Worksheet 1—Storm Desmond

You can print this worksheet or complete the activities in your exercise book

Task 1: Causes of Storm Desmond: Read the paragraphs in the table below. Colour code them to show human and physical causes of Storm Desmond

<table>
<thead>
<tr>
<th>Human Causes</th>
<th>Physical Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The storm caused a period of prolonged, intense rainfall across Northern England. 341.4mm was measured in 24 hours at Honister Pass.</td>
<td>Urnasisation and building on flood plains meant that not as much water could infiltrate into the ground and underground stores so more water is flowing rapidly into rivers, increasing the discharge.</td>
</tr>
<tr>
<td>Flood defences exacerbat-ed the problem because after the water overtopped the defences there was then now way of it flowing back into the river so it flowed through the settlements instead.</td>
<td>The UK was located in a mild, moist SW airstream with fronts brings exceptionally prolonged and heavy rainfall. On reaching the west coast, warm moist air rises over the mountains causing heavy rainfall.</td>
</tr>
<tr>
<td>Decrease in flood defence spending from 2014/2015 £802m to £695m for 2015 to 2016</td>
<td>Events that were 1:100 years are now expected to be 1:10 year events.</td>
</tr>
<tr>
<td>River straightening meant that there was more water in the river at one time.</td>
<td>Destruction of upland habitats meant the water couldn’t be intercepted by trees so more flowed into the rivers and lakes.</td>
</tr>
<tr>
<td>The heavy rain and strong winds were caused by a deep Atlantic low pressure system which arrived on Friday from the Atlantic.</td>
<td>Many new flood defences not built to withstand the extreme nature of this storm. Carlisle: Flood defences built in 2010 for a 1:100 year event. Cost £38m but were inadequate for an event the size of Desmond. Kendal: The existing defences were designed to contain flows of 280 cumecs. On 5th December the Kent rose to 400 cumecs. 23,400 properties were protected by flood defences but nearly the same number were flooded (Desmond and Eva).</td>
</tr>
<tr>
<td>The rain fell on catchments that were already saturated and resulted in higher river levels.</td>
<td>Reservoirs e.g. Thirlmere could have stored water but they were full before the rains came. More water was entering than could be released.</td>
</tr>
<tr>
<td>Global warming: Rising temperatures are likely to lead to storms with more rain and a higher intensity of rain.</td>
<td></td>
</tr>
</tbody>
</table>

Task 2: Look at Figure 1 - a map of flood warnings and flood alerts during Storm Desmond. Describe the distribution of flooding warnings and alerts within the UK (4 marks)

**Figure 1: Map of Flood Warnings and Flood Alerts during Storm Desmond**

**Remember:** Trend/adjectives, Data and Manipulation

**Things to consider:** Countries, parts of the country, counties, settlements, types of flood warnings. See slide 6 of the PowerPoint for further support.

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### Immediate Responses

- The government launched the Bellwin scheme to fully reimburse councils for the costs of dealing with flooding, and ministers reviewed all flood defence plans.
- More than 1000 people were evacuated across Cumbria, with a further 1000 evacuated from the Scottish border town of Hawick. Cumbria Fire and Rescue service evacuated more than 100 people from Keswick.
- The Cumbria Flood Recovery Fund 2015 was launched aims to contribute to clean-up costs, emergency repairs, clothing, food and drink, heating and heating equipment, childcare equipment and basic furniture for individuals and families who already struggle financially.
- £400,000 was donated within 48 hours by the public after a £1m appeal was launched to help people affected by flooding caused by Storm Desmond.
- The government’s Cobra committee announced the 5,000 households and businesses affected would be given council tax and business rate relief.
- More than 100 flood warnings and more than 70 flood alerts were in place in northern England on Saturday night, with more than 90 flood warnings and alerts in Scotland.
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### Long Term Responses

- The Government mobilised a full national emergency response. This included 200 military personnel and supporting assets (including a Chinook helicopter); 50 high-volume pumps; and the Environment Agency moving people, temporary defences and pumps to the north-west.
- Tim Farron: Nov 2016 £25m Flood Relief Scheme approved and will take 2½ years to complete and some earlier work to include new embankments, improved drainage and storage and enhanced river channel capacity. But Govt will not fund work to make bridges more resilient.
- A new Cumbrian Floods Partnership group has also been formed to “consider what improvements to flood defences in the region may be needed, look at upstream options for slowing key rivers to reduce the intensity of water flows at peak times and build stronger links between local residents, community groups and flood defence planning”.
- Following the floods the Government announced a £50m repair and renew scheme for Cumbria and Lancashire after the floods, promising businesses and homeowners they will quickly receive the help they need.
- Two funds were set up to allow people to donate money to support repairing the natural environment affected by Storm Desmond. These were the Ullswater Environment Recovery Fund and Fix the Fells.
- A National Flood Resilience Review took place to better protect the country from future flooding and increasingly extreme weather events.