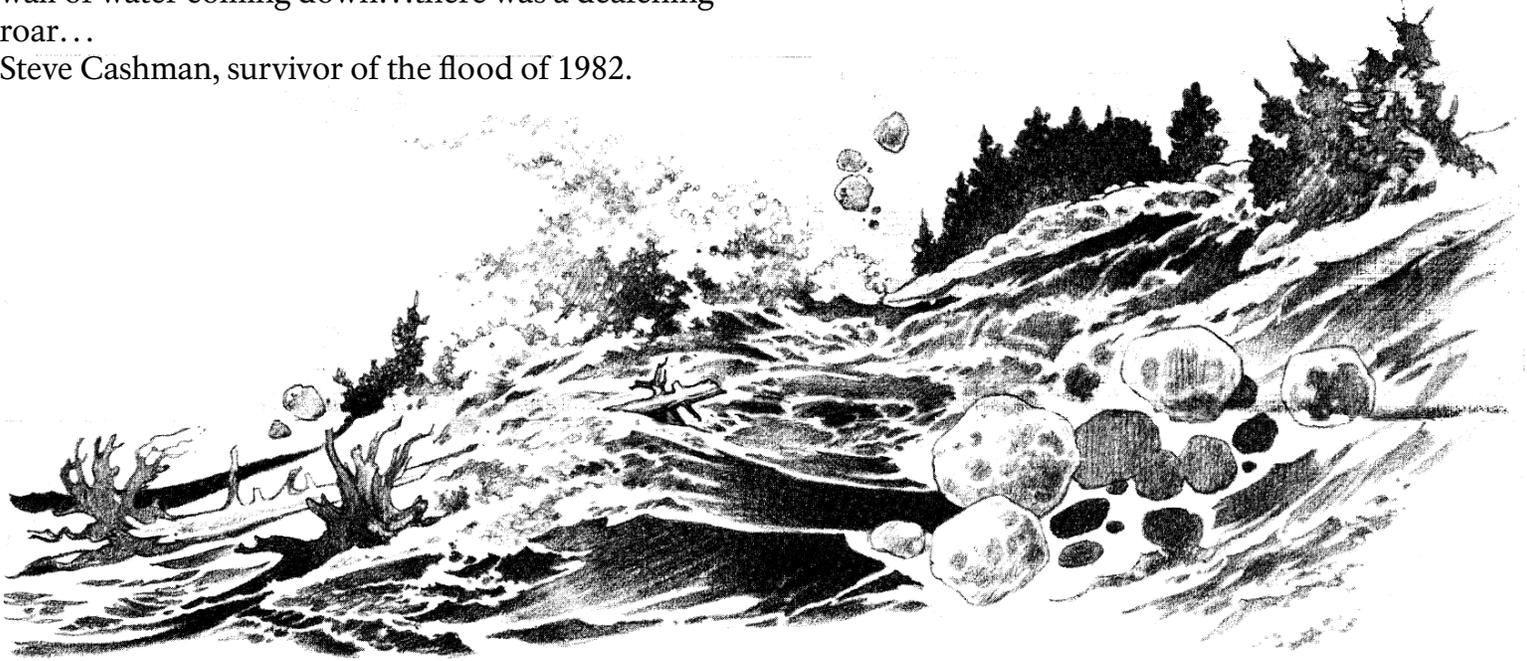




Flood!

"I started to hear a sound like an airplane...there were loud booms...I saw trees crashing over and a wall of water coming down...there was a deafening roar..."

Steve Cashman, survivor of the flood of 1982.



In mountain environments weather patterns can change quickly turning meandering streams into scouring walls of water or *flash floods*. These awesome events can be natural or human-caused. In recent years there have been two major floods in or near Rocky Mountain National Park. The Big Thompson flood in 1976 was a natural disaster. The Lawn Lake flood in 1982 resulted from failure of a dam constructed in 1903.

