



WATER GARDENING

**A GUIDE TO PROJECTS AROUND THE
HOME THAT CONTRIBUTE TO REDUCING
FLOOD RISK IN YOUR AREA**

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NATURAL FLOOD MANAGEMENT

Natural flood management (NFM) is a complimentary and sustainable approach to traditional hard engineered flood defences (such as flood walls and gates) that works with nature to help capture and slow the flow of rain water throughout the landscape and into our rivers.

NFM covers a wide variety of measures from tree and woodland planting, to creation of temporary storm water storage pools, to management that restores the sponge like capabilities of soils. With enough of these features throughout the landscape, NFM can help to reduce the height of a flood and the time it takes for floods to reach populated areas, allowing more time to prepare.

This is very much the case in urban areas too, where this approach is more generally referred to as sustainable drainage systems (SDS). The spaces around our houses, particularly gardens no matter how big or small, offer a fantastic opportunity to help capture and slow the flow of storm waters. This leaflet outlines a number of different mini NFM projects that you can complete around your home to reduce the pressure on drains and rivers and reduce flood risk in your area.

For more information on NFM scan the QR code to watch a youtube video where Dr. Debbie Coldwell, DCRT's NFM Officer, discusses NFM in more detail.



GREENING UP YOUR GARDEN

A major contributor to increased flood risk is the amount of hard surfaces across urban areas. Storm water rushes off our roofs, onto paved gardens and drives, along roads, and then in to drains that can struggle to cope with the volume and speed of water pouring into them. Slowing this water down and capturing it in your garden is a great way to do your bit to help reduce flood risk. Replacing hard standing areas with more permeable options such as grass, plants or pebbles, for example, can reduce the rate of surface runoff as well as create more wildlife habitat. Follow the 6 key steps below to create more ideas for greening up your garden.



WATER BUTTS

A water butt is a great addition to any garden. These big tubs can be connected to gutters and drainpipes from the roofs of houses or garden sheds or stores to collect rainwater. They are particularly handy during times of drought, but with a little effort, they can also be a great tool in the battle against flooding.

The key to this is making sure your water butt is not full so that there is space to store water during heavy rainfall. There are a few different ways to do this:



If not needed for watering, just keep the tap open slightly. This will allow rainwater to collect in the butt during storms and be released slowly, meaning water won't rush straight off our roofs and into struggling sewers.



If using for watering, put in a second tap halfway up and leave it open. The bottom half will store water for gardening and the top half can be used for storm water storage and slow release.



To slow flows further, connect your open tap to a flowerbed, using some hose pipe, so water will slowly filter through the ground watering the plants as it goes.



There are a lot of online guides available for how to install and retrofit your water butt to help reduce flood risk.

MINI WATER BUTTS

No space for a water butt? If you have limited garden space you can create mini water butts to help slow the flow of water. They are simple to make and are a great project for children.

What You'll Need:

- A large plastic bottle with its lid e.g. milk or laundry detergent bottles
- Cable ties or string
- Scissors
- Outdoor paints and brushes
- Glue and decorations

Instructions:

1. Prep the plastic bottle by removing any labels, cleaning and drying it.
2. Carefully cut off the bottom of the bottle. If you are working with children make sure to do this step yourself.
3. Use paints and decorations to add your own design to the bottle. This may be a measuring scale up the side or a garden themed decoration.
4. Look at your garden space and work out where rainwater may naturally channel and drip off surfaces. This will be a good place to put your water butt.
5. Using the cable ties or string, securely attach the bottle where it will collect rainwater e.g. to a fence or stake with the lid facing downwards.
6. Drain any water that collects in your water butt into a watering can by unscrewing the lid.



