

Report on Real Time Earthquake Location

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Report of Earthquakes occurred in the month of November 2020

1) Introduction:

National Center for Seismology maintains National Seismological Network of 115 stations each having state of art equipment and spreading all across the country. Using these stations during the period 01st -30th November 2020 a total number of 126 earthquakes have been located and disseminated from the center, out of which 123 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E.

2) Seismicity:

During the period, the density of earthquakes in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E; can largely be seen in Hindu Kush region, North Eastern part

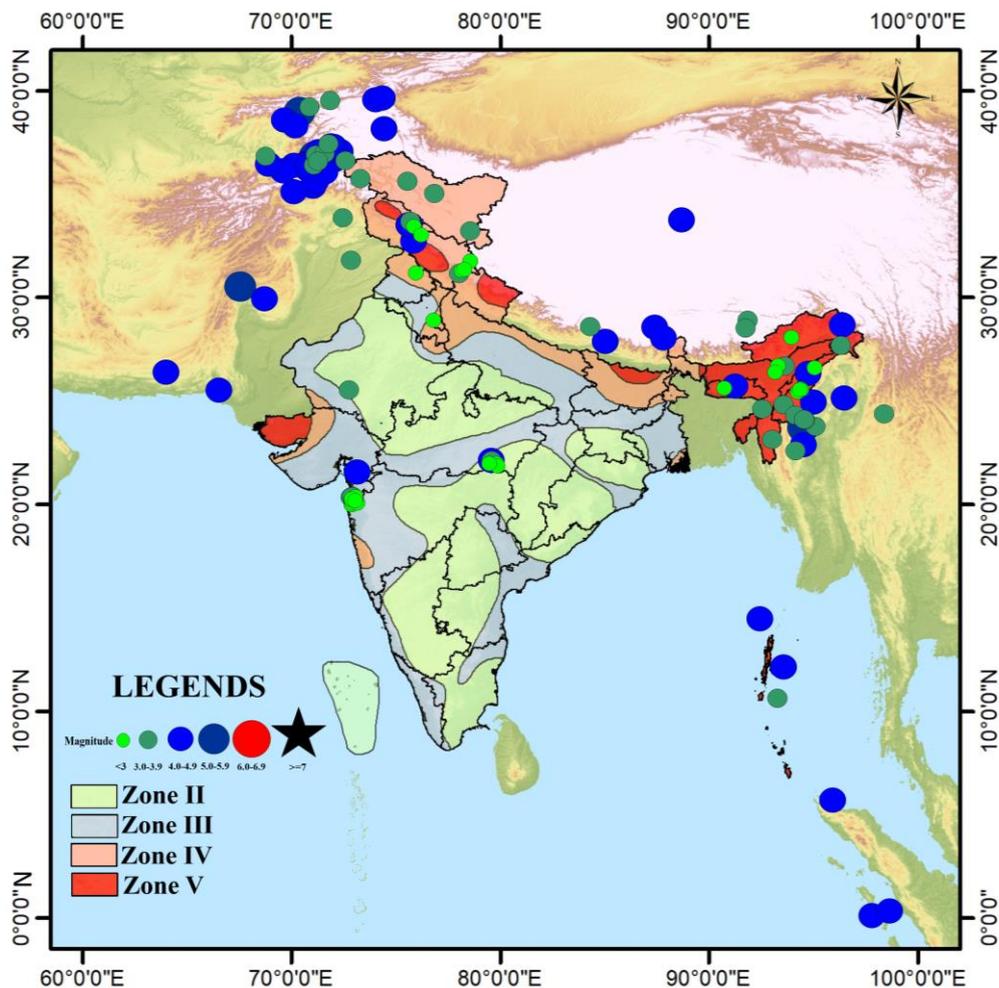


Figure No: 1 Map showing the seismicity during the period 01st – 30th November 2020 occurred in India and its neighbour region along with the seismic zone of India.

of India as shown in Fig1. Two small pockets in central India, namely Palghar, Maharashtra and Seoni, Madhya Pradesh were active in this month also. Sixteen earthquakes occurred in Palghar region during the month; of which thirteen earthquakes had magnitude less than 3.0. Three earthquakes occurred in the magnitude range **3.0-3.5** Another region which was also active during the month was Seoni, Madhya Pradesh. Four earthquakes occurred during the month in the region with the largest one occurred on 2020-11-21(20:15:02) UTC with **M 4.3**.

