



#TeamWilder Toolkit: Wildlife Actions - Water

Whether big or small, your outdoor space can help to provide vital wetland habitats for a whole host of garden wildlife. Creating features from bird baths to container ponds and everything in-between means that you'll be helping a multitude of species to thrive.

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Image credit: Penny Dixie

Creating a pond doesn't have to cost the earth and you don't need a large outdoor space! We'll show you how to create a container pond using recycled materials as well as a wildlife pond to suit a variety of outdoor patches.

1. Creating a bucket or container pond

Think big, start small. If you have a smaller outdoor space or one where you're unable to dig into the ground a container pond is perfect. A washing-up bowl, a large plant pot, or a disused sink could all be repurposed as ponds, providing you make sure creatures can get in and out. Any pond can become a feeding ground for birds, hedgehogs, and bats – making your space a wildlife haven!

- **Choose a spot.** Your pond will want light, but not full sunlight all day. You can dig a hole and sink your container, or just have it sitting on top.
- If the container isn't watertight, e.g. an old plant pot, then add a piece of pond liner.
- **Add a layer of gravel and rocks.** Use logs or stones to create a range of depths and a slope for creatures to climb in and out. If your container isn't sunk in you'll need a ramp from the ground outside the pond.
- **Fill your pond.** Use rainwater as tap water contains chemicals.
- **Start planting!** You only need one or two plants. Great plants for small ponds include:
 - **Miniature waterlily** (*Nymphaea "Pygmaea Helvola"*)
 - **Lesser spearwort** (*Ranunculus flammula*)
 - **Starwort** (*Callitriche stagnalis*)
 - **Flowering rush** (*Butomus umbellatus*)
- Now watch and wait! Wildlife will come to your pond of its own accord. Don't introduce frogs, fish or even water from another pond as this can spread disease.

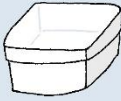


How to build a mini wildlife pond

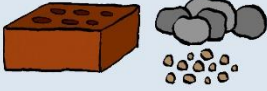


You will need:

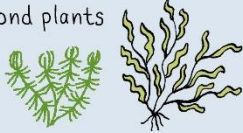
- a watertight container*



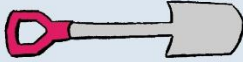
- old bricks, rocks and pebbles



- pond plants



- spade



* Is there anything that you can upcycle? It could be an old washing-up bowl, sink or even a plant pot. Aim for 20-30cm deep.

- 1 Choose a spot. Your pond will need light, but not full sunlight all day. You can dig a hole and sink your container, or just have it sitting on top.
- 2 If the container isn't watertight, e.g. an old plant pot, then add a piece of pond liner.

- 3 Add a layer of gravel and rocks.
- 4 Fill your pond with rainwater (tap water contains chemicals).
- 5 Start planting... you only need two or three plants.
- 6 Now watch and wait! Wildlife will come to your pond of its own accord.

One vertical growing plant that reaches out of the water e.g. flowering rush



Use logs or stones to create a range of depths and a slope for creatures to climb in and out

One submerged plant e.g. hornwort or spiked water milfoil

Illustration: Corinne Welch © Copyright Royal Society of Wildlife Trusts 2019 and Royal Horticultural Society 2019

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Don't introduce frogs, fish or even water from another pond as this can spread disease.

2. Creating a wildlife pond

Planning a wildlife pond doesn't require lots of research but taking a good look at the space that you have will help you to create a thriving habitat for nature. Here are some elements that we recommend considering before picking up your tools and getting stuck into digging:

It's all in the timing. A pond can be created at any time of year – however, the optimal time to start one is during autumn or winter. This will give your pond plenty of time to establish before spring when you'll start to see it becoming a habitat for a variety of wildlife.

Location, location, location. It is better for wildlife if you put your pond in a warm, sunny area – species such as tadpoles, dragonflies and plants will thrive in these conditions. Barriers such as walls, sheds and fences can be good for protecting your pond from adverse weather but watch out for trees and bushes overhanging your chosen location as these can shed leaves which may clog up your pond.

You may also want to think about locating your pond in a low-lying spot as well as considering the potential flood risks posed to structures surrounding your location.

