

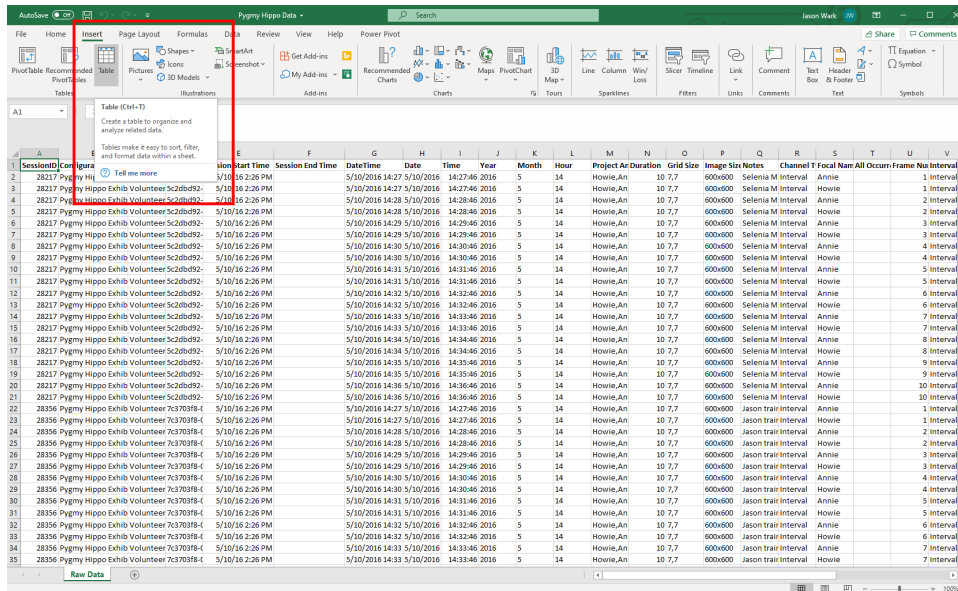
Guide to Creating Heat Maps in MS Excel

6/24/2020

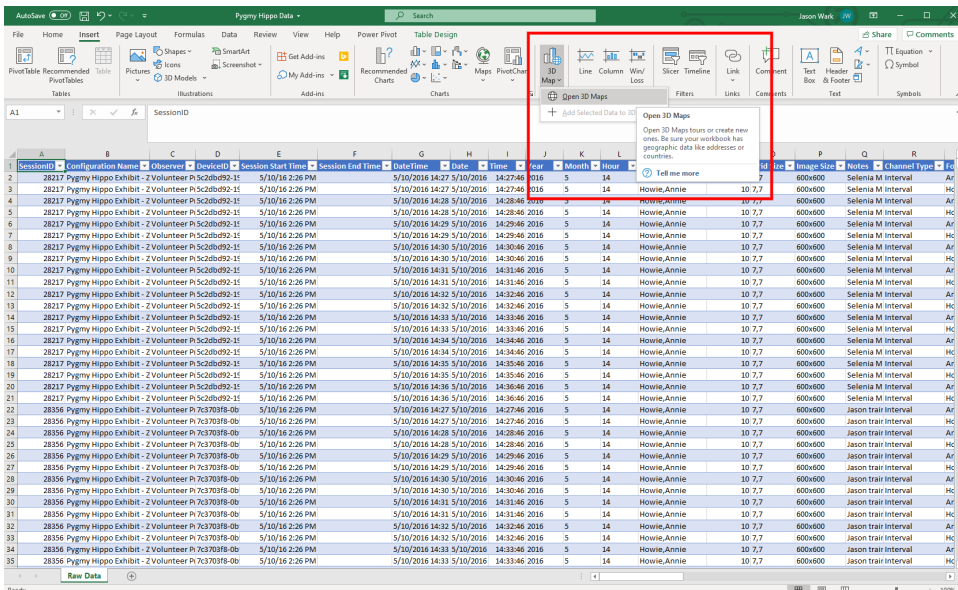
Creating Heat Maps in MS Excel

Follow these steps to create custom heat maps using your exported ZooMonitor data and MS Excel (2016 or later). Before starting, please be sure to make a backup of your data.

