



UNIT 2– WATER, LANDFORMS AND PEOPLE

The Boscastle flood of 16th August 2004 – A Case Study of a Serious Flood in an MEDC

**As well as being a really good case study of a flood this can also be used as a case study for Unit 1, 'Climate, the Environment and People' as A WEATHER EVENT CAUSED BY LOW PRESSURE.*

Words in **bold print are explained in the word box at the end.*

Where is Boscastle?

- Boscastle is in North Cornwall in the south west of the United Kingdom.

What is Boscastle like?

- It is a small village.
- It is on Cornwall's north coast. Originally it was a small port and fishing village, but now the main economic activity is tourism.
- The shops, pubs, hotels and other local businesses in the village rely on tourism.
- The summer is the busiest time of year in Boscastle, and August 16th 2004 was just another busy day.

Is Boscastle at risk of flooding?

YES.

- The village of Boscastle sits in a quite narrow and steep sided river valley.
- The River Valency flows into the sea at Boscastle.
- A **tributary**, the River Jordan flows into the Valency in the centre of Boscastle.

What caused the flood on 16th August 2004?

(Put simply the flood was caused by very, very heavy rain in a very short period of time)

- The flood was caused by **Low Pressure** in the eastern Atlantic Ocean. This caused a large depression and thunderstorms grew out of this.
- The **Met Office** had forecast heavy downpours of rain developing over north Cornwall. However they couldn't say exactly where.
- At 12.00 noon heavy rain began to fall in north Cornwall. It was like a **cloudburst**, with thunder and lightning.
- A very localised and heavy storm hit Boscastle, 200mm of rain fell in a five hour period.
- **Surface runoff** from the valley sides caused both rivers to quickly overflow with water.
- Flood water rushed through Boscastle at over 4 metres per second.
- By 8.00pm the same day both rivers were almost back to **normal flow!**
- An estimated 2 million tonnes of water flowed through Boscastle that day.



What were the effects on the environment?

- Many trees were destroyed as well as other vegetation.
- Animals' habitats were destroyed, e.g. nesting birds and animals living on the edge of the rivers.
- Pollution washed into the rivers and sea. One rescue worker said that that afternoon there was a stench of petrol from the fuel tanks of destroyed cars.

BELOW: A rescue helicopter hovers over Boscastle.

Seven helicopters began winching people to safety from 5.30pm on the 16th August 2004.



How were people affected?

- Miraculously no-one died. The only injury reported was a broken thumb.
- 58 properties were flooded and 4 were swept away. For a number of weeks some villagers were not allowed back to inspect the damage to their homes and businesses.
- People's parked cars - many belonging to tourists visiting Boscastle - were swept away. 84 cars were recovered from Boscastle harbour and streets, 32 were never seen again, they were probably swept out to sea.
- 300 metres of sewer pipes were blocked. **Raw sewage** contaminated flood water and caused health concerns.
- Damage to buildings and services was estimated at £2 million.
- The flood cost insurance companies about £15 million.



Two of the many cars washed away that day.

It was 26th August before many villagers were allowed back into their homes.



What can be done to prevent such a disaster in future?

(Experts have worked out that the risk of a similar flood happening in Boscastle is 1 in 400 in any one year)

- In 2005 the **Environment Agency** completed the construction of an underground pipe that will get rid of water from the River Jordan more quickly.
- The river bed of the River Valency is being widened. This will mean more water can be carried by the river without it bursting its banks.
- A low bridge near the harbour (that trapped **debris** and blocked water during the flood) is to be rebuilt as a higher structure. This will reduce the risk of flooding in the village

Could a flood like this happen again?

YES!

If Boscastle gets storms as bad as the one in August 2004 it will be very difficult for the Environment Agency to give warnings quickly enough.

**Word box*

Cloud Burst	Very heavy rain
Debris	Wreckage e.g. trees, cars, parts of buildings damaged by floodwater and washed into the river
Depression	Unsettled weather resulting in winds and rain
Environment Agency	The government organisation that protect the environment. They look after air, land and water.
Habitats	Where animals live
Low Pressure	This results in depressions (see above)
Met Office	An organisation that provide weather forecasts
Normal Flow	The amount of water normally in the river
Raw Sewage	Sewage that has not been treated
Surface Runoff	Rainwater that runs down steep slopes
Tributary	A small river that flows into a bigger river

***These are some case study questions that you can now answer by using the Boscastle Flood case study.
Have a go at these questions.***

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◆ CASE STUDY:

A weather event caused by a high OR low pressure weather system.

- a Name a location where you have studied a weather event.*
- b State whether the weather event was caused by a high OR a low pressure weather system.*
- c Describe how the weather event affected people and the environment.*
- d Explain what caused the weather event. Use diagrams if you wish.*

◆ CASE STUDY:

A place where a serious flood OR drought has affected people and the environment.

- a Name a place where you have studied a serious flood OR a serious drought.*
- b Describe how the flood or drought affected people and the environment.*
- c Explain what people could do OR have done to prevent the flood or drought affecting them in future.*