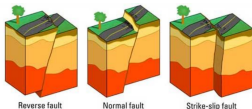


EarthQuakes

Preparing for the next big one.

What is it

An **earthquake** is caused by a sudden **slip** on a **fault**. The **tectonic plates** are always slowly moving, but they get stuck at their edges due to friction. When the **stress** on the edge overcomes the friction, there is an earthquake that releases energy in waves that travel through the earth's crust and cause the shaking that we feel.



Reverse Fault

A **reverse fault** is one in which the **hanging wall** moves **up** relative to the **footwall**. In other words, the **rock above the fault** moves **up** relative to the **rock below the fault**. **Reverse faults** are **less than 45 degrees**.

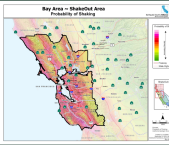
Normal Fault

A **normal fault** is a fault in which the **hanging wall** moves **down** relative to the **footwall**.

Strike-Slip Fault

Strike-slip faults are faults in which the **vertical fracture** moves **horizontally**. **Reverse faults** have **hanging walls** that move **up** relative to the **footwall**. **Normal faults** have **hanging walls** that move **down** relative to the **footwall**. **Strike-slip faults** have **hanging walls** that move **horizontally** relative to the **footwall**.

Here in California



San Andres Fault

The San Andres Fault is a strike-slip fault. The two plates that are rubbing past each other are the North American and Pacific Plates. They move past each other at an average rate of 2.5 inches yearly.

Historic Earthquake: **San Francisco 1906**

Date: **5:12 AM - April 18, 1906**

Magnitude: **7.9 Mw**

Duration: **-Main Quake 20-25 sec**
-Aftershocks 45-60 sec

Who is affected?

Area	Human	Animals	City/Infrastructure	Environment
San Francisco	Yes	Yes	Yes	Yes
San Jose	Yes	Yes	Yes	Yes
San Diego	Yes	Yes	Yes	Yes
Los Angeles	Yes	Yes	Yes	Yes
San Francisco Bay Area	Yes	Yes	Yes	Yes
San Francisco Peninsula	Yes	Yes	Yes	Yes
San Francisco Bay Area	Yes	Yes	Yes	Yes
San Francisco Peninsula	Yes	Yes	Yes	Yes
San Francisco Bay Area	Yes	Yes	Yes	Yes
San Francisco Peninsula	Yes	Yes	Yes	Yes



	People	Animals	Environment
How are they affected?	An average of 10 million people are affected by earthquakes each year. Earthquakes can cause animals to become stressed and lead to a change in behavior and reproduction.	Over the years animals have evolved to be more sensitive towards sensing earthquakes.	A change in the environment can lead to unfamiliar patterns such as daily routines and wildlife.
Effects	- Loss of homes - Loss of food and water - Storage of resources - Power lines - Damage to irrigation systems	- Loss of homes - Forced to evacuate - New habits can lead to extinction - Unfamiliar behaviors	- Damage to infrastructure - Slips and landslides - Landslides - Wildfires

What can be done?

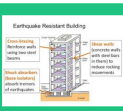
Prepare a Plan

Society

- Individual/Families
- Have canned food
- Have escape route
- Have safe house or location
- Keep a first aid kit available

- Reinforce buildings
- Foundations
- Have more resources available
- To help aid homes and wildlife
- Flocking to trigger smaller earthquakes

BE PREPARED



Summary

With earthquakes having the most unpredictable rates of occurrence it is hard to be ready to face one. Earthquakes here in the bay area happen everyday but are so small you can barely even notice them. California is known for having earthquakes and we can blame that fact that here in the bay area we live along a major fault line being the San Andres Fault, besides that fault line we also have the Hayward Fault line. Throughout Human interference on this earth we have had many. Catastrophic earthquakes that can range in magnitude from 0-10 on the Richter scale. What I have learned with this project is that although earthquakes are unpredictable the chance of a major earthquake to occur is rare. So rare that on average major quakes only occur once in a lifetime. For example included the 1906 San Francisco earthquake because this is one of the most devastating earthquakes that affected the Bay Area. According to InfoPlease.org in 1906 San Francisco was the ninth largest U.S. city with a population of 400,000, and over 225,000 were left homeless by the disaster. The death toll is uncertain. City officials estimated the casualties at 700 but more modern calculations say about 3,000 lost their lives. All of these deaths don't directly occur due to the earthquake itself but the effects of them. Prior to this earthquake humans had little to no knowledge of earthquakes which is why buildings, gas lines, bridges were not properly built to withstand an earthquake. This earthquake gripped several fires around the city that burned for three days and destroyed nearly 500 city blocks. With fires we get had air pollution that also affected those with breathing or lung problems. Populations of humans and wildlife were forced to evacuate in search for shelter. Earthquakes in general are not that destructive it's what they provide that can cause major damage such as have wildfires but they also spark tsunamis and landslides, so what can we do to prepare? With major earthquakes occurring on average once in a lifetime families can prepare by having food and canned food ready in case of evacuation. In case that you are separated from your family have a safe destination where you can reunite with loved ones.

Sources

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