RAIN GARDEN



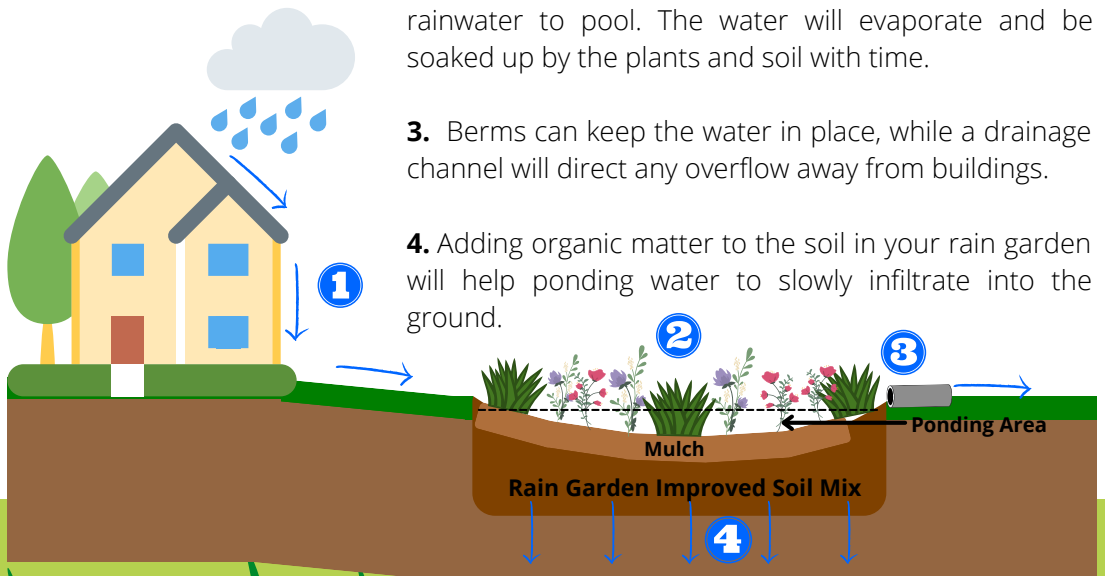
"Rain Garden" James Steakley;
[https://commons.wikimedia.org/wiki/File:Rain_garden_\(2014\).JPG](https://commons.wikimedia.org/wiki/File:Rain_garden_(2014).JPG); CC-SA

A rain garden is a shallow depression that has been filled with garden plants that are able to withstand temporary flooding.

They are usually placed on a gentle downslope away from buildings or hard surfaces so that rainwater will run off into them and collect forming a temporary pond. The pooling water slowly drains away through the soil, helping to slow the flow of rain water into drains and rivers.

Watch where water flows in your garden, dig out an area and plant with species that like to get wet! Check out the RHS rain garden guide for more details.

1. Run off from roof and impermeable surfaces flows downslope to the rain garden.
2. The shallow depression of the rain garden allows rainwater to pool. The water will evaporate and be soaked up by the plants and soil with time.
3. Berms can keep the water in place, while a drainage channel will direct any overflow away from buildings.
4. Adding organic matter to the soil in your rain garden will help ponding water to slowly infiltrate into the ground.



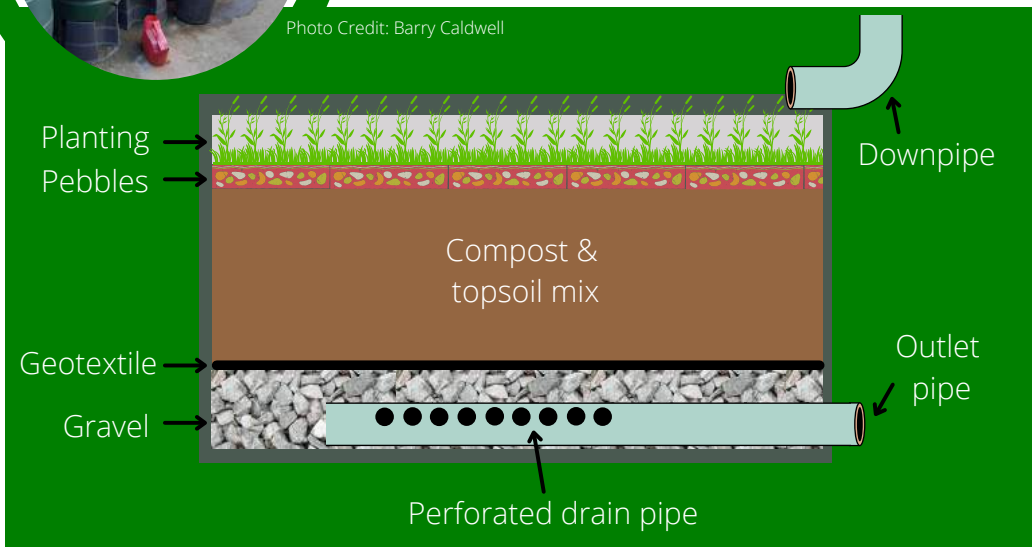
RAIN GARDEN PLANTERS

We've outlined rain gardens as well as the use of water butts attached to drainpipes to capture rainfall and slow down surface water runoff. A rain garden planter is essentially a combination of the two.

By directing downpipes into a planter, water is absorbed by the soil and taken up by the plants. An outlet pipe is fitted to take excess water from the planter out into a drain or rain garden on the ground.



Photo Credit: Barry Caldwell



If you enjoy a spot of DIY, rain garden planters make a great project! Get creative and build something that works with what space you have. Check out The South East Rivers Trust's handy guide on How to build a rain garden planter for further inspiration!