Out of total 126 earthquakes, around 40% of events occurred in the magnitude range **4.0-4.9** and around 54% occurred with magnitude less than **4.0**, whereas only four and three earthquakes occurred in the magnitude range, **5.0-5.9** and **6.0-6.9** as shown in Fig 2. Detail list of earthquakes occurred during the month is available at <https://seismo.gov.in/>

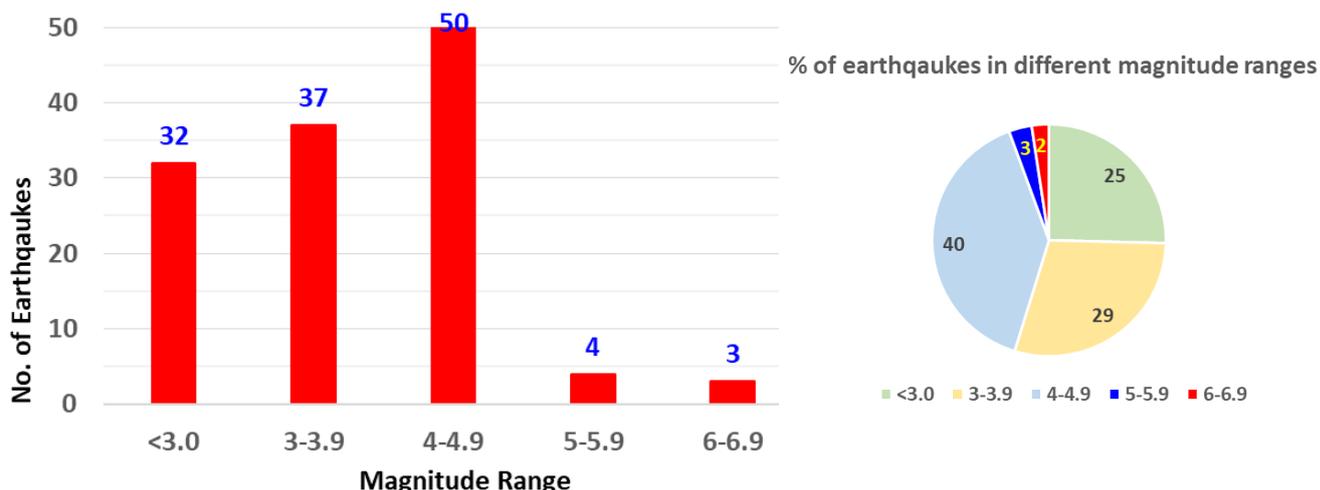


Figure 2: Bar-Diagram and Pie chart showing the number of earthquakes and their distribution in terms of percentages occurred in the magnitude range during the period 01st – 30th November 2020 that was disseminated.

3) Significant Earthquakes:

During the period 01st -30th November 2020 two significant earthquakes occurred in the Indian region with **M:4.3**, on 2020-11-21 at 20:15:02(UTC) in the Seoni, Madhya Pradesh and **M:4.2** on 2020-11-07 at 10:09:24(UTC) in the Bharuch, Gujarat.

1) Seoni, Madhys Pradesh:

An earthquake of **M:4.3** occurred on **21th November 2020 (20:15:02 UTC)** near Seoni,

Madhya Pradesh. The epicentre of the earthquake is 22.10°N and 79.55°E with a focal depth 10km. The epicentre was about 116km North-North-East (NNE) of Nagpur, Maharashtra and the epicentral area lies in Zone-II as per seismic zoning map of India. The epicentre location and intensity map of the earthquake are given in Figure 3. Few felt responses were reported in the range of II to III on the scale of Modified Mercalli Intensity (MMI) within 147 hours at a distance 130 km from the epicentre (Figure 4).