01. Select any cell in the sheet and go to Insert > Table. Make sure "My table has headers" is checked and click OK.

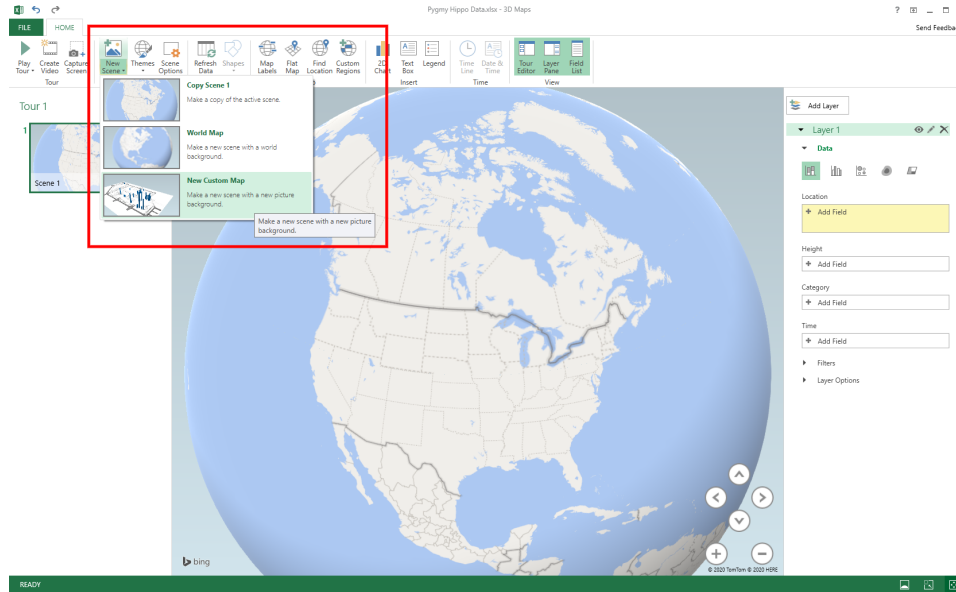


02. Select any cell in the table and go to Insert > 3D Map > Open 3D Maps (if greyed out, make sure the file is saved as an excel workbook with .xlsx file extension and you are using Excel 2016)



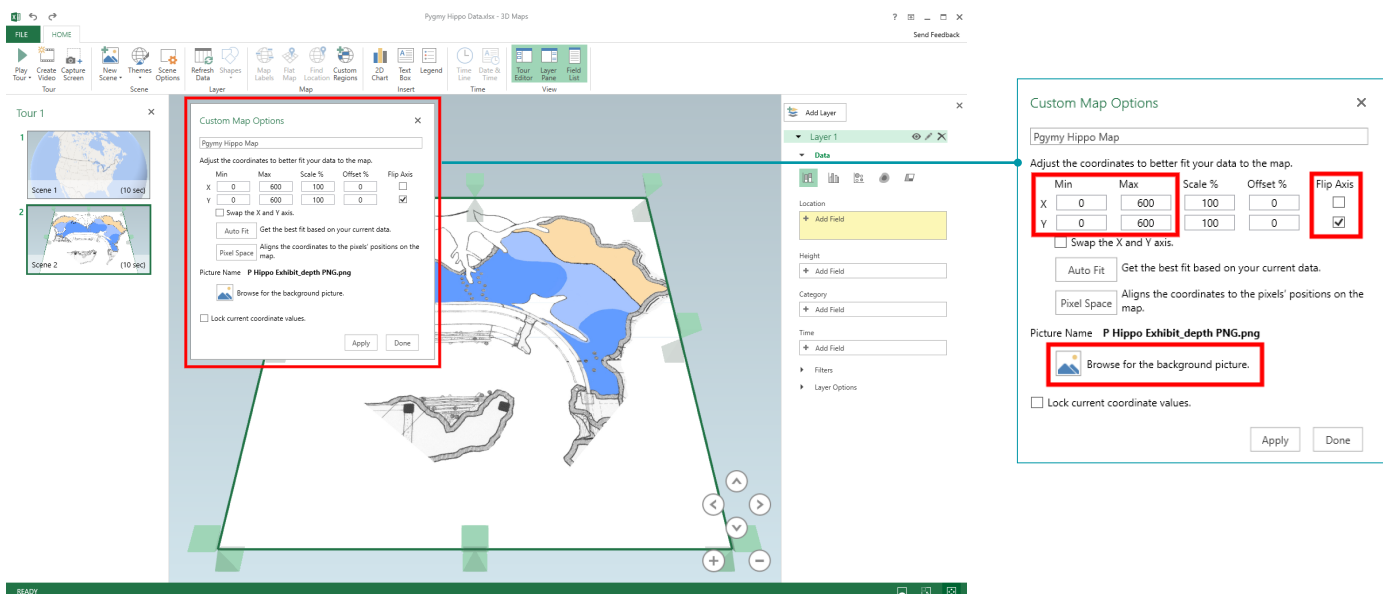
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03. 3D Maps will open in a new window and load data from your table into the Fields list window. Click New Scene then select New Custom Map.



