

Summary of Photographs

- Description: [Lost Springs fault scarp, ancient and new; Borah Peak](#)
Source: A. J. Crone, U.S. Geological Survey
[Info Categories:](#) G
- Description: [Lost River Fault Scarp crossing Doublespring Pass Road; central Idaho](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G
- Description: [Lost Springs fault scarp bisecting drainage ditch; central Idaho](#)
Source: Walter Arabasz, University of Utah
[Info Categories:](#) G
- Description: [Elk hunter walking out of earthquake area; Heard Lake, ID](#)
Source: Bill Barnes
[Info Categories:](#) I, L, P
- Description: [Boulder adjacent to front porch of home; Challis, ID](#)
Source: Ogden Standard-Examiner
[Info Categories:](#) G, P
- Description: [Bridge \(foreground\) damaged by falling boulder; Challis, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G, L
- Description: [Trail of boulder evident on ground; Challis, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G, P
- Description: [Boulder and car it hit; Challis, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G
- Description: [Rock fall near homes; Challis, ID](#)
Source: Challis Messenger
[Info Categories:](#) G
- Description: [Rock fall in kitchen; Challis, ID](#)
Source: Challis Messenger
[Info Categories:](#) B, G
- Description: [Flooded farmland; Custer County, ID](#)
Source: Challis Messenger
[Info Categories:](#) G

Description: [Dead fish due to dried warm springs; Custer County, ID](#)
Source: Challis Messenger
[Info Categories:](#) G, I

Description: [Sink-hole from artesian spring near Chilly Butte, ID](#)
Source: Challis Messenger
[Info Categories:](#) G

Description: [Barn damaged by fissures from lateral spreading due to liquefaction](#)
Source: Dr. T. L. Youd, Brigham Young University
[Info Categories:](#) B, G

Description: [Concrete box that rose in soil due to liquefaction. Ranch near Big Lost River, South-central Idaho](#)
Source: Dr. T. L. Youd, Brigham Young University
[Info Categories:](#) B, G

Description: [Sand boil deposit by ranch house near Big Lost River. South-central Idaho](#)
Source: Dr. T. L. Youd, Brigham Young University
[Info Categories:](#) B, G

Description: [Fissures near Highway 93; Custer County, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G

Description: [Old rock building; Challis, ID](#)
Source: Challis Messenger
[Info Categories:](#) B

Description: [Old high school; Challis, ID](#)
Source: Challis Messenger
[Info Categories:](#) B

Description: [IGA Store awning on sidewalk; Mackay, ID](#)
Source: Ogden Standard-Examiner
[Info Categories:](#) B

Description: [Custer Hotel and adjacent home; Mackay, ID](#)
Source: Deseret News
[Info Categories:](#) B

Description: [Main St. building damage in Mackay, ID](#)
Source: Deseret News
[Info Categories:](#) B

Description: [Chimney on barber shop; Mackay, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) B

Description: [Car damaged by falling bricks; Mackay, ID](#)
Source: Challis Messenger
[Info Categories:](#) B

Description: [City Hall interior damage; Mackay, ID](#)
Source: Challis Messenger
[Info Categories:](#) B

Description: [Mess in grocery store; Mackay, ID](#)
Source: Challis Messenger
[Info Categories:](#) N, I

Description: [People helping people \(free coffee\); Mackay, ID](#)
Source: Challis Messenger
[Info Categories:](#) A

Description: [Bulldozer moving debris on Main St.; Mackay, ID](#)
Source: William D. Richins; Idaho Falls, ID
[Info Categories:](#) B, R

Description: [Clayton School located at base of cliff; South-central Idaho](#)
Source: Challis Messenger
[Info Categories:](#) B, G

Description: [Media invade town; Challis, ID](#)
Source: Challis Messenger
[Info Categories:](#) I

Description: [Jack O Lantern face on boulder. Challis, ID](#)
Source: Earle S. Eppich, Reaveley Engineers & Associates
[Info Categories:](#) G, H, P

Information Categories

A -- Aid:

provide medical services, shelter, donations, loans, advice, encouragement, implement safety measures

B -- Building Damage:

structure itself plus windows and chimneys (typically damage visible from outside the building)

E -- Earthquake Description:

where, when, duration, direction, sound, motion, number and timing of aftershocks

G -- Geologic Effects:

changes at the Earth's surface, fault scarps, rockfalls, landslides, ground cracks, ground subsidence, sand boils, water spouts; effects on springs, lakes, wells

H -- Humor:

