

WHAT'S SHAKING

newsletter of

THE NEVADA SEISMOLOGICAL LABORATORY

Earthquake Update

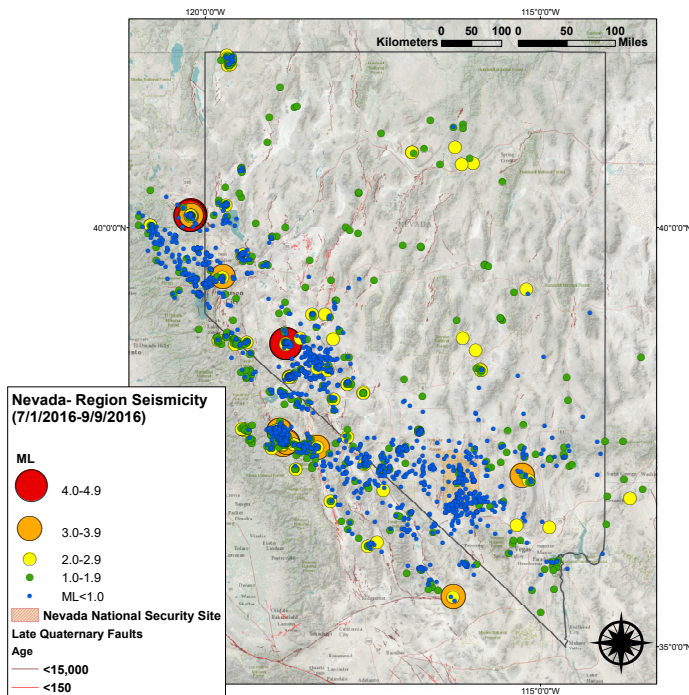


Figure 1: Earthquake activity within the Nevada Monitoring Network for July and August.

As for many, the summer months are a busy time for the Seismological Laboratory. We are happy to continue our monthly newsletters after the summer break.

Many residents of Northern Nevada felt at least 1 earthquake over the July – August months. Several earthquake swarms produced significant events in Reno & Hawthorne, Nevada, south of Honey Lake and near Mammoth, CA. Figure 1 shows all the events over July and August in the Nevada Seismological Laboratory monitoring area, while Figure 2 shows a more detailed look at the August 3rd events at the south end of Honey Lake.

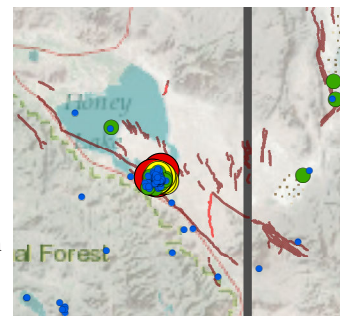
In the afternoon on July 31, 2016, a M3.1 earthquake occurred near

mi north of Reno) on what appears to be the Honey Lake fault. The largest of the set of earthquakes was a M4.4 and was widely felt in Reno and Susanville. Figure 3 shows the USGS Did You Feel It? Reports, which shows the locations of felt reports. Most reports were in the IV or lower range, indicating light or weak shaking.

The Honey Lake fault is a strike-slip fault that bounds the northern edge of the Walker Lane. Earthquakes are common throughout the Walker Lane (as is covered in previous “What’s Shaking” issues). In 1976, a sequence very similar occurred, producing 3 M4.4+ events over a period of a few days.

Double Diamond PKWY and I-580. This earthquake was widely felt but did not cause any reported damage.

Figure 2: Two magnitude 4 events occurred as part of an earthquake sequence near Honey Lake on August 3, 2016



The August 3rd events occurred at the southern end of Honey Lake (~60

Other notable events during July and August include another M4.2 and M3.9 to the west of Walker Lake, near Hawthorne, Nevada. This sequence has been mentioned in numerous other Newsletter issues, but it is continuing to produce sizable earthquake events!

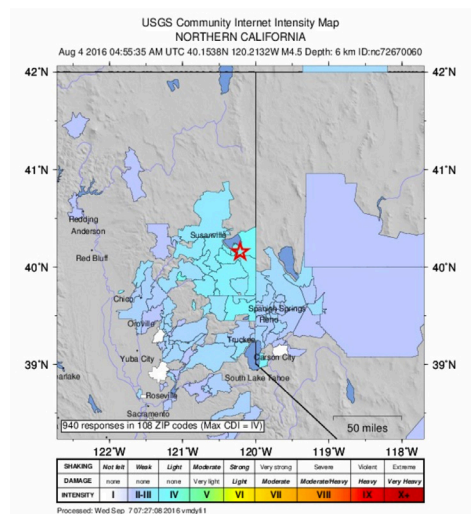


Figure 3: The USGS shows over 900 “Did You Feel It?” reports from the events on the evening of August 3, 2016.

