



## Adding X, Y Coordinate Data in ArcGIS 10.3.x

X, Y coordinate values describe discrete point locations on the surface of the earth and can be imported from a GPS device or spreadsheet and visualized in a number of ways. This guide provides instructions for importing and visualizing coordinate values in ArcGIS 10.3.x.

### Step 1 Format data

Begin by opening the file containing the coordinates in Excel or another spreadsheet program. Ensure that the first row contains short, descriptive column headings without special characters or spaces. Your data can contain as many columns as you'd like, but the most important fields in this process are those containing your coordinate values. The example below shows a basic data file with an ID field and the associated UTM coordinate values (eastings and northings) for each point.

**Note:** It is essential that you know the coordinate system that is represented by the values in the table, i.e., the coordinate system used to capture the values with a GPS device.

1	LOC_ID	X	Y
2	0	757577.10000	4872713.00000
3	1	757311.37500	4871942.75000
4	2	729190.60000	4871878.00000
5	3	752309.10000	4869616.00000
6	4	750884.75000	4869306.50000
7	5	732161.50000	4870321.00000
8	6	729492.70000	4871750.00000
9	7	751822.20000	4869752.00000
10	8	756003.90000	4871091.00000

Check that the cells containing your coordinate values are in numeric format. This is important – lat/long values MUST be in decimal degrees. If your data has been entered in degrees, minutes, seconds (DMS) format, then it will be necessary to convert the values to decimal degrees. The conversion formula is as follows:

$$\text{Decimal Degrees} = \text{Degrees} + ((\text{Minutes} / 60) + (\text{Seconds} / 3600))$$

Once you are sure that your data has been formatted appropriately, save the file to your desired format (we recommend Excel or CSV) using a short, descriptive name.

## Step 2 Add X, Y Data to ArcMap

Open ArcMap and create a new, blank map document. Click the *Add Data* button.

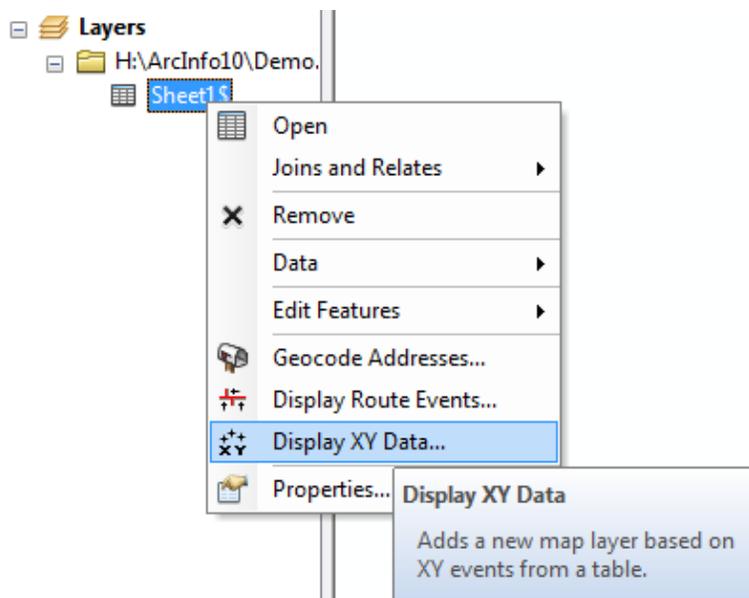


The *Add Data* dialog will display only those directories to which a connection has been established in ArcMap or ArcCatalog. If you are able to see the drive in which your work has been saved, browse to the file containing your coordinates, and click *Add*. If you can't see the drive where your data resides, create a connection using the *Connect to Folder* button.



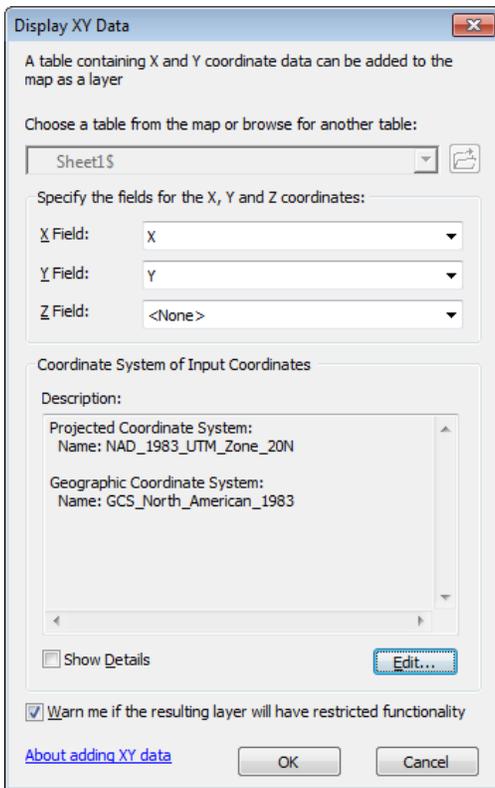
The file will appear in the ArcMap table of contents. Note that the file must be closed in all other applications (Excel, Notepad, etc.) prior to adding it to ArcMap.