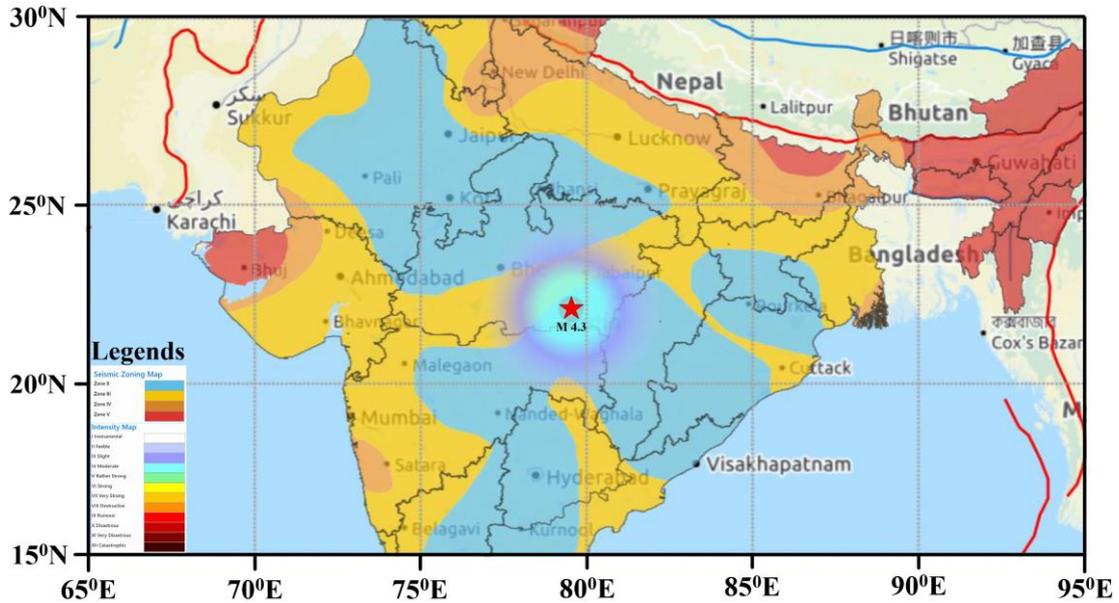


Figure 3: Map showing the epicentre (red star) and intensity of Seoni, Madhya Pradesh earthquake occurred on 11th November 2020. Zonation (zone II) of the region can also be seen.

