



Mark Carwardine's **AT A GLANCE...**

28

FLOODING

WHAT CAUSES FLOODING?

Quite simply, floods are caused by a combination of too much rain and an inability of rivers and their catchment areas to cope with the deluge. Either moderate rainfall over an unusually long time, or heavy rainfall over a short period, can cause rivers to burst their banks and cause flooding.

IS IT AN ACT OF GOD?

Yes and no. Rain is natural, of course, and rivers have always flooded (that's why the surrounding land is called the floodplain). So, in one way, flooding could be described as a natural disaster. That is what we are encouraged to believe, but the truth is that we are exacerbating the problem – through incompetence, ignorance and greed – by making precipitation heavier and intensifying its impact.

HOW ARE WE DOING THIS?

Global warming. It may not cause storms per se, but it certainly makes them worse: warmer seas evaporate more quickly, warmer air holds more vapour, and the result is that more water gets dumped more intensely. In many parts of the world, storms are becoming more powerful during which several months' worth of rain can fall in just a few hours. The British winter of 1 December 2013 to 19 February 2014 was the wettest since records began 250 years ago, for example, with devastating flooding affecting huge swathes of the country; Hurricane Harvey, which hit

the USA in August 2017, was the country's wettest-ever tropical cyclone; and in September of last year, Mumbai experienced a deluge of 304mm in 24 hours, the second highest figure for that month ever.

HOW ARE WE INTENSIFYING THEIR IMPACT?

Normally, rainwater is absorbed by soil and vegetation, which act like a giant sponge and release it gradually. But deforestation, over-cultivation, the burning of grouse moors and other forms of habitat degradation are destroying this sponge. Instead of being held back, rainwater is washing into rivers so fast that they simply cannot cope. We are making things even worse by straightening and dredging the rivers, which accelerates the flow of water and makes flooding further downstream even more likely; and we are building embankments that disconnect them from their floodplains.

WHAT ABOUT URBANISATION?

Urbanisation is a more extreme example, because we are replacing the natural sponges with completely non-porous cities. Around the world, as more and more people move from rural to urban areas in search of work, cities are expanding – rapidly and unchecked – onto marshlands, wetlands and other flood-prone areas. Ecological sense is being



Worcester was hit by severe flooding in 2014. Events like this are becoming more frequent.

ditched in favour of explosive growth, and the result is predictable.

SHOULD WE WORRY?

Yes. UN data records an average of 171 major worldwide floods per year from 2005–2014, up from 127 per year in the previous decade. In the past 30 years or so, floods killed 500,000 people worldwide and displaced a further 650 million. It is already one of the planet's biggest environmental issues, and it is getting worse.

WHAT MUST WE DO?

Well, we should stop building on floodplains, and we need to invest properly in flood defences wherever we have already made that obvious mistake. But building higher walls is not a long-term solution – it's just a sticking plaster. We need to reduce the amount of water, and slow the flow. That means replanting woodlands and nurturing other natural sponges; leaving natural obstructions in rivers to impede their flow (beavers can do this for nothing); and letting them meander as they once did. We also need to tackle global warming, of course, by reducing our consumption of fossil fuels and developing renewable energy sources. And to do all this, we need politicians who understand that flooding is not a simple act of god, after all. 🗳️

“WE ARE ENCOURAGED TO BELIEVE THAT FLOODING IS A SIMPLE ACT OF GOD, BUT WE ARE EXACERBATING THE PROBLEM.”

MARK CARWARDINE is a frustrated and frank conservationist.

Every month he demystifies some of the most important issues affecting the world's wildlife and assesses the organisations that protect it.

● Would you like to comment? Email wildlifeletters@immediate.co.uk

➕ FIND OUT MORE

Future of UK flood defence: <http://bit.ly/2s5y7YR>