If you've got the space, ponds of at least 2m x 2m are best for wildlife but small ponds make a great feature and will still be a welcome addition for a variety of wild visitors to your garden.



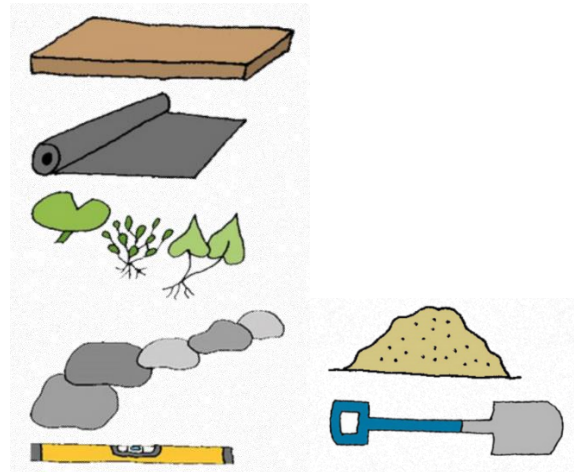
Peaks and troughs. Think about the topography of your pond. A mixture of shallow (less than 30cms) and deeper (over 60cms) areas in your pond allows for spaces where amphibians can hibernate. A sloping 'beach' is also ideal to allow birds and other animals easy access. Dragonflies like a sunny pond and some clear space for egg laying. You may want to draw up a rough sketch of where you'd like these areas to sit so that you're prepared when you begin digging.

Planning complete!

Follow our step-by-step guide to create your wildlife pond:

You will need:

- A big patch of garden
- A plank of wood
- Pond liner - preferably made of butyl rubber, which is durable, flexible, moderately cheap and easy to work with
- A variety of pond plants
- Some large rocks
- A spirit level
- Builder's sand
- A good spade or mini-digger depending on how big your pond will be.
- Water (use rainwater for best results)

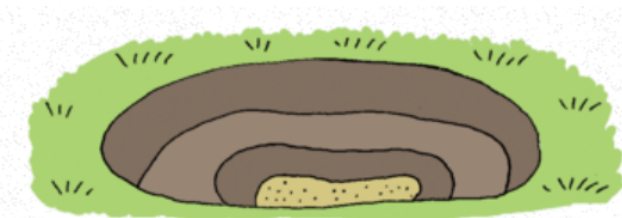


Step 1:

Get started by marking out your pond on the ground. You can do this using pegs and string, but a rope or hosepipe also work well.

Step 2:

Start digging! If you've drawn up a plan of your pond during your planning, then use this to guide you as you go. Ensure that the sides of your pond are level as you dig by placing a plank across the pond's hole with a spirit level on top.



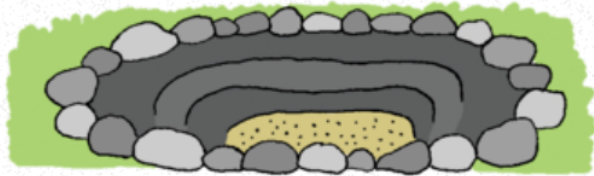
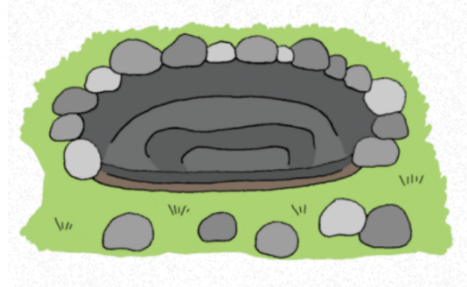
Step 3:

Remove any sharp stones from the bottom of your newly dug pond and put down a 5 cm-thick layer of sand to line the hole. We recommend sand as it's sterile and won't harbour any microbes, but you can also try old carpet, newspapers or even loft insulation material.



Step 4:

Dig a trench around the edge of the pond for the overhanging pond liner to drop into. Place the liner carefully in the hole and tuck the edge into the trench; weigh it down with large rocks. Any extra excess liner can be snipped off with scissors.



