Thiessen Polygon Tutorial

The Thiessen polygons method, alternatively referred to as Voronoi polygons or Dirichlet polygons, is a geometric approach employed to divide a plane into distinct regions determined by their proximity to a specified set of points. Coined after Alfred Thiessen, this technique finds widespread use in spatial analysis, geography, and various fields where defining proximity zones is essential.

Buy a license and Installing

The installation procedure for this tool is straightforward and trouble-free. Once you've obtained a license, you'll gain access to a tool called "ID Finder." Share your unique ID with us, and in response, you'll receive the installer for the registered version. Running the installer will seamlessly install the tool without needing an additional activation key. Once installed, you can effortlessly access the device by clicking on the desktop shortcut or running "Thiessen Polygon Software" in your computer's program list.

Sample Data

If you require sample data, you can download it from our website. Additionally, the tool includes a convenient button for loading this sample data, which encompasses
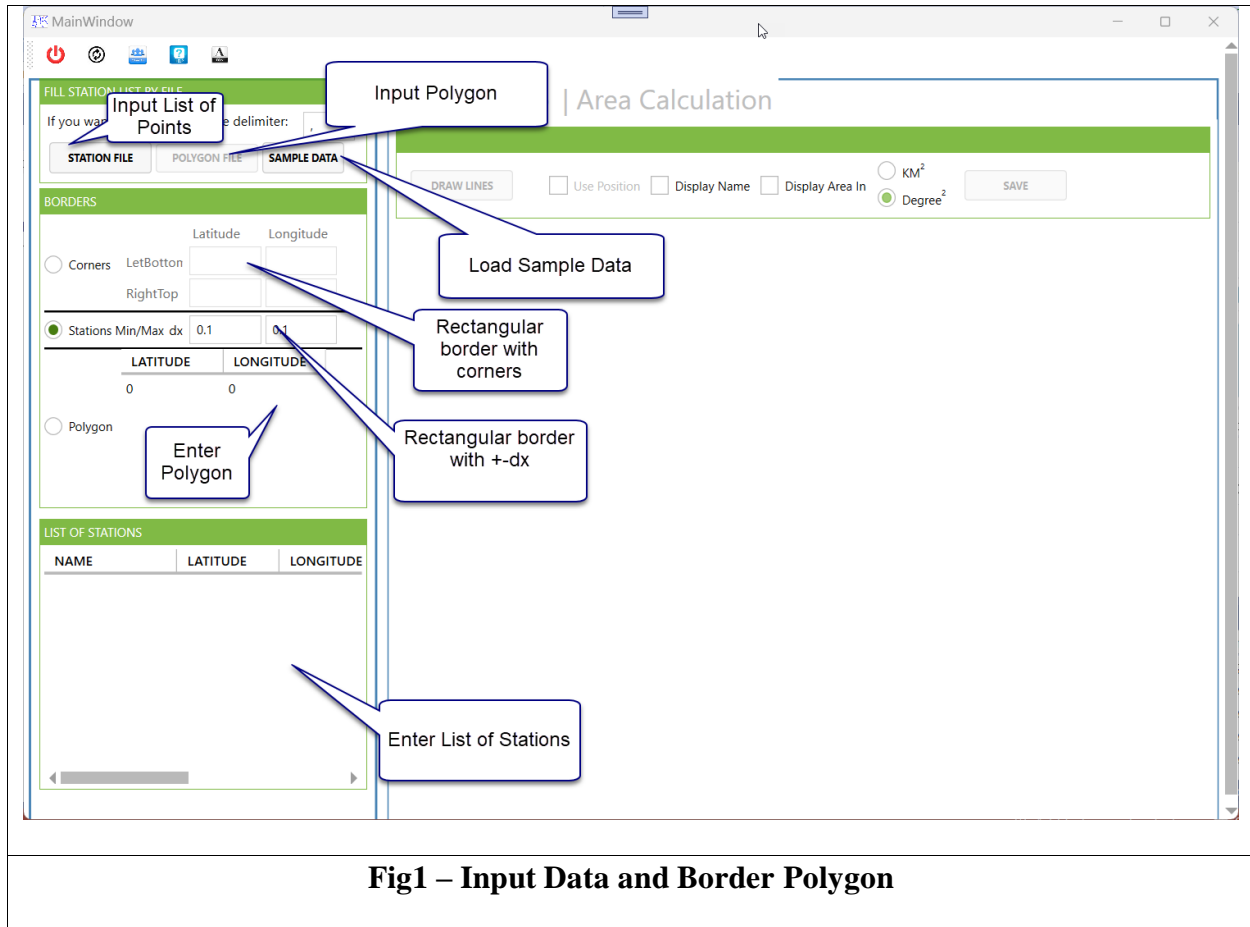
station names, latitude, longitude, latitude of text, longitude of text, and yearly rainfall data values. Also, the list of polygon's points with latitude and longitude.

