

A

Seminar report

on

Flood

Submitted in partial fulfillment of the requirement for the award of degree
of CIVIL

SUBMITTED

TO:

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BY:

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Preface

I have made this report file on the topic **Flood**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude towho assisting me throughout the prepration of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

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Introduction

When purchasing a house or property, a largely ignored aspect is the ground that the house sits on and the environment surrounding the property. Before choosing an area in which to buy a home, many people inquire about traffic-noise levels, crime rates, quality of schools, and whether the house is under the flight path of a major airport.

It is logically better to obtain this kind of information *before* one buys or builds a home, rather than be surprised the first night by jets taking off from a nearby airport. Similarly, gaining knowledge about geologic conditions in an area will assist prospective homeowners, home builders, developers, and real estate agents to make informed decisions regarding potential problems.

Across Arizona, rocks of all types and ages serve as records of geologic processes that have occurred in the past and are continuing to occur. Some of these processes are merely nuisances to use of the land, whereas others may present serious hazards. We define a *geologic hazard* as any geologic condition or process that poses a risk of injury to humans or damage to structures.

Geologic hazards are an unavoidable part of living on planet Earth. From floods to earthquakes to landslides, no place on the Earth is immune from some risk of damage caused by a geologic condition or process. Learning what these conditions are and where they might occur are the first steps toward avoiding them or reducing their effects.

What is a Flood?

In plain English, a flood is an excess of water or mud on land that is normally dry. A flood is a condition that occurs when water overflows the artificial or natural boundaries of a stream, river, or other body of water onto normally dry land. Floods often happen due to heavy rainfall or thawing snow.

History Of Floods

- In 1228, my great, great, great, grandfather was in the Netherlands flood that was believed to have killed 100,000 people.
- In 1824, my dad was in the Neva River flood located in St.Petersburg-Kronshtadt, Russia. The reason it flooded was because of an ice jam.
- My grandfather was in Henan Province, China, when the Huang He overflowed and more than 1 million people died and 300 villages were swept away in 1887.
- This massive flood in 1911 made 3,750,000 homeless and killed 100,000. This happened because the Yangtze river flooded in China and created a lake 80 miles by 35 miles.
- On September of 1928, Lake Okeechobee in Florida had a flood where 2,000 people died.
- In 1943 in New Delhi, India, three dams collapsed that killed about 5,000 people.
- In March of 1974, in Tubarao, Brazil a flood killed more than 1,000 people and left more than 60,000 homeless.

Types of flood

Flooding can happen anywhere, at any time, and can be caused by more than just rain. Even if you don't live near a river or creek, different types of flooding may still happen in your area from other causes.

Riverine flooding

In riverine flooding, relatively high water levels overtop the natural or artificial banks of a stream or river. The nature of riverine flooding can vary significantly in terms of cause, timing and depth between different locations. Coastal rivers with short, steep headwaters often have floods that rise and recede quickly. Inland floods with low gradients have floods that move slowly down the river, sometimes lasting for several months.

Flash flooding

Flash flooding occurs when soil absorption, runoff or drainage cannot adequately disperse intense rainfall, and is usually caused by slow-moving thunderstorms. Flash floods are generally defined as developing in six hours or less from rainfall to the onset of flooding.

Dam failure

Although dam failures are rare, their effects can be significant. In Victoria dam safety is monitored, and warning arrangements are in place to warn downstream residents of potential dam failure threats. Should dam failure occur, significant downstream flooding can involve potentially swift flowing water and high amounts of debris.

Storm surge

Storm surge occurs when sea levels are elevated above the usual tidal limit due to the action of intense low pressure systems over the open ocean. The low pressure causes sea level to rise as there is less air pressing down on the sea. Combined with gale force onshore winds, this can lead to flooding of low-lying coastal land.

Benefits of flood

Soil Fertility

An excess of water can be damaging to any natural or manmade structure, but the replenishment of essential nutrients in soil is possible with floodwater. Flooding can also water crops. The Ancient Egyptians utilised the annual flooding of the Nile to water their crops, replenish the soil and provide food for their community.

Planting crops that can tolerate flooding could help areas of the modern world too. The habitats of birds and fish, and thus the ecosystems containing these animals, can also benefit from flooding in this way.

Hydroelectricity

Building dams and other structures can make use of the powerful mass of water travelling along a juncture of a river. This can electricity can power the computers used to improve techniques of flood forecasting, prevention and protection, as well as warning the world through the internet of flooding incidents. The remains of a town flooded to build a new hydroelectric dam in Zhejiang, China, is pictured.

Financial Input

The immediate aftermath of a flood may lead to the release of financial aid for a country from other nations, but more often than not in the long-term the affected nation will spend money on studying floods to design and implement new forms of flood protection.

This money will save money from being spent in the future, but more importantly lives will be saved too. Flooding often causes home-owners to spend money fitting a home with domestic flood products, such as those provided by Stormguard Floodplan, providing them with peace of mind.

Governments will usually release funds in the form of research grants and other funding for scientists and engineers dedicated to creating flood solutions on a national scale in the period after a devastating flood, which protects future generations from disaster.

