

Assignment 1 : Surface Modeling

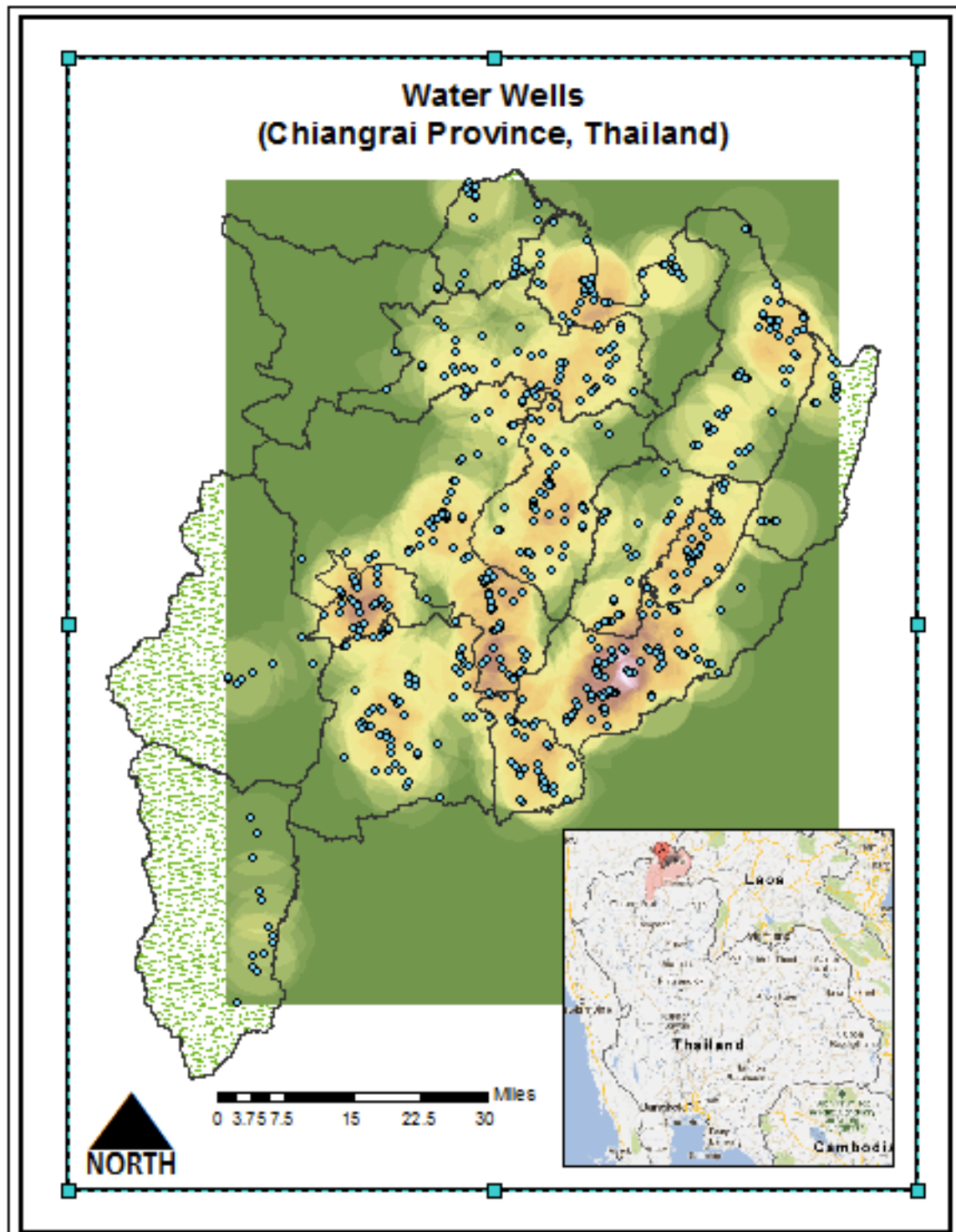
Surface Modeling is a method used to model the surface of a phenomenon from analyzed digital data. In this assignment, Density Calculation method was chosen. Searching out needed data is the first step in the process. All data in this assignment are analyzed data of Chiangrai Province, Thailand. Three types of data were used comprising of Point or Sample point, Line and Polygon. Each sample point represents an exact position of water well. However, attribute was not used in this area. Its attribute represents the water well's code. Line and Polygon in this area show the edge or border of the province. The scope of this surface modeling focused on density of water well in Chiangrai Province. The purpose is to show where the most dense water wells in this province are, by districts(Amphoe). Chiangrai Province is located in the watershed area in the northern part of Thailand. It is partially the source of water for many provinces downstream. It is, then, suit to be a sample site for evaluating trend of water resource of the country.

At the beginning, all data were added to the table of contents in ArcMap. Spatial Analyst Tools as well as Density and Simple Density(Point Density) were added afterward. Secondly, a point data was selected and fill all other values in. Due to the fact that default values of Point Density would make the result data rough, then some values were rearranged. Output cell size was changed from 434.6 to 20 to keep surface more smooth. Radius was set at 7,500. These values were selected to convince that they are appropriate and reasonable for the area. An advantage of this custom setting is the estimation of the radius of water wells in order to find out a radial distribution of those points. The final step was setting a layer's properties. The classification of this surface was changed from 9 classes of range to 32 classes implicitly. Initially, value was given to every single point in the because lower amount of class would not show some points' values. That would deduct meaningful reliability of data, in case of this area. Moreover, the color ramp was changed for easy understanding and tasteful looking. Beyond those, a method in classifying was maintained as Equal Interval caused by the others did not perform properly.

Briefly, these are about generating a surface of water well in Chiangrai Province, Thailand. The data were regenerated and reclassified many times for the best result. The objectives are : to perform the density of water well in the area, and to estimate the radius and the distribution of each water well for as being a water supply source. In my view, simple density is a good way to generate a surface modeling. As it is mainly focused on the density, this surface modeling may very appropriate to be used in the real area or remotely evaluate areas.

Layers

- WELL Point
 - AMPHOE Arc
 - PointDe_Poi20
 - KernelD_Poin4
 - KernelD_Poin3
 - PointDe_Poi19
 - PointDe_Poi16
 - PointDe_Poi15
 - PointDe_Poi12
 - PointDe_Poin3
 - PointDe_Poi26
- <VALUE>
 - 0 - 0.000000009
 - 0.000000009 - 0.000000018
 - 0.000000018 - 0.000000027
 - 0.000000027 - 0.000000035
 - 0.000000035 - 0.000000044
 - 0.000000044 - 0.000000053
 - 0.000000053 - 0.000000062
 - 0.000000062 - 0.000000071
 - 0.000000071 - 0.00000008
 - 0.00000008 - 0.000000088
 - 0.000000088 - 0.000000097
 - 0.000000097 - 0.000000106
 - 0.000000106 - 0.000000115
 - 0.000000115 - 0.000000124
 - 0.000000124 - 0.000000133
 - 0.000000133 - 0.000000141
 - 0.000000141 - 0.00000015
 - 0.00000015 - 0.000000159
 - 0.000000159 - 0.000000168



Water Wells (Chiangrai Province, Thailand)

