Natural Flood Management

Flooding

Floods happen when water spills out over the sides of rivers. This can be caused by heavy rain and global warming can increase flooding.

Many people in the UK live near rivers, and flooding can be very damaging to people and their homes. Engineers design ways to help prevent and reduce the risks.

The Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015 as a call to "end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity".

You can find out more here:
https://www.undp.org/sustainable-development-goals

Flooding and the Sustainable Development Goals

Reducing damage from flooding is part of:

- SDG 6: **Clean water and sanitation**

- SDG 9: **Industry, innovation and infrastructure**

- SDG 11: **Sustainable cities and communities**

Sustainable solutions

It is important to:

- think about everything that could be affected by putting flood protection in place, including local wildlife and surrounding land.

- not make big changes to the shape of the river that might cause it to flow faster than it did before.

Concrete is a material often used in flood defences. (You can find out about this in a session from another of our projects, Building to Break Barriers, available [here](#)).
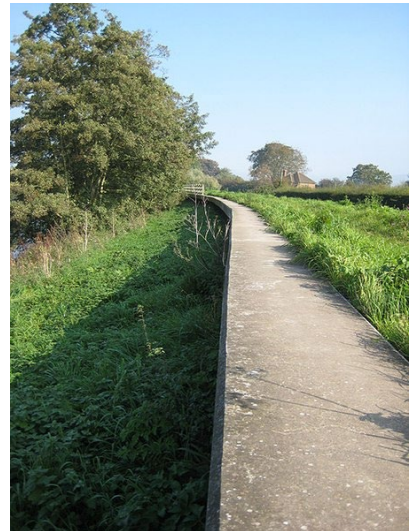

Image: Pauline Eccles, CC BY-SA 2.0, via Wikimedia Commons

What about more **natural solutions**?

Image: Laura Hobbs. Used with permission.

Adding vegetation means that there are more plant roots to take up water (so less goes into the river).

Putting bends back into rivers slows down their flow. This is called **re-meandering**.

Find out more about Natural Flood Management from Stroud District Council: https://vimeo.com/139321429

Sustainable solutions

Natural barriers (or 'leaky dams') made of materials such as mud, trees and leaves can slow down river flow.

In some places, **wetland environments** have been restored. This can help hold water upstream, and make it flow more slowly downstream, reducing flood risk.

And another way to reduce flooding that's gaining more attention is to introduce…**beavers**!

- Beaver dams hold water and then release it slowly.

- Beaver activity makes rivers bendier.

- Their dams also filter river water, making it cleaner.

Beavers have been released and supported at sites in the UK (the one in the picture is at the Wyre Forest in Worcestershire/Shropshire), turning streams into ponds and helping reduce flooding.

You can find out more from the Environment Agency here, including an animation showing the impact of beavers.

Minecraft Challenge

- Build a river and a house or small settlement in Minecraft

- Engineer a natural flood management method (e.g. trees, re-meandering, natural barriers or beavers)

- Think about where this should be placed to help prevent people's homes flooding

If you do not have access to Minecraft you could:
- draw your design
- build your own using simple materials.