

Title: Geographic Information System

I used QGIS to perform a space/time study of earthquake activity over the last thirty days and mentioned the following insights:

Coastal Area: Coastal areas are highly susceptible to earthquakes, especially in areas close to the Pacific Ocean. The Ring of Fire, in the Pacific Ocean, is a well-known epicenter of seismic activity and is common to frequent, powerful Richter-scale earthquakes. The geological activities along tectonic plate borders make these coastal areas particularly susceptible to seismic activity.

Earthquake Occurrence and Population Density: A compelling finding from this analysis is that population density and earthquake occurrence are inversely related. Coastal areas with high population densities tend to have lower earthquake frequency. Highly populated areas are rarely the epicenters of seismic activity, even if earthquakes in these areas can be detrimental.

Categorization for Analysis and Data Layers: To understand the population's relation to seismic activity, I divided it into three classes to obtain an understanding of earthquake intensity. This provides identification of densely populated regions and their vulnerability to seismic activity. Furthermore, the division of earthquake intensity into low, medium, and high-prone zones showcases the discrepancy in impact magnitudes across global regions. I included data layers, such as roadways and waterbodies, to improve the analysis. This helps to evaluate the possible effects of earthquakes on infrastructure in detail.

In conclusion, this demonstrates the value of using GIS and using geographic data for clear geographical and temporal analyses of earthquakes. This highlights the higher danger linked to coastal areas, especially those near the Pacific Ocean, along with the link between population density and earthquake intensity. Understanding the effects of earthquakes and alertness was possible by classifying population and earthquake intensity and merging several data layers. The importance of building strong infrastructure and mitigating disasters is emphasized by this analysis.