

Weather Wise Gardens:

A guide to creating a nature-friendly garden for our changing climate.



Did you know 1 in 4 homes are now at serious risk of flooding in Essex?

The MET Office predicts:

- More frequent heatwaves
- Drier summers
- Intense winter storms

These changes mean more flash floods and droughts.

Basic Principles

Slow the flow:

Help your garden absorb rainwater by

- disconnecting downpipes
- removing hard surfaces

Store water:

Give excess water somewhere to go with:

- water butts
- Rain Gardens
- Swales
- Ponds

Planning your garden:

get creative by combining different features listed in the leaflet. Size features depending on your property's needs

But your garden can help!

This guide will help you plan your garden to help reduce the impacts of extreme weather while helping nature thrive.



Observe your garden:

- Watch how rainwater flows - where it comes from, where it collects.
- Consider sunlight, layout, and soil type to find what works best.
- Choose plants that flower at different times to keep your garden vibrant year-round.

Scan the QR code to visit flood.essex.gov.uk for more information



How to use this guide

The guide suggests 12 features of a nature-friendly garden. Look out for the symbols below - they show how each feature benefits the environment



Supports Wildlife



Drought Resistant



Air Feels Cooler



Carbon Capture (makes our atmosphere healthier)



Reduces Flooding

A **cost guide** is included to help you plan. Prices will vary depending on the scale of your project and how you source materials.