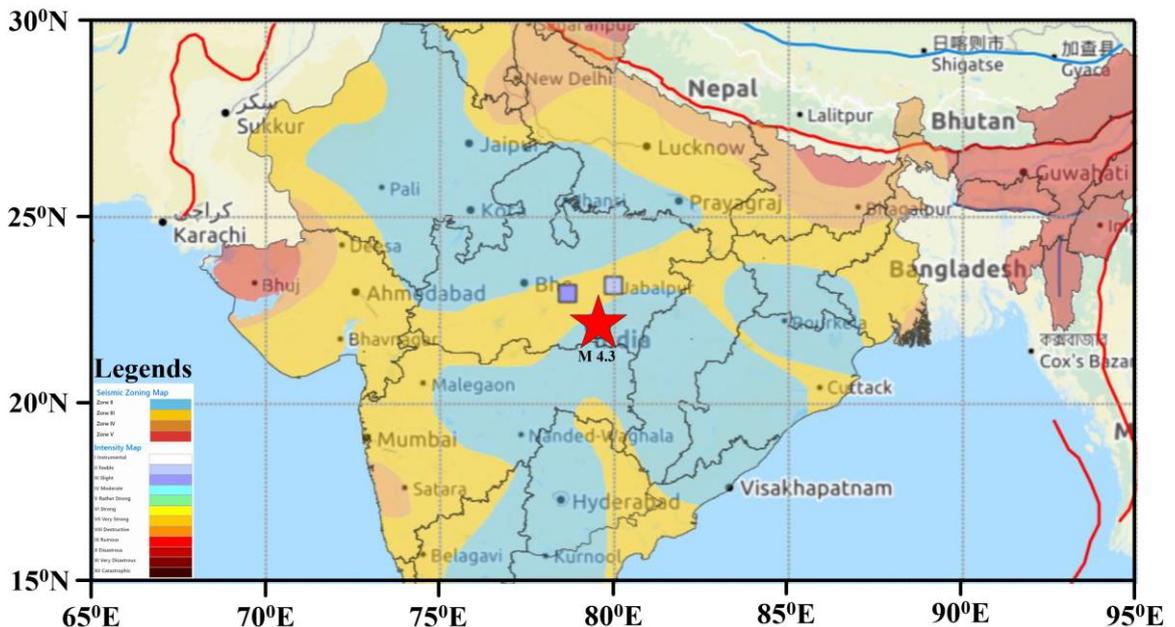


Figure 4: Map showing the epicentre of the earthquake (red star) and felt responses (squares) received within 147 hours from the occurrence of the Seoni, Madhya Pradesh earthquake.

II) Bharuch, Gujarat:

An earthquake of **M:4.2** occurred on **7th November 2020 (10:09:24 UTC)** near Bharuch, Gujarat. The epicentre of the earthquake is 21.55°N and 73.15°E with a focal depth 10km. The epicentre was about 53km North-East (NE) of Surat, Gujarat and the epicentral area lies in Zone-III as per seismic zoning map of India. The epicentre location and intensity map of the earthquake are given in Figure 5. Earthquake was widely felt in Ahmedabad, Anand, Bharuch, Surat, Vadodara and Valsad (Figure 6). Total sixty-five (65) felt responses were reported in the range of II to III on the scale of Modified Mercalli Intensity (MMI) within 53 hours at a distance 90 km from the epicentre.

