

What Is An Alluvial Fan?

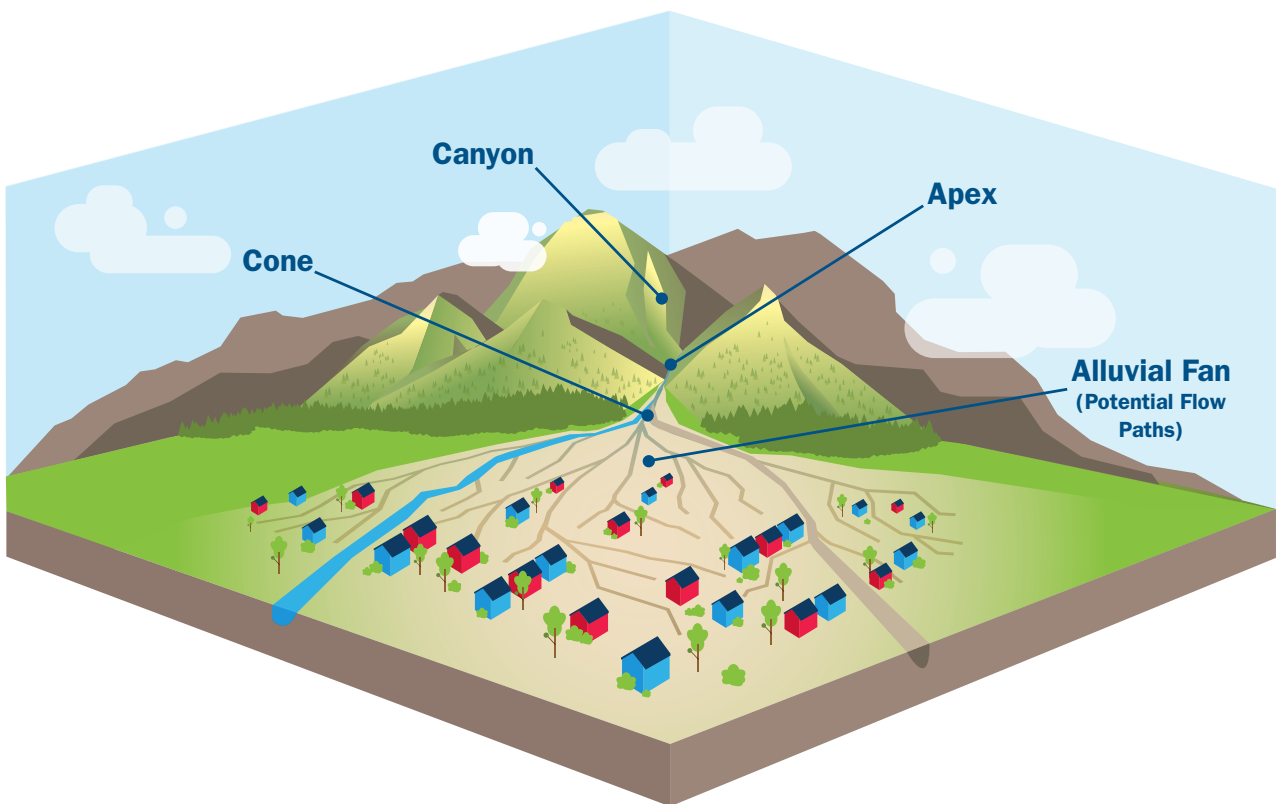
FOR NEFF'S CREEK

SPRING 2019



WHAT IS AN ALLUVIAL FAN?

An alluvial fan is a fan-shaped area where silt, sand, gravel, boulders, and woody debris are deposited by rivers and streams over a long period of time. Alluvial fans are created as flowing water interacts with mountains, hills, or steep canyon walls. Sediment and debris can be deposited over time by powerful rivers or small creeks. The top, or narrow point, of the alluvial fan is called the “apex,” and the wider portion is called the “apron” or “cone.” Alluvial fans can be small or large, depending on the historical water flows. Alluvial fans formed on a steep slope, like the one at Neff’s Creek, are narrow, and thus more cone than fan-shaped.



COMMON IN THE WESTERN UNITED STATES

In the United States, alluvial fans are typically found along the base of mountain fronts in Utah, California, Arizona, Nevada, Colorado, Idaho, New Mexico, Wyoming, Montana, Oregon, and Washington. Here, infrequent but intense storms typical of arid climates, plus abrupt changes in topography, create the necessary conditions for alluvial fan formation.

HOW ALLUVIAL FANS ARE IDENTIFIED

Alluvial fans can be difficult to identify by the untrained eye. Many homeowners don't realize the panoramic views of the valley below are due to their elevated location on an alluvial fan. They may also be unaware that the large boulders which dot their landscape were once carried downhill by powerful floodwaters. Alluvial fans are visible by air, satellite, and mapping technology.

ALLUVIAL FAN RISKS

Active alluvial fans are prone to sudden and unpredictable flood events. Alluvial fan flooding is characterized by sudden water flows, capable of carrying sediment and debris. Each fan, and each flood on a fan, exhibits different flood characteristics. The unpredictability of the flood path is what makes active alluvial fans so potentially hazardous for homeowners and communities. Flood risk also changes over time due to land development, erosion, increasing storm intensity, wildfires, and other causes.

PROTECTING AGAINST ALLUVIAL FAN RISK

Communities and residents in the vicinity of an active alluvial fan should take action to understand and reduce their risk. While each fan is different, solutions could include comprehensive mitigation measures and master drainage plans. These steps range from integrated solutions, such as structural flood control (channels and/or basins), to compatible individual property fixes, such as residential retrofitting. This also includes the purchase of flood insurance, as most homeowners' insurance policies do not cover floods.

HOW TO LEARN MORE

The Utah Division of Emergency Management, in collaboration with Salt Lake County, the City of Mill Creek, and FEMA, will hold a meeting for community leaders and property owners about the updated floodplain maps in the Summer of 2019, which are expected to go effective in Winter of 2020. More information will be provided to the community as details are confirmed. In the meantime visit <https://floodfacts.utah.gov/> for more information on how you can prepare for the next flood.



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