

Earthquake Information Products and Tools from the Advanced National Seismic System (ANSS)



Lateral spreading disruptured Vine Road near Wasilla, Alaska. [Photograph from Rob Witter, U.S. Geological Survey, public domain]

This Fact Sheet describes post-earthquake products and tools provided by the Advanced National Seismic System (ANSS) through the U.S. Geological Survey Earthquake Hazards Program. The focus is on products that provide situational awareness immediately after significant earthquakes.

ANSS Background

The Advanced National Seismic System (ANSS) is a collaboration of Federal, State, and academic partners working together to move the US towards an earthquake-resilient nation. The ANSS collects and analyzes seismic and geodetic data, issues timely and reliable earthquake notifications and impact estimates, and provides data for earthquake research and hazard and risk assessments. Since the inception of ANSS in 2000, the U.S. Geological Survey (USGS)and partners have deployed over 3,300 modern seismic stations with telemetry capability to collect high-quality seismic data to serve the needs of the emergency management and response, engineering, and scientific communities.

The Federal Emergency Management Agency (FEMA) and USGS have estimated the average annual earthquake loss in the United States to be \$6.1 billion per year, and that damaging earthquakes pose a risk to nearly half of the American population. Such losses can be reduced by using information from seismic and geodetic monitoring to effectively focus resources within regions of significant risk, to perform seismic rehabilitation, to improve the overall performance of earthquakeengineering designs, and to plan for the response to hazardous events.

A modern seismic system is vital for providing timely and accurate information about earthquakes and their effects and to reduce loss of life and property from earthquake disasters. The ANSS helps to guide rapid mobilization of emergency response at the level appropriate for the need by providing situational awareness through the rapid dissemination of post-earthquake information about the distribution and severity of shaking and the assessment of the earthquake's impact.

ANSS Earthquake Information Products and Tools

The ANSS provides post-earthquake information products and tools for rapidly disseminating information to users. The most recent products developed include forecasts of aftershock (fig. 1), secondary effects such as ground failures, and impacts of significant earthquakes such as financial losses and fatalities.

This list is a summary of ongoing developments of interest to the public, the media, and those responding to earthquakes. These products inform communities that focus on critical lifelines, including utilities, emergency response, emergency coordination, recovery, planning, and business continuity.

ANSS Earthquake Information Products and Tools



Latest Earthquakes

Maps and information for United States and worldwide earthquakes within minutes after they occur. https://earthquake.usgs.gov/ earthquakes/map/



PAGER/TwoPAGER

Estimates of population exposure, fatalities, and economic impacts caused by shaking from significant earthquakes, within minutes anywhere in the world. https://earthquake.usgs.gov/data/pager/



Earthquake Notification Service (ENS)

Customizable earthquake information automatically sent to your wireless device or email account. https://earthquake.usgs.gov/ens/



Ground Failure

Estimates of potential landslides and liquefaction from significant earthquakes. https://earthquake. usgs.gov/data/ground-failure/



Web Services and Feeds

Real-time earthquake data in a variety of formats including RSS (Really Simple Syndication), CSV (comma-separated values), and KML (Keyhole Markup Language). https://earthquake.usgs.gov/earthquakes/feed/



ShakeAlertEarly Warning

Early Warning system for the West Coast of the United States detects significant earthquakes quickly so that alerts can be delivered to people and automated systems

delivered to people and automated systems. https://earthquake.usgs.gov/data/shakealert/



Did You Feel It?

Citizen-science webpage where shaking-intensity maps are created by the people who felt the earthquake. https://earthquake.usgs.gov/data/dyfi/

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Aftershock Forecasting

The likelihood of aftershock activity over future time intervals of a day, a week, a month, and a year after a significant earthquake in the United States. https://earthquake.usgs.gov/data/oaf/



ShakeMap

Distribution of shaking intensity from an earthquake anywhere in the world within minutes. https://earthquake.usgs.gov/data/ shakemap/



Earthquake Summary Posters

Posters created within 24 hours after a significant earthquake with images and text about the seismic background of the area. https://earthquake.usgs.gov/education/posters.php



ShakeCast

Automated ShakeMap delivery, damage assessment, and notification for critical lifeline operators. https://www.usgs.gov/software/ shakecast



Earthquake Catalog Data

View historical seismicity and find past earthquakes that meet your search criteria. Various output formats and links to earthquake details. https://earthquake. usgs.gov/earthquakes/search/

Contact Information: http://earthquake.usgs.gov/contactus/