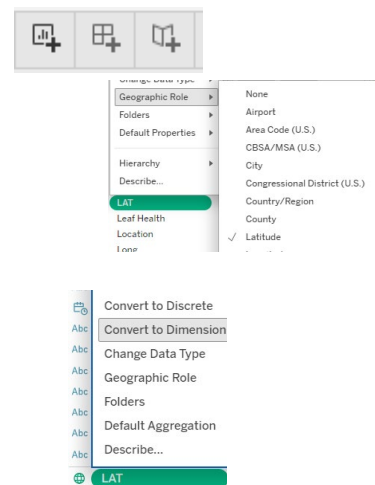
### 1. Getting Started

- Log into Tableau Public, click on the user icon in the upper right corner of the window and select **My Profile**.
- Select the **Ames Trees** visualization from the **Vizzes** list.
- Click on the **Edit** button from the ribbon above the viz to enter the workbook editing mode.



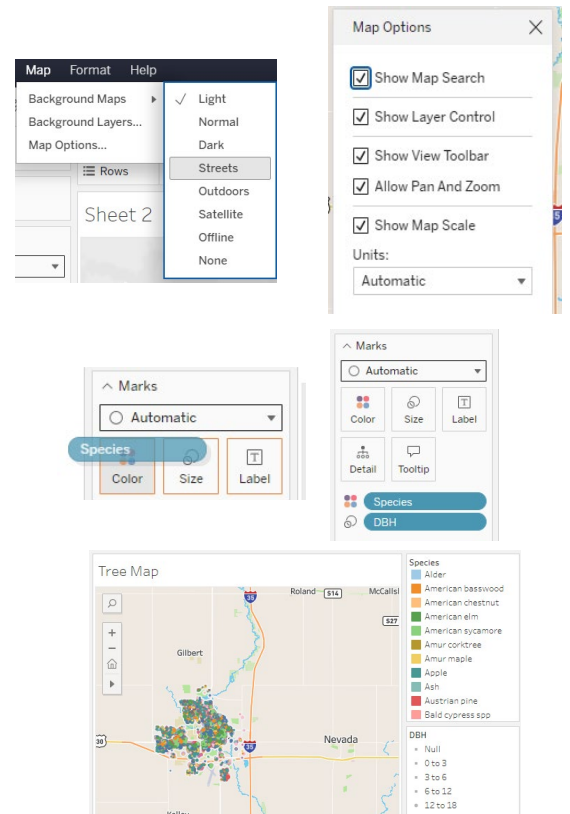
### 2. Creating a Basic Map

- Click on **New Worksheet** at the bottom of the window. This new page will hold our map. Click on the **Sheet 2** tab and rename it **Tree Map**.
- Look at the bottom of the **Data** tab and notice we have two fields symbolized with globes: **LAT** and **Long**. Right click on **LAT** and look at **Geographic Role**. There should be a check by **Latitude**, indicating that Tableau knows this field represents geographic data.
- Right click on **LAT** again, this time select **Convert to Dimension**. Repeat this on **Long**. Both fields will be moved with dimension group and their icon color will change to green.
- Next, drag the **Long** dimension to the **Column** field at the top of the worksheet, then drag the **LAT** dimension to the **Row** field. Tableau will realize you are using geographic data and add a map background to your worksheet. The basic map produced here shows a blue dot for each tree in our data set. Why do you think there are several large areas across the city without any trees in our map?



### 3. Customizing the Map

- Change the **Background Map** (often called a Base Map) by going to the **Map** menu and selecting **Background Maps**. Try selecting different options to see how they differ.
- Return to the **Map** menu and select **Map Options**. You can enable or disable certain interactive map components from this screen. Check the **Show Map Scale** box.
- Drag the **Species** field from the **Data** tab to the **Color** box in **Marks**. A legend will appear to the right showing repeated colors for different species. This is due to there being more species of trees in our data than Tableau has colors. This is not ideal, but will be suitable for this lesson.
- Click on the **Size** box in **Marks** and change the **Mark Size** to 5-10%. Then drag the **DBH** field from the **Data** tab to the **Size** box in **Marks**. DBH (Diameter at Breast Height) is the diameter of the trunk at 4.5 feet from the ground. Our DBH data is not an exact measurement - it is a categorical entry placing each tree into a range of values.



### 4. Interacting with the Map

- Like many web maps, you can change the zoom level by using the scroll wheel on your mouse. You can also zoom in to a specific location by Double-clicking your pointer on the map, and you can zoom out by Shift-Double-clicking.
- Zoom in to a specific region by selecting the **Zoom Area** tool from the **View** tool bar and drawing a selection area on the map.
- Pan around the map by selecting the **Pan** tool from the **View** tool bar and clicking and dragging the map.
- You can select data points on the map using the Rectangle, Radial, or Lasso selection tools. Try out each of those tools by zooming to different parts of town and selecting points. To un-select data points, click an empty location outside of the selection area.



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