Tourism is also a possibility in the aftermath of floods that have destroyed or submerged entire towns, such as the submarine built to accommodate tourists of the underwater City of Lion (pictured).

Awareness

Flooding awareness is a vital component of flood prevention and protection. If an individual in a high risk area only becomes aware of the Environment Agency's risk map and flood warning facilities during a flooding crisis they may not be fully informed or prepared for the situation.

With foreknowledge of potential floods, those in affected areas can learn about the facilities and public services available to assist them, ensure their insurance policies cover flooding, learn First Aid skills, and prepare their home for a possible incursion.

Community

The people of Dresden in Germany truly embody this spirit. Hundreds of ordinary Germans worked together to form sandbag embankments protecting their streets after insurance premiums have risen to unreasonable costs for most in high risk areas.

Flooding, as with many other forms of natural or manmade disaster, can reveal individual heroes and a sense of community within an afflicted area.

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Disadvantages of flood

It can cause damage to property and homes

It can cause loss of life

It can kill animals

It can cause damage to vehicles
It can do many things

What causes flood?

Rains

Each time there are more rains than the drainage system can take, there can be floods. Sometimes, there is heavy rain for a very short period that results in floods.

In other times, there may be light rain for many days and weeks and can also result in floods.

River overflow

Rivers can overflow their banks to cause flooding.

This happens when there is more water upstream than usual, and as it flows downstream to the adjacent low-lying areas (also called a floodplain), there is a burst and water gets into the land.

Strong winds in coastal areas

Sea water can be carried by massive winds and hurricanes onto dry coastal lands and cause flooding. Sometimes this is made worse if the winds carry rains themselves. Sometimes water from the sea resulting from a tsunami can flow inland to cause damage.

Dam breaking

Dams are man-made blocks mounted to hold water flowing down from a highland. The power in the water is used to turn propellers to generate electricity.

Sometimes, too much water held up in the dam can cause it to break and overflow the area. Excess water can also be intentionally released from the dam to prevent it from breaking and that can also cause floods.

Ice and snow-melts

In many cold regions, heavy snow over the winter usually stays un-melted for sometime. There are also mountains that have ice on top of them.

Sometimes the ice suddenly melts when the temperature rises, resulting in massive movement of water into places that are usually dry.

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Effects of flood

Economic

During floods (especially flash floods), roads, bridges, farms, houses and automobiles are destroyed. People become homeless. Additionally, the government deploys firemen, police and other emergency apparatuses to help the affected. All these come at a heavy cost to people and the government. It usually takes years for affected communities to be re-built and business to come back to normalcy.

Environment

The environment also suffers when floods happen. Chemicals and other hazardous substances end up in the water and eventually contaminate the water bodies that floods end up in. In 2011, a huge tsunami hit Japan, and sea water flooded a part of the coastline. The flooding caused massive leakage in nuclear plants and has since caused high radiation in that area. Authorities in Japan fear that Fukushima radiation levels are 18 times higher than even thought.

Additionally, flooding causes kills animals, and others insects are introduced to affected areas, distorting the natural balance of the ecosystem.

People

May people are killed in flash floods. Many more are injured and others made homeless. Water supply and electricity are disrupted and people struggle and suffer as a result.

In addition to this, flooding brings a lot of diseases and infections including military fever, pneumonic plague, dermatopathia and dysentery. Sometimes insects and snakes make their ways to the area and cause a lot of havoc.

Conclusions

The slope of rivers running towards Lynmouth and the high rainfall in their catchment determines high possibility of flooding there and the likelihood of severe erosion. The deep, incised valleys and smooth contours provided little storage for excess waters.

The poor maintenance of the river had left previous flood debris and trees in the flood's passage. Further restrictions were placed upon the river with the encroachment of properties upon the river banks. The saturated soils could retain little of the precipitation that had fallen on Exmoor over the previous days. The water table was already high and all the water had to travel into the river system.

The presence of low pressure convinced weather men that this was an explainable scenario, although rather unusual. Thunderstorms had played a major part of the British weather throughout the country, where observation had been remarked at the rarity of such events.

Further remarks used such terms as 'unorthodox', which, when later combined with Whitehall officials' admittance that rain making experiments had sometime been conducted over Lynmouth, fuelled the belief of government responsibility. Official declassified files were later obtained by The Sunday Times and provided the first evidence that during the height of the Cold War the MoD was trying to develop techniques to flood enemy trenches, paralyse forces and bog down tanks in the event of a Soviet invasion.

This experiments involved the dispersal of silver iodide or dry ice particles from small aircraft into clouds to induce rain in a technique called cloud-seeding (Brennan, 1997). The records show that ministers authorised rainmaking experiments across Britain from 1949 to 1957. However, a connection with the disaster has not been demonstrated and there is no evidence of success of or co-incidence of experiments over Lynmouth. The only experiments taking place anywhere near the time of the flood were in East Anglia and the flood was caused by a depression moving eastward from the Atlantic and drawing in moist air from France and Wales.

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