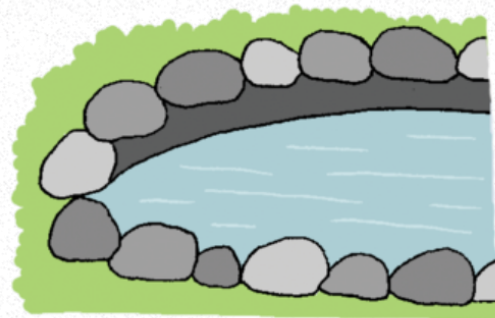
Step 5:

Fill the bottom of the pond with the remaining sand.

Step 6:

Fill the pond up, this may take longer than you think. If possible, use collected rainwater to fill your pond, or fill from the tap with a hose. To stop the sand substrate dispersing, rest the nozzle of the hose on a plastic bag to absorb some of the energy. If you do fill your pond with tap water, then leave it so stand for a few days before adding it in.

As the pond fills up, the liner will stretch. Back fill the trench around the edge of the pond with soil. As the pond is filling, place turf, soil, or flagstones over the exposed liner at the pond edges. Butyl liner degrades in sunlight, so try not to leave areas of uncovered liner exposed for too long.



Step 7:

Plants can be introduced to your pond 1-2 weeks after the initial filling with water. Carefully selected native species will support your local wildlife.



Step 8:

Watch and see what wildlife visits. Place stones, logs and plants around the edges to create habitats for pond-visiting creatures. Consider adding a plank of wood or a similar ramp to help any wildlife that might fall in. By including a gently sloping beach area when digging your pond, you can ensure wildlife have an easy way out.

If plants are well chosen, and the pond is kept in a relatively balanced ecological state, it shouldn't need much maintenance at all. However, do keep an eye out for a build-up of dead organic matter and encroaching vegetation.

If you find that your wildlife pond has become full of old decaying leaves then don't despair!



Leave it until late autumn to clear out and refresh with rainwater as you could have the perfect hoverfly lagoon!

Did you know that 40 species of hoverfly larvae (rat-tailed maggots) need a nutrient rich water body?

3. Make your own bird bath

Bird baths are perfect for keeping birds hydrated in all temperatures. They are the ideal spot for them to rest and offer the chance of a quick dip to keep their feathers nice and clean. Providing a watering hole for birds may help to improve the volume of birds in your outdoor space as well as giving them a safe and clean area to clean and bathe.

Follow these simple steps to create your own bird bath and make your patch the place to be for birds!

You will need:

- A watertight, shallow bowl or dish (some good examples of these include plant pot saucers, a bin lid, old frying pans)
- A sturdy base for your bowl or dish (this could be an upturned pot or planter, a pile of stacked materials such as bricks, an old barrel or even a tree stump – endless possibilities!)
- Stones
- Water



Image credit: Joan Burkmar

Creating your bird bath:

1. **Choose the ideal spot for your bird bath!** We recommend somewhere where the base and saucer will sit sturdily without the need for glue.
Top tip! Select somewhere open where prying paws don't have any hiding places to pounce from and visiting birds have a good vantage point.
2. **Place down your sturdy base.** If you're using a pile of stacked materials such as bricks, lay them in a square large enough to hold the bowl or dish on top.
3. **Now put your bowl or dish on top of your base.** Make sure it's durable enough for larger birds such as wood pigeons to land on without tipping over.
4. **Gather your stones together and arrange them so that birds can perch to drink without sliding around.** Bees may also use the bath to drink from so try to put some smaller stones in for them to rescue themselves if they start to slip.
5. **Fill with clean, fresh water and see who comes to quench their thirst!**
6. **Dependent on how popular your bird bath is, you'll need to wash it out regularly, scrub it and disinfect with vinegar diluted with water (we recommend 1 part vinegar to 9 parts water).** Sparrows also like a dust bath after their water bath so look out for hollows in the soil that sparrows have made and leave them alone.



4. Build a bog garden

Bog gardens can be a preferable option for those with young children as they are shallower than a pond but still attract a wide variety of wildlife. Frogs, toads and even grass snakes will be attracted to the lush pastures provided by a bog garden. Dragons and damselflies will settle atop taller grasses and bees and butterflies will flit around the flowers.

Another bonus is that the plants that thrive in a bog garden setting are often the most striking so will create a real impact in your garden overall!

