

Big Elk Meadows, Boulder, Morrison

May 4-8, 1969

Rainfall and Streamflow Data: [click here](#)

Damage Estimate: Statewide, \$21 million

The above figure includes: \$12 million in damages to private property, \$750,000 damages to state and federal highways, and \$8 million in damages to other roads and public property. The estimate includes damage in Denver, Adams, Arapahoe, Boulder, Jefferson, Clear Creek, El Paso, and Weld Counties.

Boulder County, damages to roads and bridges, \$892,000, (is included in above figure).

Deaths: 1

Rain began over much of the eastern slope on May 4 and continued almost nonstop until the morning of May 8. Early in the storm a persistent southeasterly flow transported moist air from the Gulf of Mexico into the Plains States, Texas, and Colorado. Beginning on May 5, a High was building to the north in the Montana-Dakota region that brought the moist air from the Midwest into the foothills of Colorado. As the air was lifted by the mountains, the rainfall became more intense. High rainfall rates occurred on May 6-7 when this flow was the strongest. The greatest intensities occurred in a band along the mountains from an area about 25 miles southwest of Denver northward to the Estes Park area. Low intensity rain fell steadily from May 4-7 suggesting convective instability was not present, but rather that the rain was the result of a consistent lifting caused by the flow against the mountain. This pattern persisted until late on May 7 when a second cold front began pushing southward toward the storm area bringing cooler and drier air behind it.

On May 7, the Denver Post reported that “nearly 60 hours of continuous rain sent streams over their banks from Conifer to southwest of Denver to the Longmont area nearly 30 miles north of the city.” Most flooding was caused by river flooding, although some was caused directly by rainwater. Boulder Creek was measured at six-foot depth on May 7, 2.2 feet higher than the previous record of 4.2 feet calculated in 1921.

On May 7, flooding was widespread, however most reports of damage to personal property were confined to Boulder County. South Boulder and Bear Creeks were out of their banks. At least 500 basements were flooded by full sewer mains backing up into them. A trailer court was evacuated in Marshall. Boulder Creek caused damage to the sewage treatment plant in east Boulder. In Longmont, low lying areas around the South St. Vrain were flooded and homes were evacuated. The Denver-Boulder freeway was closed because of 1.5 feet of water flowing over the highway just south of Boulder. Flooding in Lyons caused dozens to evacuate and the South St. Vrain eventually wiped out the town's water supply. By mid-morning on May 7, several communities in Boulder County had been “virtually marooned from roads washing out around them.” The bridges leading into Jamestown and Big Elk Meadows, a cabin area above Lyons, were washed away. In Jamestown, residents dumped old cars into Jim Creek to prevent it from

changing course completely and sweeping right through the one main street in town. Despite the residents' efforts, four buildings in Jamestown were lost into the creek including the town's pump houses. In Big Elk Meadows, some cabins were inundated by up to four feet of water.

Outside of Boulder County, other mountain towns were isolated. Tiny Town, about eight miles from Conifer, was isolated when roads were undercut and washed away by raging river water. An estimated 400 families were isolated in Coal Creek canyon by impassable roads. South Deer Creek washed out bridges, and Bear Creek washed out portions of Colorado 74 between Evergreen and Morrison.

In Denver, flooding was minimal by comparison. The Valley Highway was again flooded. More than 50 intersections in Denver, including several major arterial intersections were closed at the height of the flooding. The South Platte was three feet above flood stage on the evening of May 7 fed by overflow from Bear Creek. About 150 people were evacuated along the creek. North of Denver, the farming communities of Ft. Lupton and Brighton were flooded by several feet of water from the South Platte River. The flood crest at Ft. Lupton on May 8 (8.66 ft.) was higher than it was in 1965 (8.49 ft.).

One death was directly linked to the flooding. A young man drowned on Boulder Creek during the highest water levels on May 7 after being tossed off his inner tube.

Storm totals, according to both official and unofficial measurement, exceeded 10" over much of the area and were over 12" in some localities. It is possible that some of the rain totals might include some error introduced by snowfall counted as rainfall. In Phillipsburg, west of present day Chatfield Reservoir, the Denver Post reported that residents claimed they received 11 inches of rain during the event with at least another inch of moisture in the form of snow that followed the rain. The 13.05" storm total near Boulder is suspect and possibly includes some moisture accumulation from snow.

The Bureau of Reclamation requested that citizens submit their own precipitation observations from the storm. Below are some totals from these "rainbucket" surveys. The measuring period was between 4 p.m. May 4 and about 6 p.m. May 8. In addition, the Bureau stated that the period of heaviest precipitation was between 6 p.m. May 6 and 4 a.m. May 7. According to HMR 55A, the largest total storm report of 20 inches was located at Big Elk Meadows.

5/4-8	SE of Estes Park	20" in 86 hrs.
5/4-8	E of Longmont	Up to 19" in 86 hrs.
5/4-8	Dear Creek Basin	13.0" in 86 hrs.
5/4-8	Near Evergreen	12.6" in 86 hrs.
5/4-8	Stratton Park (W of Ft. Collins)	12.5" in 86 hrs.
5/4-8	SW of Boulder	13.05" in 86 hrs.

From these surveys, in combination with other Bureau data, the Bureau made other storm total precipitation estimates:

5/4-8	Denver	4''-7''
5/4-8	Idaho Springs	6''-7''
5/4-8	Estes Park	5''-6''
5/4-8	Boulder	7''-9''
5/4-8	Bear Valley	9''

Official U.S. Weather Bureau storm totals for the same time period were recorded at weather stations:

5/4-8	Morrison	11.27'' storm total, 5.77'' daily max
5/4-8	Denver	4.71''
5/4-8	Denver WFSO AP	4.87''

Rainfall Data:

Date	Location	Peak Rainfall
5/6	Boulder	3.5'' in 24 hrs.
5/6	Evergreen	4.5'' in 24 hrs.
5/6	Longmont 6 NW	3.4'' in 24 hrs.
5/6	Manitou Springs	2.3'' in 24 hrs.
5/6	Morrison 1 SW	2.82'' in 24 hrs.
5/7	Boulder	2.35'' in 24 hrs.
5/7	Denver WSO City	2.37'' in 24 hrs.
5/7	Evergreen	2.4'' in 24 hrs.
5/7	Morrison 1 SW	2.72'' in 24 hrs.
5/7	Denver WSFO AP	2.95'' in 24 hrs.
5/6-7	Big Elk Meadow	5.35'' in 24 hrs.

Streamflow Peaks:

Date	River and Location	Peak Flow and Height
5/7	South Platte at 19 th St. in Denver	19,500 cfs, 10.47 ft.
5/7	Bear Creek at Morrison	2,340 cfs

Sources:

- The Denver Post, May 5, 7-10, 13, 14, 21, June 15, 1969
- The Boulder Daily Camera, May 6-12, 1969
- http://alert.udfcd.org/bear_history.html
- Storm Data May 1969
- McKee, T.B., Doesken N.J., Colorado Extreme Storm Precipitation Data Study, Colorado State University, Dept. of Atmospheric Science, Ft. Collins, 1997.

-Hydrometeorological Report No. 55A (HMR 55A) Probable Maximum Precipitation Estimates-United States between the Continental Divide and the 103rd Meridian, U.S. Department Of Commerce National Oceanic And Atmospheric Administration, U. S. Department Of Army Corps Of Engineers, U. S. Department Of Interior Bureau Of Reclamation Silver Spring, Md. June 1988.