



## Seismic Noise

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### Why in News

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Scientists at the British Geological Survey (BGS) have reported a change in the **Earth's seismic noise and vibrations** amid the coronavirus lockdown.

These findings have come two weeks after seismologists at the Royal Observatory in Belgium observed a 30-50% fall in levels of seismic noise since schools and businesses were closed in mid-March.

### Key Points

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- **Seismic noise**
  - In geology (study of rocks), **seismic noise refers to the relatively persistent vibration of the ground** due to a multitude of causes.
  - This noise includes vibrations caused due to **human activity**, such as transport and manufacturing.
  - Scientists first observed this seismic noise — everything recorded on seismograms that cannot be attributed to earthquakes — at the end of the 19<sup>th</sup> century.
  - It is the **unwanted component of signals recorded by a seismometer** and makes it difficult for scientists to study seismic data that is more valuable.
  - Apart from geology, seismic noise is also studied in other fields such as oil exploration, hydrology, and earthquake engineering.

- **Benefits of reduction in seismic noise**

- Usually, to measure seismic activity accurately and reduce the effect of seismic noise, geologists **place their detectors 100 metres below the Earth's surface.**

Because, the **seismic noise vibrations caused by human activity are of high frequency** (between 1-100 Hz), and travel through the Earth's surface layers.

- However, **since the lockdown**, researchers have said that **they were able to study natural vibrations even from surface readings**, owing to lesser seismic noise.
- Due to lower noise levels, scientists are now hoping that **they would be able to detect smaller earthquakes and tremors** that had slipped past their instruments so far.

## **Seismometer**

- Seismometer is the **scientific instrument that records ground motions**, such as those **caused by earthquakes, volcanic eruptions, and explosions.**
- These are incredibly **sensitive** so they also pick up other sources of vibration too, including human activity, such as road traffic, machinery and even people walking past.

**Source: IE**