I -- Impact:

changes in daily routine; rumors; influx of reporters, politicians, cost in dollars

L -- Lifelines:

effects on transportation: roads, bridges, railroads, airports

effects on communications: telephone, telegraph

effects on power, gas, water, and sewer lines

effects on dams

N -- Nonstructural Effects:

effects on plaster, furnishings (typically damage or rearrangement of furnishings visible inside a building)

P -- People:

effects on and responses to, during and after; deaths, injuries, near misses

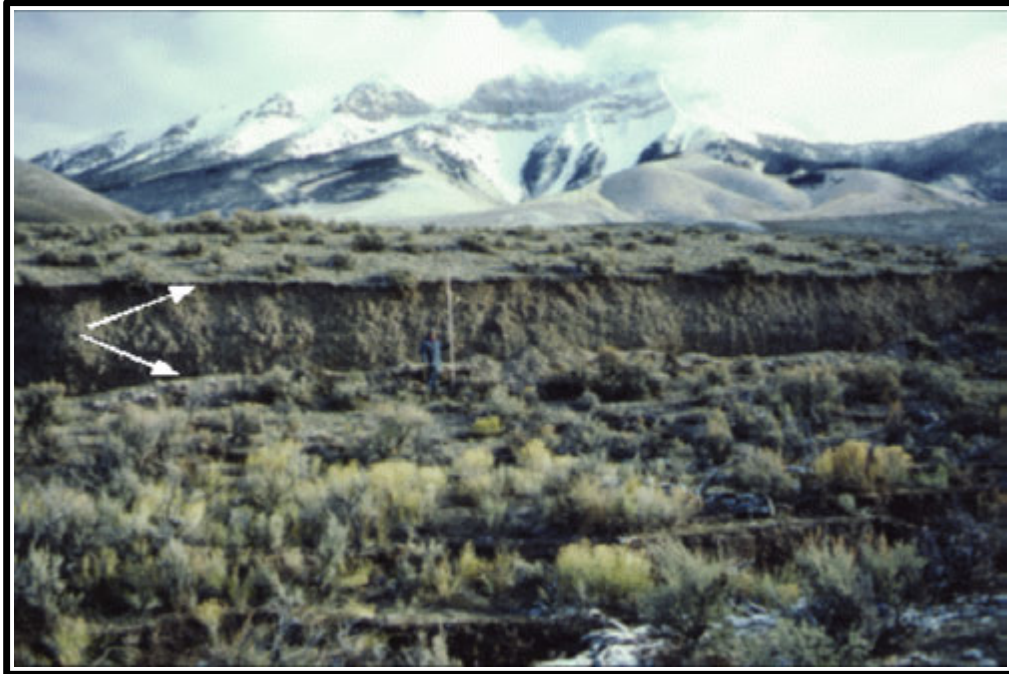
R -- Recovery:

clean up, rebuild

S -- Scientific:

explanation of the day

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Earthquakes in the Intermountain West are a mountain-building process as rock moves vertically along a fault. Earthquakes typically occur repeatedly along the same faults. Arrows in this photo point out the new fault scarp face (~9 feet tall) created in the 1983 Borah Peak, ID earthquake. It is superimposed on an ancient fault scarp (vegetated, beveled area immediately above new scarp).

Photo courtesy of A.J. Crone, U.S. Geological Survey, Denver, Colorado

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Luckily there were no buildings astride the new fault scarp. The only man-made structure affected was the Doublespring Pass Road.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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The direction of movement along the fault was predominantly vertical, but the broken drainage ditch shows that some lateral movement also occurred.

Photo courtesy of Walter J. Arabasz, University of Utah Seismograph Stations, Salt Lake City, Utah

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Two friends were elk hunting in the epicentral area when the earthquake occurred. Rock fall and road damage made driving out impossible. They hiked 5 miles to Heard Lake where a ranger was looking for them.

Photo courtesy of Bill Barnes, Healdsburg, California

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Close call! The people living in this house near the base of steep cliffs in Challis, Idaho, were very grateful that the ~20-ton boulder that fell during the earthquake came to rest "next to" rather than "on top of" their home.