GREEN ROOFS

Green roofs not only look great but they can be havens for pollinators and help soak up rainfall too.

Green roofs don't have to be done on a large scale. Garden sheds or bin/log stores can be transformed into quite the feature with a green roof.



"EVA- Lanxmeer Green Roof2" Lamiot;
https://commons.wikimedia.org/wiki/File:EVA-_Lanxmeer_Green_roof2_2009.jpg; CC-BY-SA

Relatively simple to do, they are the perfect project for DIY enthusiasts.

- **The most important thing to remember is to make sure that the supporting structure e.g. the shed, can support the extra weight of the plants, soil and water.**
-



Green roofs also provide the perfect opportunity to install a water butt as mentioned previously. Adding a drain from the green roof to a water butt will further slow the flow during heavy rainfall.

There are some brilliant case studies and guides available online, including several from the Slow the Flow project in Calderdale.

SAVING WATER

Most of us know a few simple things we can do around the home to save water and do so out of habit, especially during times of drought. But what about during storms and heavy rainfall?

Such events can lead to our drains and sewers being overwhelmed resulting in flooding and discharges of raw sewage into our rivers. Reducing our water use during such times can help to ease the pressure on our sewers as well as save you some pennies if on a water meter.

Tips to saving water at home:



Putting a full load in the washing machine and using the eco setting



Using a washing up bowl saves lots of water. If you use your dishwasher make sure it is full and on the eco setting



Fixing a tap that drips could save over 5,500 litres of water a year!



Avoid activities that use a lot of water during storms e.g. taking a bath



Save up to 1.2 litres with every flush by fitting a Flushsaver in your toilet

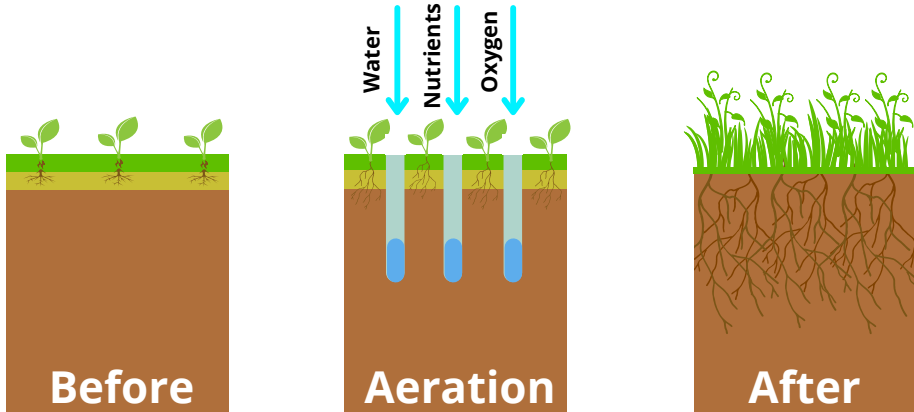


Why not collect cool water from your shower before it warms up and give your house plants a drink?

Blockages in the sewer system can also increase flood risk so it's really important to avoid putting fats, oils and grease down the sink or items other than the 3 Ps (pee, poo, paper!) down the toilet.

LAWN SPIKING

Lawn spiking, also known as lawn aeration, not only helps the growth of grass and plants but increases infiltration of rainfall into the soil.



Aeration is the process of spiking long, thin holes into the ground in order to provide the soil with good air circulation and improve the grass roots water and nutrient uptake.

Walking on your lawn or using heavy gardening machines can compact the top layers of soil. This creates a barrier just below the surface that stops water from soaking into the ground. Instead, during heavy rainfall, water will pool and run off the surface reaching drains and rivers more quickly.

In the UK there are two ideal times to spike your lawn: in the spring and autumn. You can do this using gardening tools such as forks, or you can buy lawn spike shoes that you put on over your normal shoes.



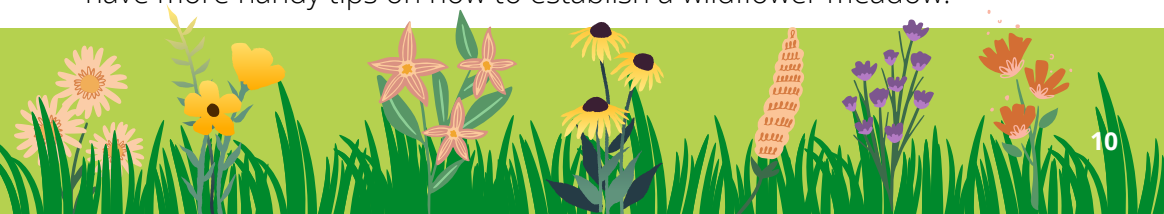
WILDFLOWERS

Wildflower meadows can help increase water infiltration into soils. Through the establishment of a diverse range of species, including deep rooting plants that break through compacted soils, soil health and structure can be enhanced, which in turn allows soils to absorb and store more water.