EVENT HIGHLIGHT

August 26, 2013 M4.2 Spanish Springs

How a small earthquake can still do damage!

In the late afternoon of August 26th, many residents in central Reno felt a significant shake as part of an earthquake sequence in Spanish Springs, Nevada. The earthquake was strong enough that I personally grabbed my 10-month-old baby and proceeded to “Drop, Cover, and Hold On.” The shaking lasted ~5 seconds and, thankfully, did not cause any damage to my house or belongings.

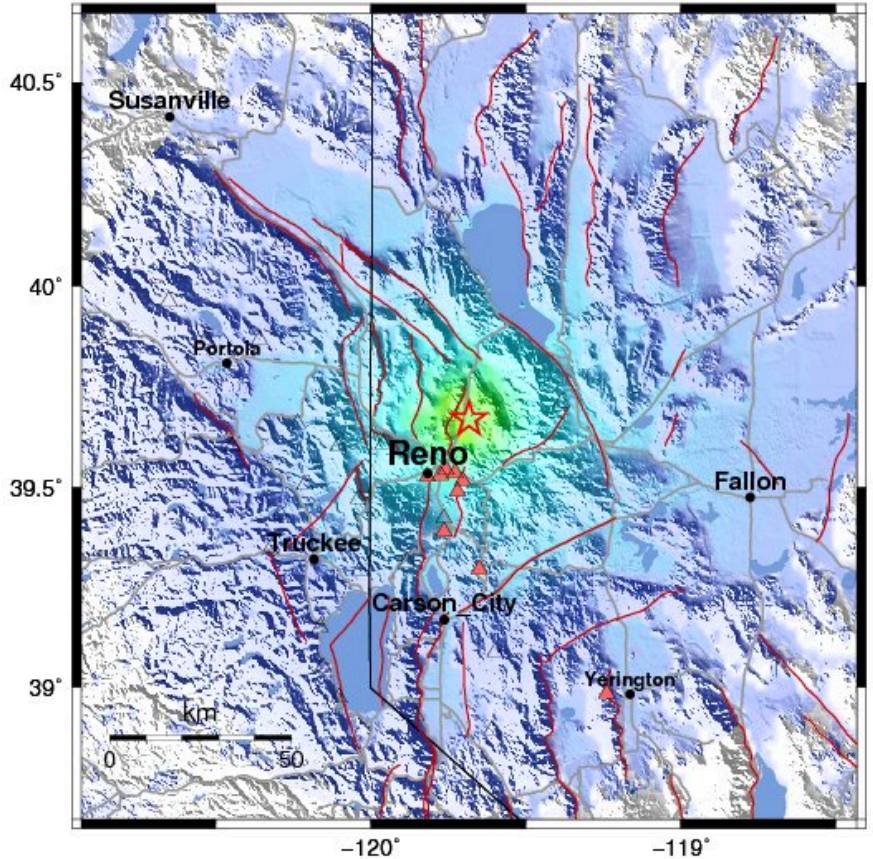
The US Geological Survey received hundreds of “Did You Feel It?” reports from the earthquake. This M4.2 earthquake caused light shaking as far away as Lake Almanor and was felt widely within the Truckee Meadows. The NSL intensity map for this event is shown in map 1. The greener shades indicate the regions of more intense shaking while blues show where the earthquake was felt less strongly. Even though the earthquake was relatively small, it did cause some structural damage on the UNR campus.

The sequence of 2000+ events were located directly under a residential neighborhood at a depth of ~14 km below the Earth’s surface. In Nevada, earthquakes typically occur between 5-15 km deep, so this particular sequence was considered deep for Nevada earthquakes.

The earthquake occurred on a system of strike-slip faults. On this type of fault, the western side of the fault moved to the north, while the eastern side moved south. As has been discussed in previous Newsletters, Nevada contains mostly a combination of normal (mountain building) faults and strike-slip faults like the ones in the 2013 Spanish Springs sequence.