Photo courtesy of Ogden Standard-Examiner

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The ~20-ton boulder fell from near the top of this cliff, rolled and bounced between two houses, and smashed a small wooden bridge before coming to rest next to another home's front porch.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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The boulder's path of travel can be traced by the "footprints" (pockmarks) it left on the ground before it came to rest next to the front porch of this home in Challis, Idaho.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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Two automobiles were damaged by boulders that fell in Challis, Idaho, during the earthquake.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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Homes built at the base of steep cliffs are at risk to rockfall--especially when the ground shakes in an earthquake. Luckily this large boulder missed the home of Robb Markley. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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This 3-foot boulder did not miss (see in center of photo between cabinets). It crashed through the kitchen wall in the Robb Markley home in Challis, Idaho. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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Acres of farmland were flooded near Chilly Butte due to the development of new springs. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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The warm water spring that served as the main source of water for the Will Ingram cattle ranch and for their catfish production project completely dried up during the earthquake. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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For 24 hours new artesian springs spurted water and sediment 15 to 20 feet into the air while eroding this crater near Chilly Butte. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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This steel-frame barn was pulled apart about 1 foot due to fissures caused by lateral spreading due to liquefaction of the soil.

Photo courtesy of Dr. T.L. Youd, Brigham Young University, Provo, Utah

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Buried light or hollow objects often float upwards when the surrounding soil liquefies during an earthquake. The concrete box on the right, housing a well pump, rose 3 inches due to liquefaction.

Photo courtesy of Dr. T.L. Youd, Brigham Young University, Provo, Utah

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A gravelly deposit was left by a sand boil near this ranch house adjacent to Big Lost River. Sand boils are caused by soil liquefaction.

Photo courtesy of Dr. T.L. Youd, Brigham Young University, Provo, Utah

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Lateral spreading caused by soil liquefaction caused fissures to form near Highway 93 in Custer County, Idaho.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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In Challis, Idaho, two young children died when the upper front of this old rock building collapsed onto the sidewalk as they walked to school. It's extremely important that we all learn to move away from buildings when we feel the ground shake. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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The entire stone front exterior of the old high school separated from the rest of the building, and the northeast corner crumbled. Its 360 junior high and high school students began attending classes at the newly-built high school and an elementary school. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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Luckily, no one was on this sidewalk in Mackay, Idaho, when the awning fell during the earthquake. This photo is a good reminder of how dangerous it may be to run outside while the ground is still shaking. Photo by Dave LaBelle.

Courtesy of Ogden Standard Examiner

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The old Custer Hotel was one of the buildings on Main Street in Mackay, Idaho, that was severely damaged. It was later torn down. Photo by O. Kasteler.

Courtesy of Deseret News

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Mackay, Idaho's Main Street was hard hit by the ground shaking. According to Oval Caskay, mayor, 80% of the businesses in Mackay were adversely affected by the earthquake. Photo by O. Kasteler.

Courtesy of Deseret News

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Most brick chimneys in Mackay, Idaho, fell or were severely damaged during the earthquake. Despite losing several bricks and being severely cracked, this chimney on the barbershop managed to stay in place, apparently defying gravity.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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Eleanor Williams had just parked her car behind the Mackay Drug Store when the earthquake hit. The upper portion of the drugstore wall fell onto her car as she attempted to get out. She suffered a severely bruised leg. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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Interior damage to City Hall in Mackay, Idaho, does not appear to be severe. However, the building had to be razed due to structural damage. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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"Ivie's IGA Foodliner in Mackay was a mess of groceries that were strewn everywhere. This photo was taken after the cleanup crew had been working close to six hours, and the end was still not in sight." (Challis Messenger - Special Edition). Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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"Free coffee. One of the best things about living in a small town is people helping people." (Challis Messenger – Special Edition). Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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Members of Company A, 116th Engineer Battalion of the Idaho National Guard helped cleanup Mackay. By November 10, they had razed eight buildings on Main Street.

Photo courtesy of William B. Richins, Idaho Falls, Idaho

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The Clayton Elementary School was abandoned as unsafe after the earthquake in 1983 that caused a 2 x 3 ft. boulder to fall and crash into its outer wall. School district patrons voted for a \$100,000 tax levy override to build a new school in a safer location. Photo by Sue Villard, Challis, Idaho.

Courtesy of Challis Messenger

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Within hours of the earthquake Challis and Mackay, Idaho, were invaded by the press. Some walked into homes uninvited to photograph damage. Others intruded on the funerals of the two children. Helicopters and fixed wing aircraft filled the sky raising fears of a possible crash and of causing the unstable cliffs to release more boulders. Photo by Jim Connor, Challis, Idaho.

Courtesy of Challis Messenger

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The earthquake occurred three days before Halloween. Georgia Smith exemplified "making the best of trouble" when she decorated this ~20-ton boulder that came to rest next to her home during the earthquake.

Photo courtesy of Earle S. Eppich, Reaveley Engineers & Associates, Salt Lake City, Utah

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