04. Enter Custom Map Options values:

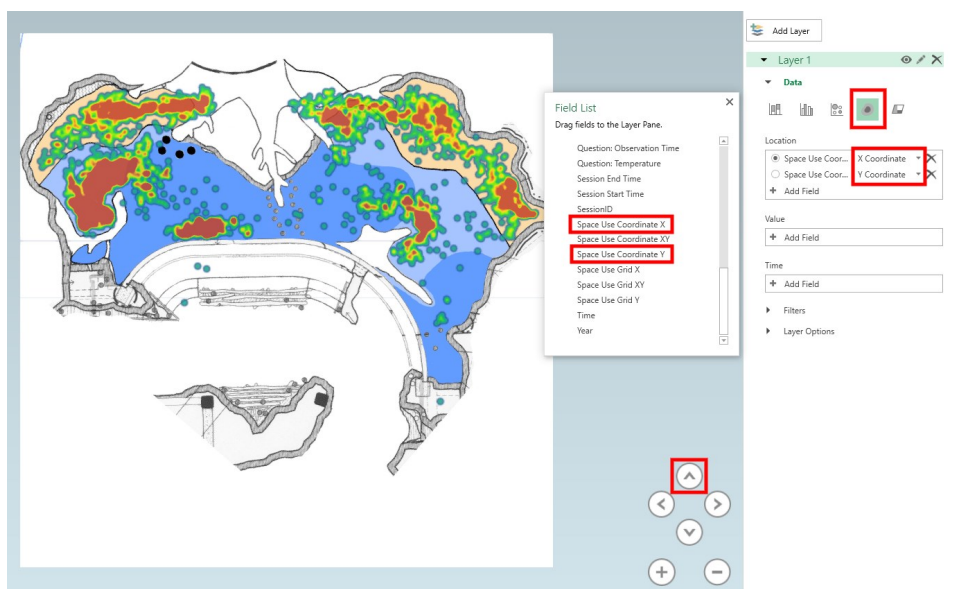
- Min=0 and Max=600 for X- and Y-axes fields
- Check Flip Axis box for y-axis field
- Click Browse for the background picture and navigate to your map image file



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05. Configure the heat map:

- In Layer pane, click the heat map visualization under the Data menu.
- Then, drag Space Use Coordinate X and Space Use Coordinate Y to the Location field.
- In the Location field, click Select One for the drop-down for the Space Use Coordinate X and Y values, and set those variables to X Coordinate and Y Coordinate.
- Change the perspective of the image by clicking the up arrow in the bottom right of the screen to view a top-down version of the heat map.



Note: The density of clustering is determined by your zoom settings. You can zoom in to see individual data points or out to see broad patterns.

How to save your heat map image:

- Click Capture Screen in menu bar to copy the heat map image to your clipboard. You can then paste the map into another program to save it.
- You can also use the Snipping Tool in Windows to take a screen capture of the heat map.

