Rick Lester

Recommended Citation

Rick Lester, "Rick Lester", pegasus, January 01, 1994, https://nautilus.org/pegasus/rick-lester/

Guides & Mentors

Rick Lester
Earthquake Researcher, US Geological Survey
Menlo Park, California

Tell us about you job? What inspired you to pursue this career?

I had started college in 1963 with a major is chemistry but soon found out that I didn't want to pursue that major. A friend was studying geology at UC Santa Barbara and that sounded interesting so I changed majors. I liked studying geology and related fields and have been at it ever since. So it was by chance that I wound up with this career.

As far as how I got my current job, that was also as a result of a chance opportunity. When I was in graduate school I needed a job. A friend in the geology department was quitting his job at the Geological Survey and said they needed someone to replace him. I came to the Survey with that in mind but actually got a job working in other areas, part-time. Although I hadn't expected it to, that part-time job turned into a permanent, full-time career. The work has been quite interesting and rewarding and I have nearly 30 years of federal government service studying earthquakes.

I originally worked part-time doing various jobs, but for the past 25 years I have been involved in processing data for earthquakes that have occurred in northern and central California using data recorded by the USGS Northern California Seismographic Network. We established the network in the mid-1960's and have been operating it continuously ever since. We cooperatively maintain an electronic data center with the University of California at Berkeley that contains seismograms and parametric data for more than 350,000 earthquakes. We cooperate in a similar data center with the National Science Foundation (NSF), the Federal Emergency Management Agency (FEMA), and the California Institute of Technology.

How do scientists monitor earthquake activity?

Scientists monitor earthquake activity using different types of seismographs that record signals when the ground shakes. The signals are generated by seismometers that may or may not be located in a site that is remote to the recorder. The Geological Survey operates the largest seismographic network in the world in California. It has more than 700 sensors. The data from more than 400 of those sensors is transmitted from mostly remote sites back to our Menlo Park office and is recorded

in several ways, most importantly by computers. I supervise a staff of 3-8 data analysts who process those data on a daily basis. We locate between 15,000 and 20,000 earthquakes in an average year in northern and central California.

The earthquakes are detected automatically by computers that record all of the signals. Once an earthquake is detected its location is automatically determined within about 30 seconds of it's occurrence. The magnitude is determined 2-3 minutes later. Those preliminary data are posted on our web site (http://quake.wr.usgs.gov). Then the data analysts examine the data from each quake and refine the preliminary information as necessary. The data are then reprocessed and archived, and sent to our permanent data center.

When a major earthquake occurs, what role does your organization play? Describe a memorable experience from your work.

If the earthquake occurs in California, our California office responds. We have an office in Golden, CO that locates all large quakes world-wide and provides that data for those quakes. The response for large quakes is to determine the location and magnitude, continue to monitor for aftershocks and rapidly locate any that occur. We may send teams to the region where the quake occurred and determine the type and extent of damage, what fault rupture, if any, took place, get information on what people in the region felt, etc. Information gathered about the earthquakes is then published in reports, scientific journals, etc.

My most memorable experience was the Loma Prieta earthquake and its aftermath. Our office worked around the clock for many weeks recording and processing earthquake data, assessing the damage, publishing data, providing information on what future quakes might occur, and informing people what they should do when a large quake occurs in the region again.

lester@swave.wr.usgs.gov
