My project will describe the technique of preparing "GIS-ready" data and will show how to map that data and conduct basic analyses using a geographic information system (GIS). I have downloaded and formatted real-time and historical earthquake data from the USGS site. They use latitude and longitude fields to plot the data in a GIS. They analyze patterns by querying records and overlaying datasets. The focus of project will be on earthquake prediction. I am examining earthquake distributions, monitoring current earthquake activity, and trying to predict where the next big earthquake will occur on Earth.

Goals completed:

1) Formatting data in preparation for GIS analyses.

2) Map and analyze geospatial information.

3) Interpret the results of GIS analyses to make predictions about where earthquakes will occur.

Last two goals are still not fully completed since I am having problems in transforming data into Arcview format. For that purpose I have used different tools specified under arc toolbox window, but still exact data was not appearing on the screen, due to the difficulties of having the same coordinate system. Now I am using a third party software which is ET Geowizards. This software is downloaded as a zip file and then it should be extracted at a specified location. Then in the customize tools, it should be added by clicking on the "add from file" tab. Through this software data from text files, comma delaminated files, or dbase files can be generated into arcview format and features like points, lines and polygons can be created. There are many useful functions like degenerate, through which we can find the coordinates of a line, point or polygon by giving the intended feature file.

Earthquake prediction:

Currently, it is not possible to accurately predict earthquakes in a timely fashion. It is a goal of this project to come-up with some conclusions, as well as understand that earthquake risk varies across the Earth. Because earthquake activity is associated with plate boundaries, some places on Earth have a greater likelihood of experiencing earthquakes than do other locales. Four major concepts are:

1) The risk of earthquakes striking any location varies on Earth. Proximity to plate boundaries is a major factor in determining risk.

2) The largest earthquakes happen at convergent plate boundaries.

3) Earth scientists study historical earthquake distributions and frequencies to come up with long-range forecasts that indicate the likelihood of earthquakes striking certain regions.

4) Although, accurate prediction of earthquakes is not yet possible, research continues in this area.

Queries to be discussed:

→What do we notice about the distribution of the earthquakes?

→Is the distribution of earthquakes random or are there any patterns?

→How does the distribution of earthquakes in one layer is different from the other?

→What type of plate boundary is associated with earthquakes with a magnitude of 7 or greater?

→If the earthquakes are mostly on the convergent plate boundary then what percentage of big earthquakes occur within 100 or 200 miles of convergent boundaries?

→Which places are overdue for an earthquake?

→Where on earth do most big earthquakes strike?

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