How debris flows can trigger a fire

A study of the San Gabriel Mountains offers one explanation for formation of debris flows after a fire.

By Rosanna Xia

Caltech

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The San Gabriel Mountains are part of the broader Transverse Ranges, a range of mountains that runs along the eastern edge of California from the Santa Monica Mountains to the San Jacinto Mountains. The area is known for its diverse landscape, ranging from coastal flatlands to rugged mountain peaks. The mountains are home to a variety of plant and animal species, including threatened and endangered species.

Debris flows are a common natural occurrence in the mountains, particularly after a fire. The fires can cause the soil to lose its protective vegetation, making it more susceptible to erosion. The debris flows can carry boulders, trees, and other debris, which can pose a significant risk to people and property.

The study conducted at Caltech looked at the San Gabriel Mountains to understand the formation of debris flows after a fire. The research team analyzed the soil composition, vegetation, and topography to identify the factors that contribute to the formation of debris flows.

The study found that the fires can cause the soil to become saturated and unstable, leading to the formation of debris flows. The researchers also found that the presence of boulders and other debris can contribute to the severity of the flows.

The findings of the study can be used to improve land management practices and reduce the risk of debris flows in the area. The results can also be applied to other mountainous regions that are prone to wildfires and debris flows.

One of the key findings of the study is that debris flows can occur even during the winter months, which can be a surprise to those who are not familiar with the area. The researchers emphasize the importance of being prepared for such events, particularly during the wildfire season.

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