



Dylan Brown Independent Record

## On shaky ground

Mike Stickney, director of the earthquake studies program at the Montana Bureau of Mines and Geology, talks about the recent Dillon seismic activity and the Northern Rockies fault lines Thursday in the basement of the Helena Police Department. USGS donated wireless seismic recorders, shown on the slide, to Stickney's department.

While Mike Stickney can't predict when the next major earthquake will strike the Helena Valley — “If I knew the answer to that, I'd be a high-paid consultant for some insurance company” — the geologist said the capital region is rich with fault lines, and a big quake here wouldn't be a big surprise.

Stickney, director of the Earthquake Studies Program at the Montana Bureau of Mines and Geology in Butte, told a group of 30 law enforcement and public officials Thursday that there are around 45 faults in western Montana that are capable of producing a major earthquake, including several in the Helena area.

Several major seismic events in recent weeks, including a magnitude 3.9 earthquake in a remote area near Seeley Lake, the devastating earthquake in Haiti and a swarm of tremors in Yellowstone National Park, have people thinking that something strange is happening beneath the earth's surface.

But in fact, Stickney said, the amount of activity recently isn't all that unusual, in Montana or elsewhere. His department measured 1,500 earthquakes in Montana in 2009, including many in the Helena area. Nearly all of those, of course, were too slight to be felt by people going about their daily lives

Even the recent Yellowstone swarm, Stickney said, while more energetic than most, wasn't out of the ordinary.

“There have been 80 recognized swarms in Yellowstone Park since 1995,” he said. “We typically get several swarms per year.”

Montana lies at the top of the Intermountain Seismic Belt, which stretches from Nevada through Utah along the Wasatch Front, then up the Idaho-Wyoming border before splintering, with one fault line running west into Idaho and the other following the Rocky Mountain Front through Montana.

As a result, Montana saw around three dozen earthquakes of magnitude 5.0 or greater over the past decade. That includes a pair of major earthquakes two weeks apart in Helena in 1936 that damaged

60 percent of the buildings here, as well as the 1959 earthquake in the southwest corner of the state that created Quake Lake.

In the Helena area, Stickney said there are faults along the North Hills and Spokane Hills along the north and eastern edges of the Helena Valley, as well as a larger fault on the east side of Canyon Ferry Lake at the foot of the Big Belt Mountains.

While those represent “probably the most capable faults within this basin,” Stickney noted that several of the state’s major earthquakes took place away from major fault lines.

There are other fault lines closer to the city of Helena at the south edge of the valley, but Stickney said there doesn’t appear to have been any seismic activity centered under the city for at least 10,000 years.

Reporter John Harrington: 447-4080 or [john.harrington@helenair.com](mailto:john.harrington@helenair.com).