Big Thompson Canyon Flood

The Big Thompson Canyon located east of the town of Estes Park has steep walls of bedrock and easily eroded soil. The night of July 31, 1976, a large storm system caused torrential rains over the upper section of the river. Water levels swiftly rose over nine feet, cut away much of the river banks, and relocated the main channel. Soil, rocks, trees, homes, and businesses were swept downriver. Upon reaching the plains the

water slowed, spreading debris along several miles of riverbed.

Few flood controls or warning systems existed in 1976. Some individuals ignored warnings or drove into the canyon and were lost in raging flood waters. One hundred forty-five people did not survive this natural disaster. Of those who did, many have stories of clinging to rocks, climbing trees, or scrambling to higher ground.

Flood of '82

Lawn Lake lies high in the Mummy Range in Rocky Mountain National Park. In the early 1900s, prior to the establishment of the park, a 26-foot high earthen dam was added at the outlet of this lake tripling its capacity.

On a sunny Thursday morning, July 15, 1982, a 95-foot long section of the dam failed. Over 300 million gallons of water surged down the Roaring River forming waterwalls up to 30-foot high. In Horseshoe Park, a large open meadow in the national park, trees, sand, and boulders quarried from the riverbed settled, forming an alluvial fan (debris moved by water). This Alluvial Fan now covers 42 acres, contains boulders weighing up to 452 tons, and is 44 feet deep in places. The heaviest rocks and debris carried by the fast moving water were dropped as the water slowed down. Lighter debris such as sand carried farther.

Fall River, swollen by the waters from Roaring River, flowed eastward through Horseshoe Park down into the town of Estes Park. When the water reached Cascade Dam near the national park, it topped the dam, causing the dam to collapse. The resulting four to five-foot wall of water gouged out the river channel taking trees, rocks, cars, propane tanks, and other debris with it. The debris formed a dam at the west end of downtown Estes Park, forcing the water to flow down the main street, well out of the normal river channel. The water and its debris flowed into Lake Estes and was contained behind the Olympus Dam. Three people lost their lives in this flood: one who was camped just below the dam and two who went to take pictures of the rushing waters near the Aspenglen Campground just at the boundary of the national park.



Recovery

Powerful flood waters scour river and stream channels and deposit material downstream, thus changing the land on both large and small scales. Both the Big Thompson Canyon Flood and The Flood of '82 challenged nature's and people's ability to change and adapt.

The Big Thompson Canyon flood was declared a national disaster, thus providing financial and other resources to help people do the necessary recovery work. This work began within days of the flood; flood warning systems were improved; areas of the canyon were revegetated; and the roadway, U.S. Rte. 34, was extensively rebuilt.

The Flood of '82 was also declared a national disaster, bringing financial aid for rebuilding homes and commercial establishments. The flood also provided the impetus to begin a major renewal of the commercial district of the town of Estes Park.

Both floods destroyed some natural areas and enhanced others. While scars are largely healed, in some areas they are still obvious. Fish and plant life have

returned as riverbeds stabilize. Dead trees are being used as bird and insect home sites; new revegetation continues to expand into the scoured areas, providing cover and food for wildlife.

The two floods motivated Rocky Mountain National Park to acquire title to all reservoirs remaining in the park and to remove their dams, returning high altitude lakes to their natural size.

Both floods were tragic in terms of life and property loss. However both provided opportunities to study and learn about recovery processes in high altitude ecosystems. Within one year following the Flood of '82, 35 species of willows and grasses were growing in the damaged areas. Birds along the Roaring River and in West Horseshoe Park near the Alluvial Fan have returned and increased in number. Scientists have recorded the changes in distinctive lobes of fine sediment in the rivers affected by the floods. Predictive models have been developed for how water behaves in floods similar to the Big Thompson Flood and the Flood of '82.



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Park information is available at 970-586-1206 or on-line at www.nps.gov/romo

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