Low cost <£100



Medium Cost £100-£1000



High Cost >£1000

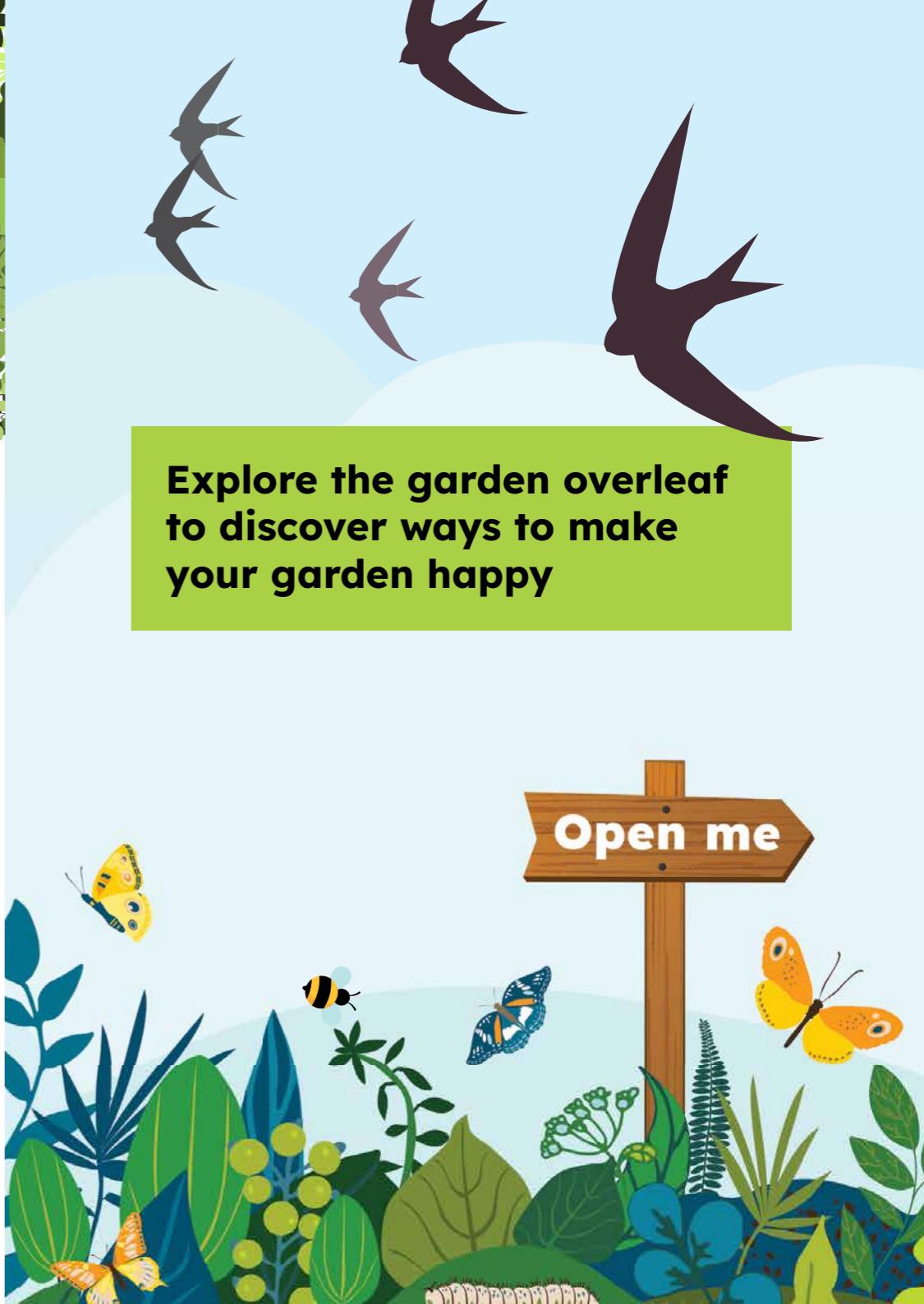


Many features suggested also support wildlife which can help your garden thrive, just like how having a bee friendly garden can help plants flourish.

Want to save money?

Our estimated costs are based on using new materials, and sometimes hiring contractors. But you can cut costs by: doing the work yourself and repurposing materials. Check out DIY ideas from trusted sources like: WWT (Wildfowl and Wetlands Trust), Flood Re, RHS (Royal Horticultural Society), and RSPB (Royal Society for the Protection of Birds)

Explore the garden overleaf to discover ways to make your garden happy





The image overleaf is an example of a weather-wise garden. The rest of the guide offers detailed information on each feature to help you plan a garden that suits your space and your budget. From hedges to permeable paths, every feature plays a role in supporting nature.



1 Let your grass grow

One of the simplest things you can do is mow your lawn less frequently.

Letting grass grow longer—even in just a small patch—can make a big difference for pollinators, birds, and other wildlife.

Initiatives like ‘No Mow May’ are a fantastic way to ease into it without feeling like you’re giving up control of your garden.





Did you know a quarter of all front gardens are completely paved over?
Materials that water can't seep through are contributing to flash flooding.

2 Remove hard surfaces

Hard surfaces like concrete and tarmac stop rainwater from soaking into the ground. Instead, water runs off quickly into drains, which can overwhelm local water systems and increase flood risk.

Planning a new path or driveway? Use materials that



let water soak into the ground like gravel, permeable paving block, or reinforced grass. These options allow rainwater to drain naturally into the ground, reducing runoff and flash flooding. No planning permission is needed to use permeable materials, or remove old impermeable surfaces.



3 Wildlife hedges

Most hedge plants flow and fruit on last year's growth.

To support wildlife, cut them every other year, or trim just a portion annually. This allows flower and berries to develop.

Don't tidy too much! Leave leaf litter and seed heads to attract: hedgehogs, birds, small mammals and insects. Bonus benefit: Hedges help improve air quality by trapping pollution from nearby roads.



Shopping list of native trees or shrubs to choose from:

- Hawthorn
- Beech
- Spindle
- Blackthorn
- Hazel
- Holly
- Field Maple
- Buckthorn
- Rowan
- Crab Apple

4 Disconnect your downpipe

The average UK roof can produce 5500 litres of runoff for every 2.5cm of rainfall. Now imagine a whole street adding that to the sewer system!

One of the cheapest and most effective things you can do to reduce sewer flooding is to disconnect your downpipe.

Instead redirect rainwater to a water butt or rain garden. You might even qualify for a sewerage rebate! For more information search 'surface water drainage rebate'.



The average UK roof can produce enough water to fill **15 bathtubs** in one rainfall..



5 Install a water butt

Water butts are easy and quick to install on most household downpipes. They can capture heavy rainfall, slowing the rate which it floods into our sewer systems.

On average, Essex residents use 8.3 litres per head every day for outdoor purposes. A water butt saves precious fresh water for times of drought and reduces water bills too!



Special Offer!
Essex postcodes can get a discounted water butt and compost bins, for more information search 'Water Butts Get Composting'

6 Rain gardens

A rain garden is a shallow area that collects stormwater and slowly drains overtime. They are wet when it's wet, and dry when it's dry.

Rain gardens also do a great job of improving water quality by filtering it through the ground. Rain gardens attract birds, butterflies, bees and bugs.

Your rain garden can connect to other elements such as a water butt, rain chain, stormwater planter, or permanent ponds. The Royal Horticultural Society has many ideas for DIY rain gardens.



DIY Rain Garden to-do lists:

Design



- Select location.** Choose a spot in full sun or partial shade in a well-drained area on a very gentle incline (10% or less). If closer than 5m consult an expert to avoid damage to foundations.
- Asses Soil.** Test drainage by digging a hole and timing how long water takes to drain. Ideal rate: 1.25cm/hour (but up to 5cm/hour is workable)
- Calculate Size and Depth.** Size: Aim for 20% of your roof area. Depth: For fast draining soil (5cm/hour): 15cm deep, plus 6cm below the lowest point. Slower-draining soil needs a deeper garden.