To display your coordinate values as points, right-click the file name in the ArcMap table of contents and select '*Display XY Data...*'



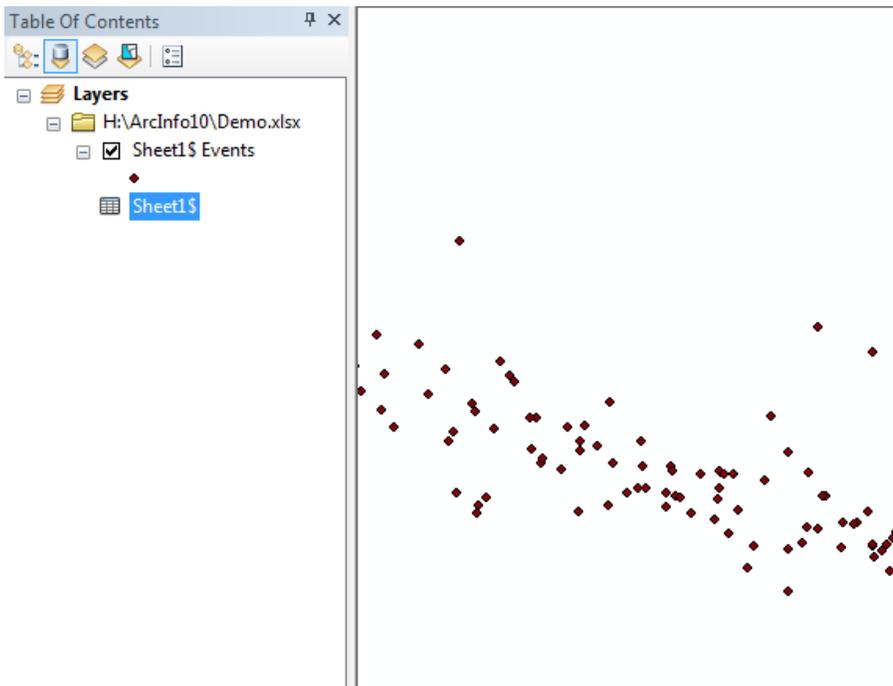
The *Add XY Data* dialog will open (see below). Specify the fields that contain the X and Y coordinates, with X corresponding to longitude (easting) values and Y corresponding to latitude (northing) values.

Set the desired coordinate system by clicking the '*Edit*' button at the bottom of the dialog screen and browsing to the coordinate system of your data.



Click OK to close the Spatial Reference Properties dialog, and click OK again to process the request. You will receive a warning that the resulting table does not have an Object-ID field – click OK to close the message – we will create an Object-ID field in subsequent steps.

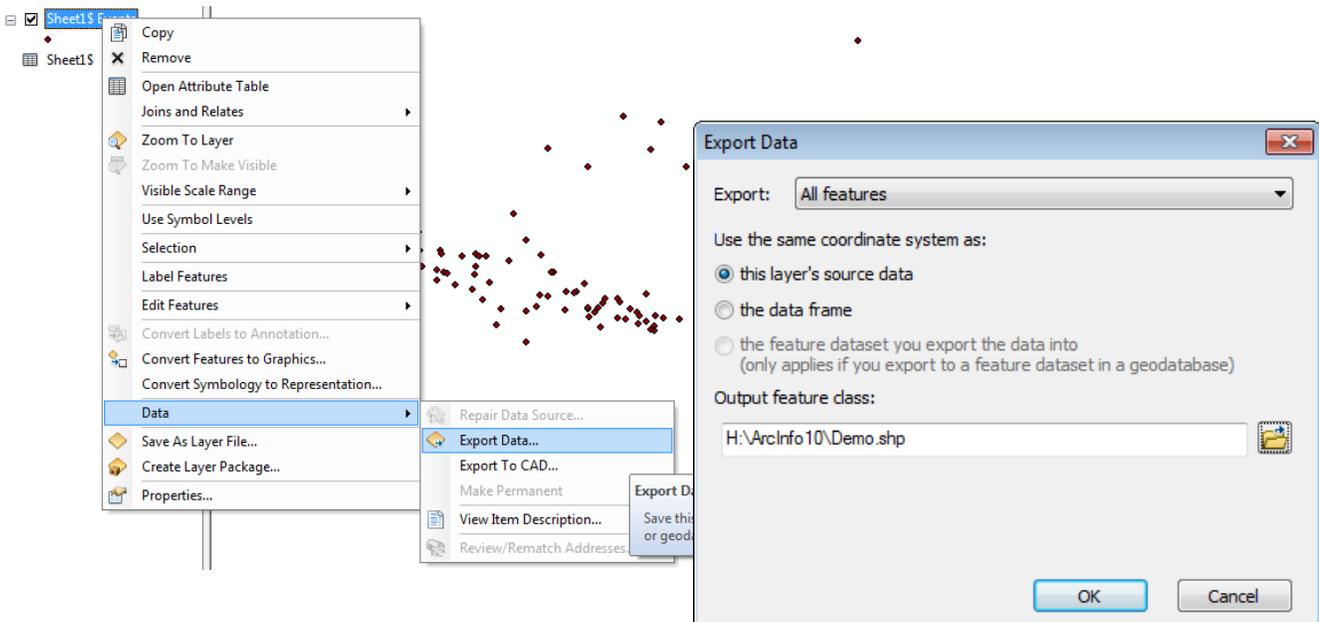
Your XY data will appear as a point event layer on your map document!



### Step 3 Export data

Although the X, Y data is visible on your map, it currently exists only as a temporary event layer at this point in the process.

To create a permanent file that can be used as input for calculations and analyses, right-click the event layer name in the table of contents and select *Data > Export Data*. Use the resulting Save dialog to save the file in the desired format to your working directory.



Choose Yes when prompted to add the exported data to ArcMap.

A new file with the name you have specified is added to your directory as well as to the map document. You may now remove the original file and the event layer from your map document if you wish. Your new file is fully functional and can be added to multiple map documents, projected, or used in calculations, analyses and geoprocessing functions.

**For further assistance with this guide or other topics related to geospatial and/or statistical data and software, please contact us at [madgichelp@trentu.ca](mailto:madgichelp@trentu.ca).**