Input Data

There are two datasets to input: the list of stations and border information. The station list can be entered manually or imported from a file, including mandatory fields such as 'Name of Stations', 'Latitude', and 'Longitude.' If you wish to specify the location of text on the chart, include values for 'Latitude of Text' and 'Longitude of Text.' Additionally, if you want to calculate the variable's average, provide the 'Value' item; otherwise, omit it.

When dealing with border information, you have various options. You can input a polygon with latitude and longitude through a file. Alternatively, you may define a rectangular border by entering its corners or automatically selecting it based on the min/max latitude/longitude of stations, plus or minus a small offset specified as 'dx.'

Fig1 – Input Data and Border Polygon

Thiessen Polygon Image

On the left-hand side, there are three tabs, and the first tab is used to draw polygons as images. If you have previously entered the latitude/longitude of text, the 'Use Position' checkbox will become active, allowing you to check it. You also have the option to display the name and area on the image. When using Degree2, the tool treats the data as a plane, resulting in the area being measured in square degrees or the square of the unit corresponding to your latitude (Y) and longitude (X).

However, if you select KM2, the tool considers the data as representing Earth, and the area is calculated in square kilometers. After clicking the 'Draw Lines' button, you can easily save the image to a file. Note that the default image dimensions are 806px width and 581px height, but you can adjust the size and DPI (Dots per Inch) during the saving process.
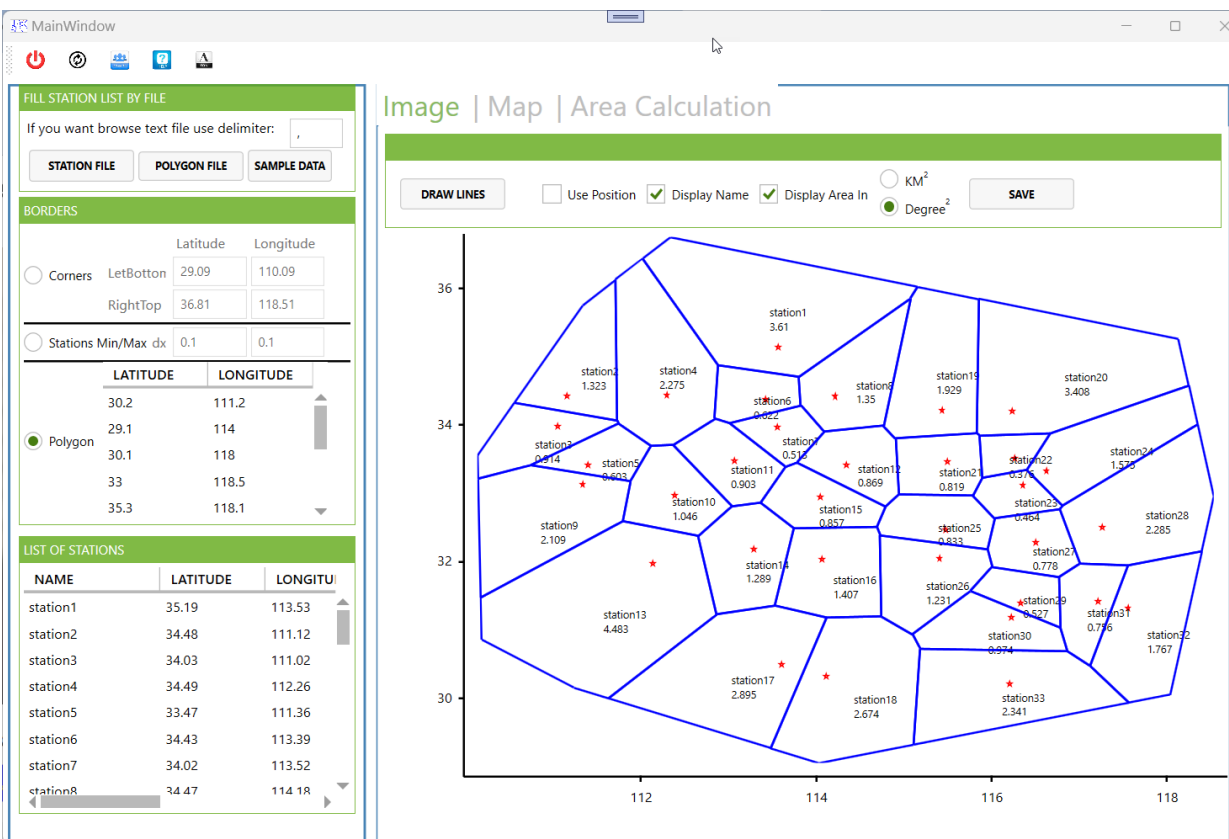