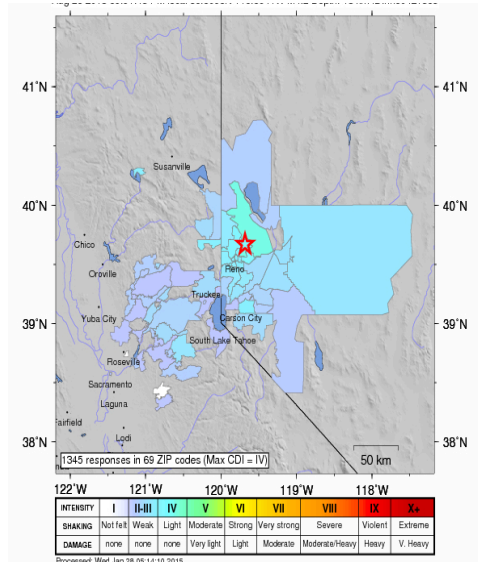
The M4.2 main shock heightened awareness of some building hazards in the region. On the UNR campus, at least one older (pre 1940) building sustained enough damage to require repair work. Older buildings are notoriously poor performers when subjected to earthquake shaking. The fact that this relatively small earthquake caused damage highlights that risk!

NSL Reno ShakeMap : 7.0 miles NE of Sun_Valley
 Mon Aug 26, 2013 05:51:43 PM PDT M 4.2 N39.67 W119.68 Depth: 13.9km ID:00421303



Map Version 6 Processed Thu Sep 26, 2013 03:40:25 PM PDT - ShakeMap v3.5

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-85	85-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+



1345 responses in 69 ZIP codes (Max CDI = IV)
 Processed Wed Jan 28 05:14:10 2015

DEVELOPMENTS

Washoe County PREPARE

Washoe County Emergency Manager, Aaron Kenneston, describes the public/private sector partnerships that help our region to be ready for the next disaster.

Being ready for emergencies such as earthquakes is a whole community process. In Washoe County we have a full partnership between the public and private sector. This effort is known as PREPARE Washoe (PREparedness PARTnership commitTEE). The overarching goal is to develop a culture of preparedness in our region by having open communications between businesses and local government. Additionally, we seek to provide training opportunities and ensure that businesses are properly equipped to maintain continuity during an emergency and help the community to recover.

With the exciting new industry in Northern Nevada comes the opportunity to increase earthquake preparedness with new partners. The PREPARE Washoe initiative sprung from initiatives such as the Lifeline Utilities group in the region, the Associated General Contractor's Emergency Services Committee, the Volunteer Organizations Active in Disaster (VOAD), and Community Emergency Response Team (CERT) efforts.

After the flood of 2005, local businesses expressed a desire to be better informed and partner with government on behalf of the community. Regional Public Safety Officials expressed a desire to have a member of the business community participate as a liaison in the Regional Emergency Operations Center (REOC). Both sectors realized the value of being partners.

The objectives for PREPARE Washoe are designed to benefit both local businesses and government. The objectives for local businesses include being informed in a timely manner of potential hazardous events that could affect business, being in a position to assist the community, and having economic opportunities to assist in response and recovery. The objectives for local government are having the private sector involved at the Regional Emergency Operations Center, assisting in helping businesses prepare for disasters to minimize impacts and speed recovery, and helping businesses to develop Continuity of Operations Plans.

The PREPARE Washoe initiative is co-sponsored by the Reno-Sparks Chamber of Commerce, the Economic Development Council of Northern Nevada, and the Washoe County Office of Emergency Management and Homeland Security. The group has a simple charter specifying at least four meetings per year focused exclusively on ensuring a partnership between business and local government. The group is co-chaired by two business representatives and the County Emergency Manager. Meeting topics are solicited through annual surveys of the membership and coordinated by the co-chairs.

The success of PREPARE Washoe relies on business volunteers. We have the following resources available through its partnership- a role in the Emergency Operations Center; web

resources; and tools and templates. For more information, please visit: www.readywashoe.com

PREPARE Washoe hosts and participates in joint training and exercises with the public and private sectors such as the Great Nevada Shake-Out. These are determined at the annual Training and Exercise Planning Workshop (TEPW) held in August of each year. The group uses email alerts; social media (Facebook); in-person meetings; media outreach; telephone member lists; and public service announcements to communicate the message of "Make a Plan, Assemble a Kit, Stay Informed- Be Ready!"

Aaron R. Kenneston, CEM