Refreshing data:

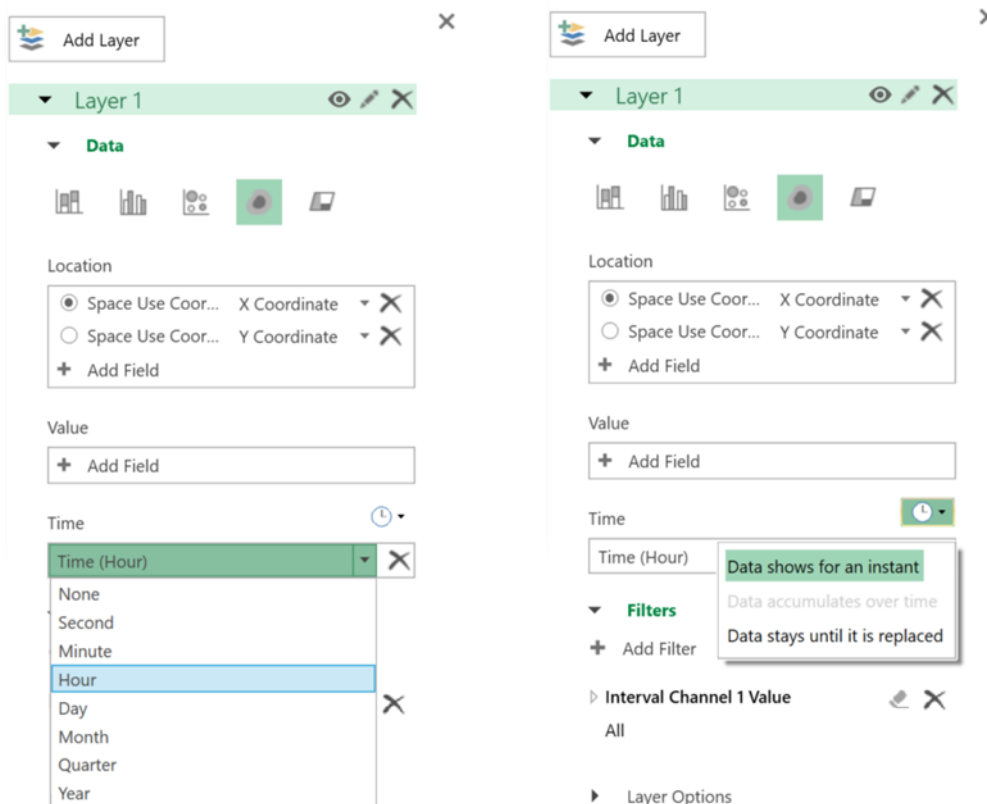
- Click Refresh Data in the Layer section of the menu.

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Optional Advanced Analysis Ideas

Animate the heatmap by adding a date/time variable:

- Drag a date/time variable to the Time field in the Layer pane.
- Click the drop-down menu to select the time category.
- Click the clock icon and select Data shows for an instant.



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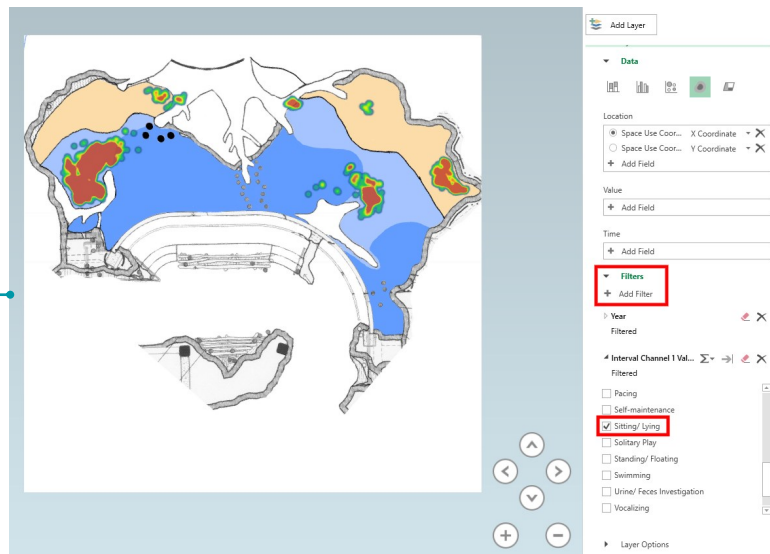
Optional Advanced Analysis Ideas

Create layers and filters to highlight specific individuals or behaviors:

- Expand the filter menu in the Layer pane and drag and drop additional variables to filter the heat map. For example, you can choose Interval Channel Value fields and/or Focal Name to filter the heat map by behaviors or focal individual.
- You can also create additional layers by clicking Add Layer at the top of the Layer Pane to show multiple individuals or behaviors on the same heat map.