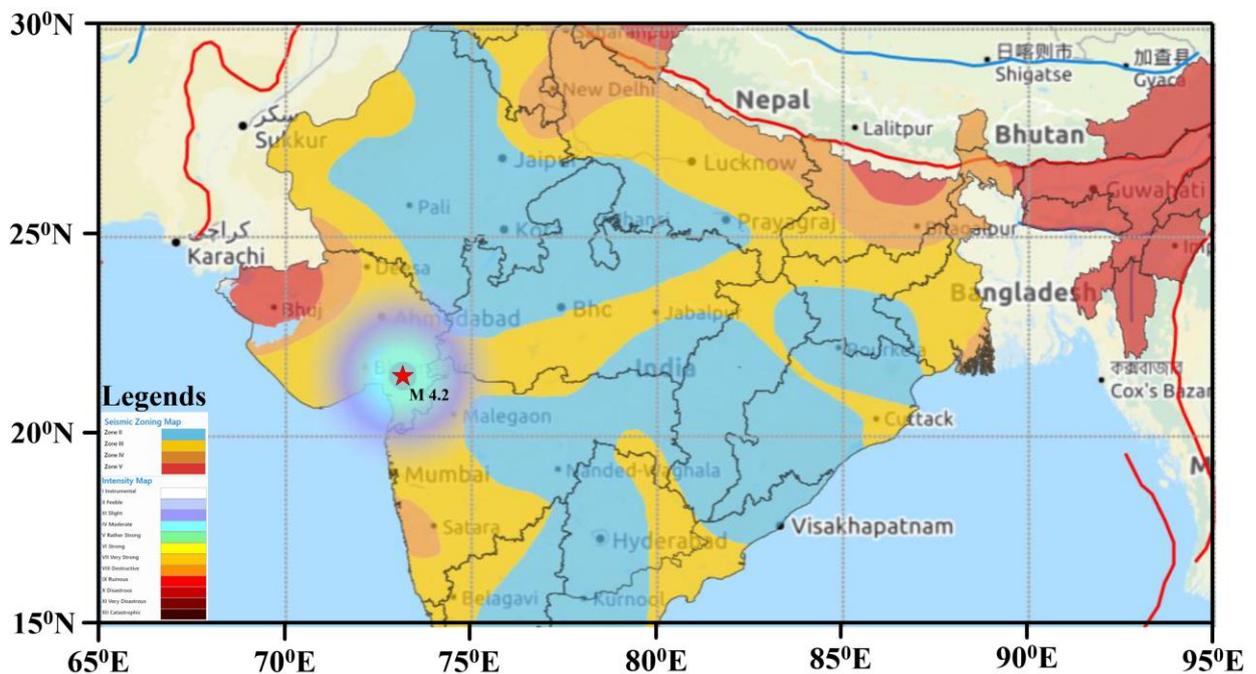


Figure 5: Map showing the epicentre (red star) and intensity of Bharuch, Gujarat earthquake occurred on 7th November 2020. Zonation (zone III) of the region can also be seen.

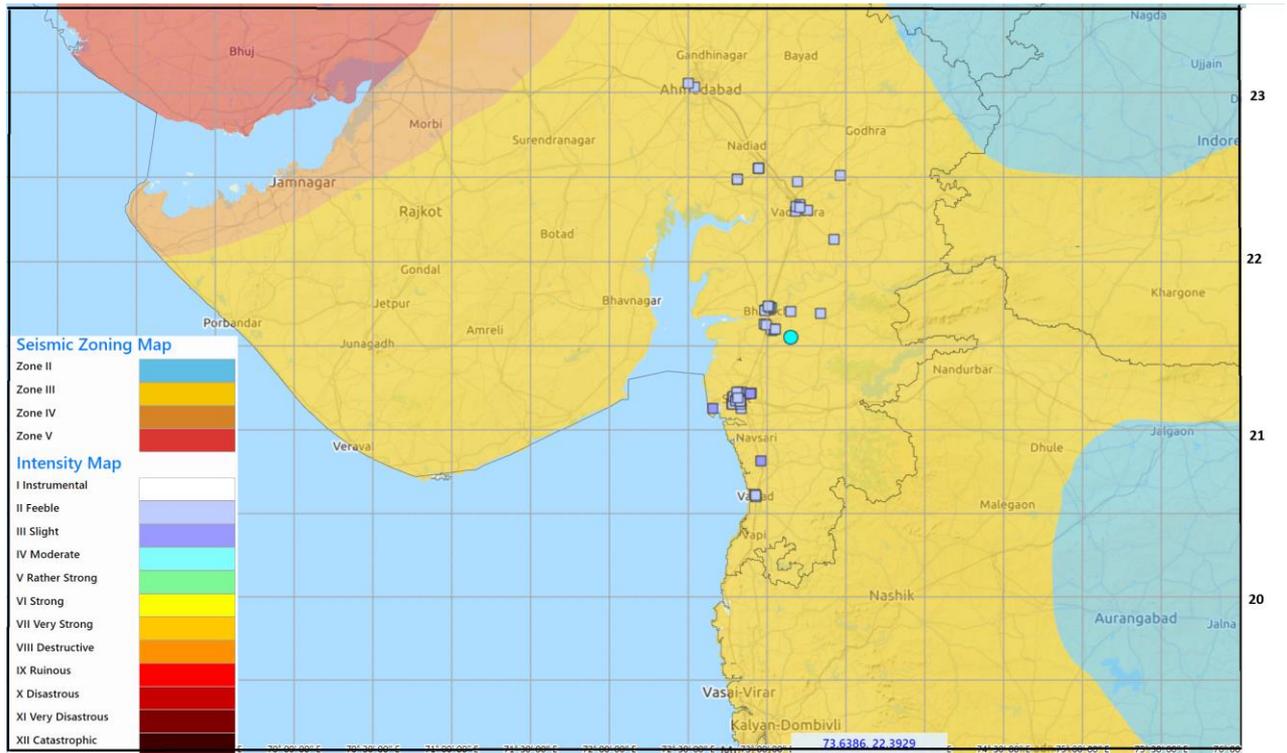


Figure 6: Map showing the epicentre of the earthquake (blue color circle) and felt responses (squares) received within 53 hours from the occurrence of the Bharuch, Gujarat earthquake.