Planting a mix of wildflowers in your garden with different rooting depths will also look beautiful and attract different kinds of wildlife. The longer vegetation also creates a rougher surface which further slows the flow of water during times of heavy rainfall.

Perennial meadows are best grown on nutrient poor soils while annual meadows are better on richer soils that are high in nutrients. The RHS have more handy tips on how to establish a wildflower meadow.



LET IT GROW



If you have your own lawn then one of the simplest and cheapest ways to help slow the flow in your garden is to let your grass grow. By mowing your lawn less frequently and letting your grass grow longer, it will increase the resistance of surface run off and help to slow the flow. You can do this across your entire lawn or just in patches. Mowing paths through your lawn is a great way to keep it looking loved while maintaining access.

In addition to helping during times of heavy rainfall, **having longer grass will also help in drought conditions.** Cutting your lawn less will make it more resistant to turning brown during droughts. If your lawn does turn brown in patches don't worry as the grass will regrow and colonise again quickly once it has rained.



Allowing your grass to grow long will also provide more wildlife habitats and resources for pollinators if left to flower.

AVOID FAKE GRASS



Artificial grass is made up of synthetic fibres. It is increasingly being used in gardens for a variety of reasons but often because it is considered lower maintenance. This ease, however, comes at the cost of significant environmental damage.

If you're concerned about flooding in your area then best avoid fake grass. Although when installed correctly artificial grass can allow for some infiltration, it is significantly less and slower than that of natural grass or plants.

Reducing the amount and speed of water being absorbed into soils during heavy rainfall can increase the rate of surface run off. This results in rainwater reaching our drains and rivers quicker, contributing to flooding.

Artificial grass is also bad for the environment for multiple reasons including:

- It uses a lot of plastic, it isn't recyclable and it releases microplastic pollutants into the environment.
- Manufacturing, transportation and installation of artificial grass has a large carbon footprint.
- Fake grass damages the soil beneath it destroying important soil organisms such as earthworms and beneficial microbes.
- Artificial grass is devoid of wildlife. Gardens act as key wildlife habitats and corridors in urban areas but fake grass cannot support any wildlife at all.

USEFUL WEBSITES

Greening Up Your Garden:

<https://youtu.be/2fskdBwDS4s>

<https://www.rhs.org.uk/advice/how-to-green-your-grey-front-garden>

Water Butts:

[https://www.diy.com/ideas-advice/how-to-install-a-water-](https://www.diy.com/ideas-advice/how-to-install-a-water-butt/PROD_npcart_100446.art)

[butt/PROD_npcart_100446.art](https://www.diy.com/ideas-advice/how-to-install-a-water-butt/PROD_npcart_100446.art)

<https://slowtheflow.net/retrofitting-water-butts/>

Rain Garden:

<https://raingardens.info/wp-content/uploads/2012/07/UKRainGarden-Guide.pdf>

<https://www.wwt.org.uk/discover-wetlands/gardening-for-wetlands/how-to-make-a-rain-garden/>

Rain Garden Planter:

<https://slowtheflow.net/urban-suds-case-study-hebden-bridge-town-hall-courtyard-rain-garden-planters/>

<https://slowtheflow.net/initial-results-in-from-rain-garden-planters-they-work/>

<https://doncatchment.wordpress.com/2020/06/05/a-classy-rain-garden/>

<https://www.groundwork.org.uk/how-to-create-a-rain-garden-planter/>

Green Roofs:

<https://slowtheflow.net/case-studies/2/>

Saving Water:

<https://www.yorkshirewater.com/your-water/save-water/>

<https://doncatchment.wordpress.com/2020/04/02/7-steps-to-a-river-friendly-home/>

Lawn Spiking:

<https://www.fantasticgardeners.co.uk/lawn-care/what-is-lawn-aeration-why-when-and-how-to-do-it/>

https://www.briggsandstratton.com/na/en_us/support/maintenance-how-to/browse/aeration-why-how-and-when-to-aerate-your-lawn.html

Wildflowers:

<https://www.rhs.org.uk/lawns/wildflower-meadow-establishment>

<https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/create-a-wildflower-meadow/>

Avoid Fake Grass:

<https://www.jackwallington.com/17-reasons-to-avoid-fake-lawns-how-bad-is-artificial-grass-for-the-environment/>

CONTACT US

If you try any of our water gardening projects be sure to snap a photo and send it to us at:

www.dcrtr.org.uk

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@don_catchment-rt



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