

THE GREAT FLOOD: CALIFORNIA'S MEGAFLOOD

The Great Flood of 1861-1862 – the last megaflood in California's history – submerged major cities under water for months and extended well beyond

No flood since can compare to the damage and devastation of the Great Flood. In the Central Valley, an inland sea covered an area 300 miles long and 20 miles wide: more than 4,000 football fields. The influx of water, created by the Sierra Nevada snow melt and a series of atmospheric river storms, also formed large lakes near Los Angeles and in the Mojave Desert.



Approximately 25% of the state's livestock drowned. Flooding and subsequent landslides destroyed 33% of the property in the state. And, incredibly, **10 feet of brown, debris-laden water covered the city of Sacramento – enough to completely cover the ground floor of businesses and residences.**

Atmospheric rivers are long, narrow regions in the atmosphere – acting like rivers in the sky – that carry water vapors out from the tropics. California periodically encounters these atmospheric rivers, which dump heavy rains once they make landfall.

A **megaflood** refers to flooding of massive proportions, often caused by atmospheric rivers. Atmospheric rivers caused the Great Flood of 1861-1862, generating 43 straight days of rainfall. Scientists predict that climate change will lead to more frequent megafloods.

But natural forces had an ally in destruction: humans.

At the time, the Gold Rush was in its 12th year.

Miners initially panned for gold in open streams and waters, but by 1861, many had moved on to a new, environmentally-damaging method: hydraulic gold mining.

Hydraulic mining demolished the landscape at a rate of 185,000 cubic feet of water per hour and washed away more than 1.5 billion cubic feet of debris into river systems. One visitor to a hydraulic mining pit observed, “Nature here reminds one of a princess fallen into the hands of robbers who cut off her fingers for the jewels she wears.”



Hydraulic mining at the Malakoff Diggings, Nevada County, California. UC Berkeley, Bancroft Library. BANC PIC 1905.17175:099--ffALB.

Even before the flood, rivers often overflowed from this debris. When the megaflood hit, log dams and small levees were easily overwhelmed. Debris and mercury from hydraulic mining flowed down into the San Francisco Bay, wiping out the oyster population and burying farmers' fields. After additional, devastating floods, a judge essentially banned this practice in 1884, calling hydraulic mining “a public and private nuisance.”