You will need:

- A rope, hose, or length of material to measure size.
- Shovel
- Butyl liner
- Sharp scissors (to cut slits into liner)
- Rainwater or tap water
- Plants for your bog garden

Suggested plants:

- **Creeping Jenny** - *Lysimachia nummularia*
- **Hemp-agrimony** - *Eupatorium cannabinum*
- **Marsh-marigold** - *Caltha palustris*
- **Meadowsweet** - *Filipendula ulmaria*
- **Plantain lily** - *Hosta* spp.
- **Snake's-head-fritillary** - *Fritillaria meleagris*
- **Water Avens** - *Geum rivale*

- 1. Decide on the size of your bog garden.** Lay out a length of rope or hose to help you to work this out. Beware of making it very large as it will be harder to maintain, and steppingstones may be required!

Top tip! If you don't have the space for a bog garden, you can create a miniature one using a container. This will likely dry out more quickly than a traditional bog garden so remember to top it up with water frequently.

- 2. Research your plants.** Unlike pond plants, bog plants thrive in soil with high nutrient levels and that contain lots of organic matter. There is a huge variety of bog plants, from creeping Jenny to tiny water forget-me-nots. Make sure to do a little research on whether your plants are sun – or shade-loving, what degree of damp and acidity they prefer, and the amount of space they require.

Don't forget! Ask for peat-free when buying plants.

- 3. Establish your bog garden.** Making an artificial bog is very much like making a pond. Pick a spot on level ground, away from overhanging trees.
- 4. Dig a hole about 30cm (12 inches) deep.** Lay a butyl liner in the hole. Make a few drainage slits in the liner and return the excavated soil, mixed with some organic material, to the hole.
- 5. Water the soil thoroughly - try to use rainwater, especially if the soil is acidic.** If tap water is your only means of filling, let it stand for a few days to allow any additives to break down. Leave the soil to settle for about a week before planting up.



- 6. Plant your bog garden plants.** We recommend using a combination of short and tall plants for cover and perches. Be careful what you plant as some species can be vigorous, aggressive, or very large, such as pendulous sedge and gunnera. Think about planting so that there is a range of flowers throughout the year, from marsh-marigold in spring, to hemp-agrimony in autumn.

5. Adaptive gardening for climate change

As our climate continues to change, choosing plants and adjusting the way you garden is crucial to getting the best out of your growing conditions. In this section, we'll give you some ideas for ways that you can adapt your approach for gardening sustainably.

Water butts:

Water butts are a good way of providing water supply using rainwater and will help you keep your thirsty garden thriving during periods of drought. Larger than standard water butts will ensure that you've got enough capacity to see the summer through.

Drought-resistant planting:

Drought-resistant plants can make a real visual impact in your garden and thrive even during hosepipe bans. Here are some of our top tips for choosing drought-resistant plants:

- Take inspiration! Research photos of gardens in hot and dry areas to see what kind of plants are growing together as these will naturally look and work well together. Mediterranean gardens need to be established during springtime but are popular and lush as well as containing plenty of drought-resistant plants.
- Get to know your soil. You'll need to use plants which benefit from your soil's type as well as the aspect within your outdoor space.
- Aim to plant your drought-resistant plants whilst they are small.

Rain planters and sustainable drainage:

Rain planters have lots of benefits – one of these being that they are good for both larger and smaller spaces. They also provide a habitat for wildlife and help to stop flooding by collecting excess rainwater.

You can buy planters which are ready-made, but it can be really rewarding to create your own if you've got the time and are able to get materials. You'll need to line the planter with some sturdy sheeting and a layer of gravel which your horizontal pipework will sit above. You will also need to divert your downpipe (usually this will be the pipe that takes rain from the roof) into the planter.

When it comes to choosing plants for your planter - despite the name - make sure to choose a variety of plants which can survive in different conditions, from drought to floods and hot to cold!

Sustainable drainage (or SuDS) capture water through systems such as ponds and rainwater gardens which slow and reduce the flow of water into drains. This water goes back into the environment and can be used by plants, permeate into the ground, or evaporate into the air. SuDS require careful neighbourhood planning but can be beneficial to wildlife, help to reduce the human impact of flooding and prevent drains from being overwhelmed by large volumes of water.

This toolkit has been created with credit to The Wildlife Trusts.