Build



- Shape the Garden.** Use a hose or string to outline your shape. Dig a saucer-shaped basin with a flat, level base. Use the removed soil to create a raised bank around the edge.



- Add a Drainage Channel.** Leave a notch on the edge. Fill it with gravel to allow excess water to exit.

- Fill** Mix in organic matter to improve soil structure such as leaf mould, compost, soil conditioner. Backfill to the original level.



Connect



- Dig a small channel a few metres from the downpipe to direct water to the rain garden.

Plant



- Select plants that can tolerate being waterlogged for up to 48 hours, especially at the centre

Shopping List!

Plants that work great for a rain garden: ragged robin, irises, willow, water mints, Iris pseudacorus, Juncus effusus, Carex pendula, Lobelia cardinalis



7. Nature pond

A nature pond can attract lots of wildlife such as bees, butterflies, and frogs. The best shape and size for your pond depends mainly on the size and style of your garden, your DIY abilities and your budget!

Ponds typically use either a rigid moulded liner, or a softer flexible liner which you shape yourself. Rigid liners are easier to install and better for smaller ponds, whereas flexible liners are more difficult to install but have more landscaping potential. For a budget friendly version upcycle an old sink or bathtub.



Water should be 80cm deep to allow for the widest range of plants, ensure a depth of at least 40cm deep to avoid overheating in the summer. Position your pond in partial shade and ensure creatures can get in and out of the pond easily.



Material shopping list:

Liner (either rigid, or flexible), and underfelt or sand

Plant shopping list:

Underwater plants – hornwort or water starwort

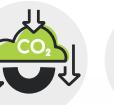
Plants with tall stems – water iris

Floating plants for resting stations – water lilies or water hawthorn

Pollinator-friendly plants – lesser spearwort, flowering rush and marsh marigolds



8 Tree pits



Plant around tree bases to provide food and shelter for birds, insects and other wildlife.

Pre-constructed tree pits can also store water after heavy rainfall. Make sure to leave enough space for plant life to grow.



9 Swale



A shallow channel that guides water to flower beds or ponds.

Swales are easy to build and maintain. They create their own mini habitat and are great at purifying water

DIY Swale to-do list:

Design



- Observe the natural flow of water across your property - swales can be used to aid the natural flow or redirect it.
- Think about whether your swale will be linked to another feature.



Dig



- Swales are typically three times as wide as they are deep, so if your swale has a depth of 15cm deep, it should be 45cm wide, and as long you desire.
- Mound the dirt that you dig out on the side.
- Swales must have a level base to allow water to drain.

Fill



- **Base** - a layer of gravel is best for drainage but more costly, a layer of leaves and rotting wood also works as a low-cost option.
- **Middle** - if your existing soil drains quickly (at least 1.25cm per hour), it can just be loosened, if it drains slower replace it with 60% screened sand and 40% compost
- **Top** - gravel or woodchips