Fig2 – Thiessen Polygons as Image

Thiessen Polygon Map

The second tab is similar to the first tab but with an additional feature for maps. You can now change the map tile by selecting from a dropdown list in the combobox.
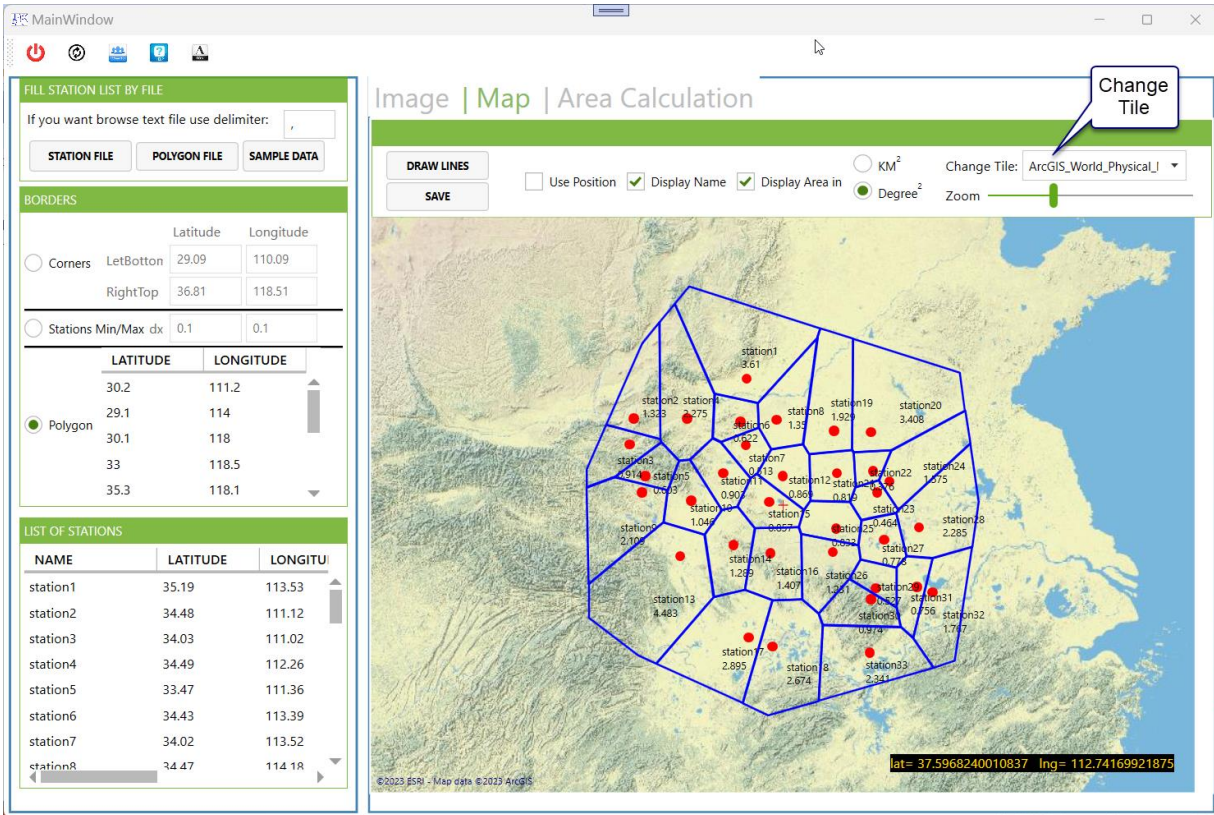
Fig3 – Thiessen Polygons as Map

Area Calculation

On the third tab, you can view and export the area for each station in square kilometers and square degrees. This tab will populate after you draw the polygon lines in the first or second tab.

If you have entered values in the list of stations on left-side, you can calculate the weighted average of the station values in this tab. This weighted average can be in square kilometers or degrees.