



*Madison River  
Canyon  
Earthquake Area*

*Visitor  
Guide*



GALLATIN *National Forest*

## A Severe Earthquake Caused a Massive Landslide

It was a beautiful moonlit night, August 17, 1959, when one of the most powerful earthquakes ever recorded on the North American continent struck the Madison River Canyon.

The earthquake, which measured 7.5 on the Richter scale, triggered a massive landslide, which sent over 80 million tons of rock crashing down into the canyon, blocking the Madison River. The water backed up behind the rocks, forming the new Earthquake Lake. High velocity winds and a gigantic wall of water swept through the area.

## Earthquake at Hebgen Lake

In a matter of seconds, the earth's crust had dropped 19 feet. The land under Hebgen Lake tilted upward; cabins on the north shore were immersed in water, while portions of the south shore lay high and dry. Water sloshed back and forth, while huge waves crested over Hebgen Dam at the western end of the lake. Although the dam cracked, it miraculously held.

Three sections of Highway 287 fell into the lake. As a result of the night's disaster, hundreds of people vacationing in the area were trapped. A total of 28 lives were lost.



Before the 1959 earthquake...



and after.

The above photographs were taken from the same area. "Before" photo (above left) courtesy Montana Power Company

## Madison Canyon Earthquake Area

This immense earthquake's impact shocked and chilled the world.

Families gradually rebuilt their lives, structures and roads were reconstructed.

In 1960, 38,000 acres in the canyon were designated as the "Madison River Canyon Earthquake Area." This portion of the Gallatin National Forest is of great scientific and general interest.

As you travel through this area, the effects of the ever-changing earth can be seen all around you.

## Walking Trail

There is a short walk to the Memorial Boulder located northwest of the Visitor Center. The Memorial is dedicated to the people who lost their lives as a result of the earthquake. Their names appear on a bronze plaque on one of the massive dolomite boulders carried across the canyon by the slide.

## Visitor Center

The Earthquake Lake Visitor Center is located on Highway 287 in Montana. The nearest town is West Yellowstone, MT located 27 miles away. The Visitor Center has a DVD presentation, displays on earthquakes, geology, wildlife and the Greater Yellowstone Area. There is also a working seismograph on display. The Visitor Center sells educational books, maps and DVD's.

## General Information

Fees are charged during the summer (Memorial Day weekend to Labor Day). The Visitor Center is part of the Federal Lands Recreation Enhancement Act and accepts Interagency Passes. A small fee is charged for the interior of the Visitor Center.

## Some Rules and Regulations

- ✓ Fee Required for Visitor Center
- ✓ Day Use Area - no camping
- ✓ No pets, wet waders or smoking in the Visitor Center

## Wildlife Viewing



Look for the following in the area:

*Mountain goats* on the high cliffs above the Visitor Center.

*Osprey* along Earthquake Lake.

*Pika* in the rocky areas.

*Moose* near the beaver ponds.

*Black bear* on the south shore of Earthquake Lake.

*Bald eagles* near the boat launch.



Vertical displacement of approximately 12 feet in Hebgen Lake Area.

# Madison River Canyon Earthquake Area

## AUTO TOUR ROUTE



- 1 Spillway** - A Spillway was made across the slide by the U.S. Army Corps of Engineers. On September 10, 1959 water passed through the 250 ft. wide and 14 ft. deep channel. On October 17, 1959 the channel was deepened another 50 ft.
- 2 Visitor Center and Slide** - Come and view the slide from the observation room. Listen to the interpreter's story and watch the 15-minute video presentation. Walk the trail to the Memorial Boulder and overlook.
- 3 Rock Creek Turnout** - A Forest Service campground lies under 100 feet of water just off this point. Some campers escaped and others perished from the rising waters.
- 4 Earthquake Lake** - The slide dammed the Madison River to form Earthquake Lake, which filled in three weeks and created a new body of water 190 ft. deep and 6 miles long.

- 5 Boat Launch** - This portion of the old highway continues to serve the public. The old highway lies beneath the waters of Earthquake Lake.
- 6 Refuge Point** - This ridge provided a place of protection during the night of August 17 for many survivors of the earthquake. The next morning Forest Service smokejumpers parachuted to this point and set up rescue operations. Later that day helicopters evacuated the survivors.
- 7 Ghost Village** - These are the remains of cabins the water carried here from their original sites.
- 8 Cabin Creek Scarp** - At this site a 21 - ft. fault scarp severed the old campground.
- 9 Hebgen Dam** - The earthfill dam held, although it suffered damage from tremors and huge earthquake-caused waves called seiches.

- 10 Building Destruction** - A short walk will take you through this area. You can see the old resort cabin that is submerged in Hebgen Lake.
- 11 Red Canyon** - You can view the fault scarp that extends 14 miles in this area. A fault scarp is a cliff created by movement along a fault.
- 12 Duck Creek Y** - This is where the epicenter of the earthquake occurred

### For more information contact:

Hebgen Lake Ranger District  
 P. O. Box 520  
 West Yellowstone, MT 59758  
 (406) 823-6961  
 Visitor Center (summer): (406) 682-7620  
 or visit the Gallatin National Forest webpage at:  
[www.fs.fed.us/r1/gallatin](http://www.fs.fed.us/r1/gallatin)

The USDA is an equal opportunity provider and employer.  
 R1-01-64