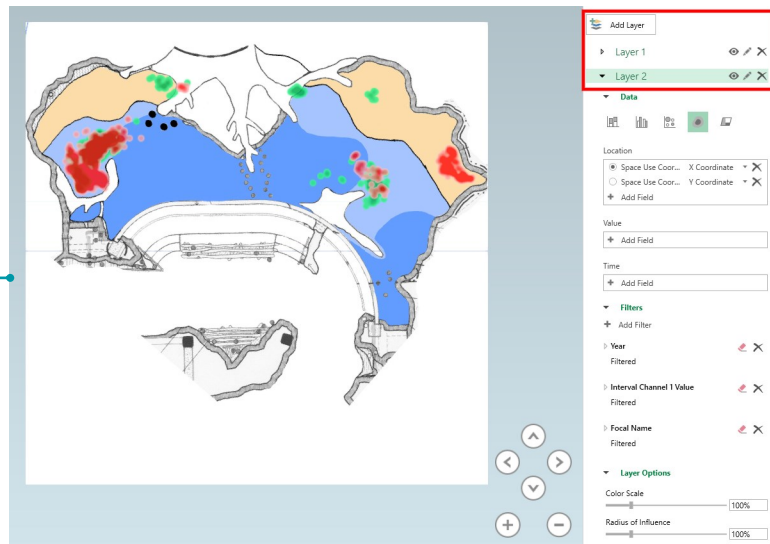
Example 1

- This heat map is showing resting areas for two pygmy hippos.
- To do this, the Interval Channel 1 Value was added as a filter and the Sitting/ Lying behavior was selected.



Example 2

- This heat map is showing resting areas for a female (red) and male (green) pygmy hippo.
- To do this, a second Layer was added and Layer 1 was filtered for the female hippo and Layer 2 was filtered for the male hippo.
- The Opacity of Layer 1 was adjusted to 90% to allow visibility of Layer 2 when space use data overlapped.



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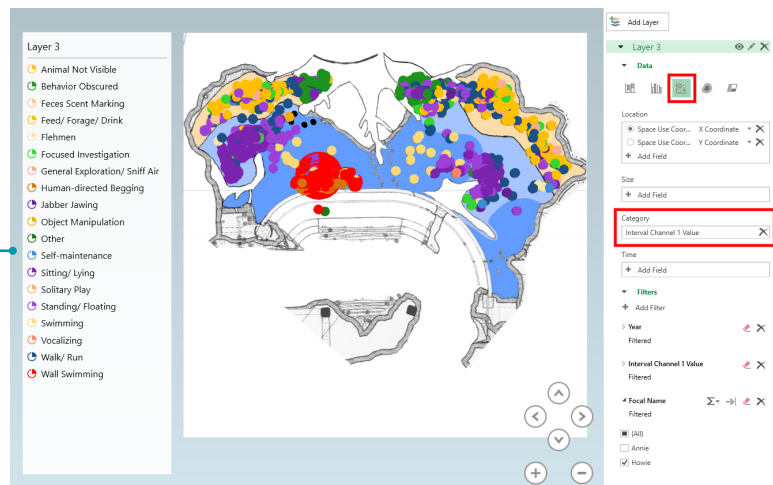
Optional Advanced Analysis Ideas

Use different chart types to display multiple behaviors or individuals:

- In 3D maps, you can also generate Bubble charts and Column charts to visualize multiple behaviors or individuals on the same heat map.
- The Bubble chart displays your circles, with the size of the circle based on your data. By default, the size of the circles will be based on a count of occurrences for each XY coordinate location.
- The Column chart similarly displays your data as columns, with the column size based on your data (column size is also determined by the count of occurrences for each XY coordinate).

Example 1

- This Bubble Chart is showing the locations of different behaviors for a male pygmy hippo.
- The Interval Channel 1 Value variable was added to the Category field.
- In Layer Options, the Size of circles was adjusted to 50%.



Example 2

- This Column chart is showing the locations of different behaviors for a female pygmy hippo.
- The Interval Channel 1 Value variable was added to the Category field.
- Click the down arrow in the bottom right of the map canvas to rotate the map to view the column height.

