

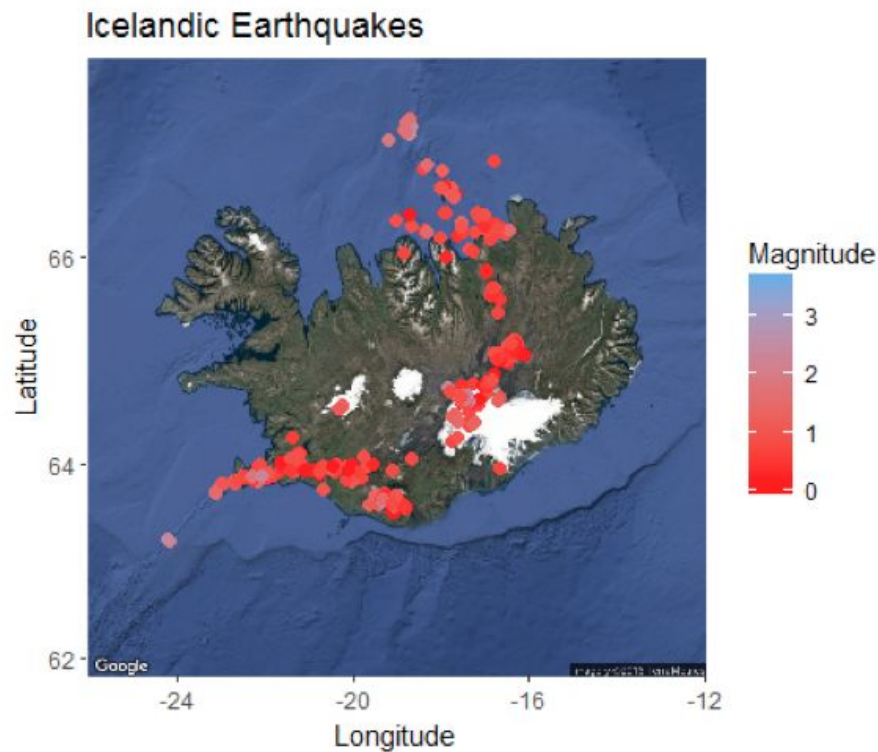
SUMMARY

The Icelandic Meteorological Office (IMO) site records near-real-time data about the earthquakes in Iceland. The dataset contains information about the longitude/latitude, depth, magnitude, and relative distance to known volcanoes, mountains, and towns. The online dataset is updated every five minutes and shows earthquakes occurring in the last 48 hours. The first two columns in the dataset represent the date and time (GMT) of the earthquake. Columns 3 and 4 denote the location of the epicentre. The next two columns focus on the depth and magnitude of the earthquake. Column 7 is the measure of earthquake quality and finally column 8 provides details on the location of the epicentre from a nearby location.

The official data citation for this set is: Icelandic Meteorological Office (2016). Whole country – earthquakes during the last 48 hours [Dataset]. Date accessed September 14, 2016. Retrieved from <http://en.vedur.is/earthquakes-and-volcanism/earthquakes#view=table>

Our primary target audience for this project are Southern Icelanders, public and private sector corporations, and tourists. In 2010, the volcano Eyjafjallajökull erupted and produced an immense ash cloud. As strong gales pushed the ash cloud west towards Europe, air traffic was shut down and planes were stranded in Europe. This brief period of inactivity impacted the economy as food and goods were unable to travel. Katla is larger than Eyjafjallajökull so there is much concern with its imminent eruption.

Our intention is to find a possible pattern in which these earthquakes occur with a view to identify which regions in Iceland are more prone to earthquakes to increase the awareness of Icelanders living in the areas that need to be avoided. This helps us in pointing out the potential 'high risk' areas across Iceland, thereby mitigating risks involved with earthquakes and volcanic eruptions. We also intend to determine a relationship between the magnitude of an earthquake and its distance from the nearest volcano as well as the relationship between depth and magnitude. This could help in locating regions close to a volcano's since it clearly draws a picture about the possibility of experiencing higher magnitude earthquakes as you move closer to the volcano. Examining depth will improve understanding of magma movements within volcanoes as well.



The above visualization represents regions of Iceland that are most prone to earthquakes. As we can see in the above plot, the southern, northern and central (towards eastern side) regions of Iceland have the most occurrences of earthquakes. The color-coded data points on the map also indicate the earthquakes with low to high magnitudes.

This visualization can be utilized when persuading southern Icelanders to continue funding geological research, continue monitoring the Icelandic Met Office for updates on earthquake activity, and consider relocating. Most Icelanders are aware of where potential eruptions may occur; however, they do not have access to monitoring tools, data, and software that the Icelandic Met Office has. If Icelanders desire updated information on potential eruptions, they must continue to fund the research.

Word Count: 494