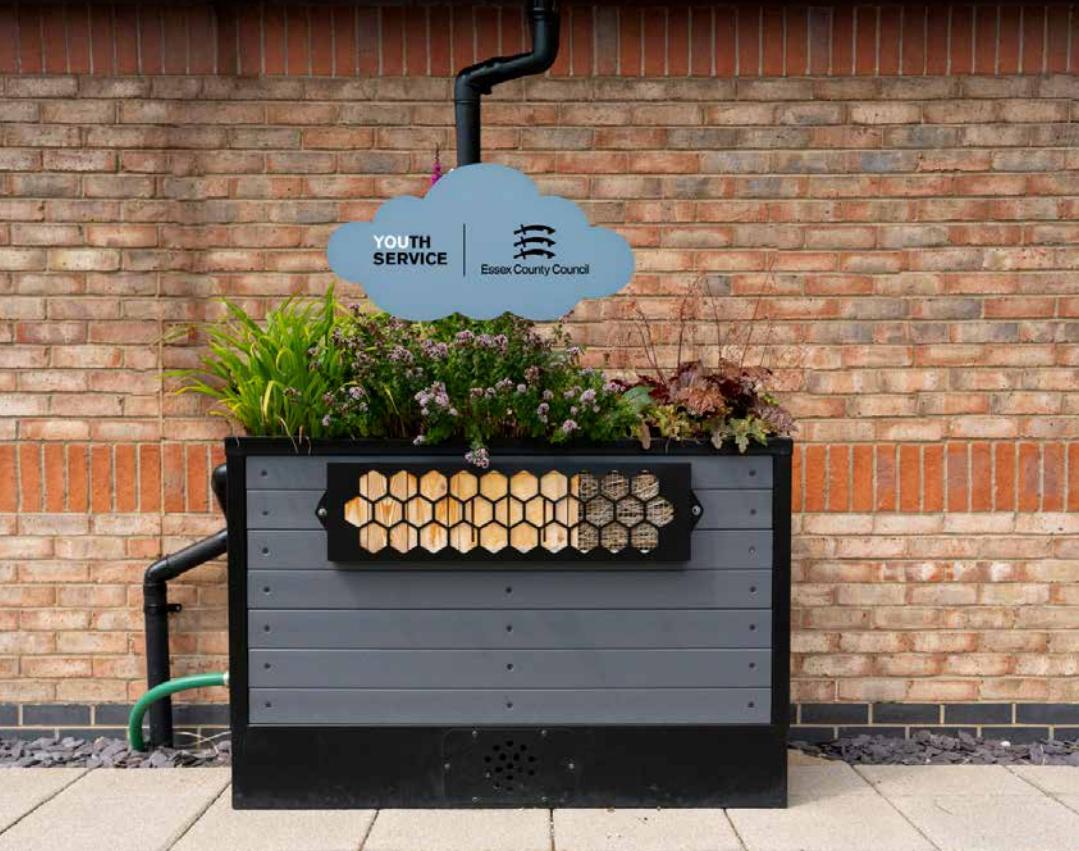
10 Extreme weather plants



UK summers are forecast to get hotter, drier with periods of more intense rain. Trees can live for decades or even centuries, so planting trees and shrubs that can withstand extreme weather conditions will also create a resilient landscape.

Plant Shopping List!

Plants that tolerate extreme weather: Silverbirch, gingko, lavender, ornamental grasses, Mediterranean herbs, foxgloves, Lady's Smock, Verbascum, Geraniums, and agapanthus, fennel



11 SuDS planters

Combine water storage with planting with sustainable urban drainage planter.

The units can be purchased or you can create your own from recycled containers.

Special layers within the planter need to be created. Beneath the plants and soil are gravel, grit and a leaky pipe system to act as reservoirs for runoff.



The plants should be able to tolerate wet conditions at times. Get creative and add a rain chain.

12 Green roof

A roof size of 6 by 8 metres could produce 30,000 litres of surface water a year!

Green roofs can be a great small scale retrofit projects for sheds, bin stores, and outbuildings but are suitable for any flat or low sloping roof. Plantlife in a green roof can reduce noise, cool buildings and reduce storm water run-off by up to 65%.

Green roofs come in a variety of types, consider how much installation and maintenance time you're prepared to give and your budget. Full gardens with a deeper soil layer will take longer to install and require more maintenance but cost less whereas ready-grown trays will be faster to install, require less



maintenance but cost more.

Spend a bit of time researching to find the best fit for your space and your wallet.

Material Shopping List:

Structure and membrane
(depends on green roof type),

Filter layer - examples: perlite, leca, and sand, rockwool, crushed tiles or recycled concrete aggregate(if using),

Top dressing - (optional) wood chips or gravel

Growing medium - A soil that's suitable for your plants

Plant list - sedums, succulents like stonecrop and hens and chicks, sedges, groundcovers, wildflower seed mixes (native where possible)

Your neighbourhood and the bigger picture

Your garden can be a stepping stone for wildlife and part of a wider climate solution.

Do you have a water channel that runs through your garden? Natural watercourses play an important part in managing flood risk. Keeping watercourses flowing will allow water to drain away from flood hotspots, but installing reedbeds or leaky dams may be a better option to slow the flow if flooding occurs downstream.

Flood risk maps are a brilliant way to understand how water is moving through your community. They can show where ponding may occur in a heavy storm, or where downstream rivers might flood and impact people. For more

information search 'know your flood risk'.

Neighbourhoods can help improve wider water quality and other environmental challenges. Search 'Essex Water Your Future' for more information on water supply challenges in Essex, and what you can do at home. The Local Nature Recovery Strategy shows how your garden could be a critical stepping stone for vulnerable species in the wider landscape. For more information search Essex Local Nature Recovery Strategy. Do your bit by making any of the changes in this book.



This information is issued by:
Climate Adaptation and Mitigation

Contact us:
floods@essex.gov.com

Climate Adaptation and Mitigation
Essex County Council
County Hall, Chelmsford,
Essex CM1 1QH

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