

Week 7.

This week: Ponds and a few more pests

Some things to consider about ponds:

1. What are the key considerations when positioning a pond?
2. What are the main design features of the pond?
3. What can it be made from and what are the advantages and disadvantages of each material?
4. What do you know about the process of pond construction?
5. What plants and wildlife would you introduce?

Where should a pond go?

There are a few key considerations when positioning a pond.

First and foremost is safety. If toddlers are going to use your garden think about how you can protect them from the pond's dangers. You might want to surround the pond with a secure fence or hedge, ensuring that you can easily see into the space for appropriate supervision as children mature.

You might also want to plan how they can "go fishing" and learn about the wildlife using the pond. Some people have built raised ponds which are great for "pond dipping" but very difficult to fall into, or you can use a solid plastic mesh, these are strong enough to take the weight of an adult and make ponds extremely safe (images on last page).

The position of both trees and shrubs needs consideration. If too many leaves fall into the pond in autumn, the biodegrading organisms in the water quickly get to work and remove too much oxygen from the water. Other wildlife finds it difficult to survive. However, some evergreen shrubs or trees, overhanging the pond, may provide shelter for creatures entering or leaving the pond.

A key consideration will be the water supply for the pond. There may be some natural drainage that can be modified to fill a pond. However, you may need permission from local water or river authorities if you are making a large scale alteration to a local feature.

A good source of pond water is the roof of the house or the garden buildings. Water can be collected in barrels and manually siphoned into the pond with a garden hose when needed or, it can be piped or pumped when it rains.

What should it look like?

Informal ponds are usually most appropriate for wildlife areas. The pond needs at least one sloping bank to make it easy for hedgehogs etc. to climb in and out. It also needs a shallow area for birds to perch in and bathe.

The pond should have a variety of horizontal shelves on the side. These can be planted with plants that prefer different environments. You might like to incorporate an overspill boggy area where surplus pond water can drain to create another important wildlife habitat. The pond needs to be about 80 cm. deep to prevent it freezing completely in winter.

What materials should you use?

There is a choice of five materials for lining a pond. However, most people will use one of the flexible liner materials (butyl or PVC).

Butyl

This is quite expensive but probably the most forgiving and durable liner. It comes in a variety of thicknesses and is often guaranteed for 20 years or more, providing your preparation has been thorough. It is easy to contour to a variety of shapes and, as importantly, is easy to modify and adjust.

PVC

This is as flexible as butyl and much less expensive.

If you are careful and can prevent sunlight shining directly on the surface the material can be durable. However, sunlight can cause the material to photo degrade. It will discolour and holes will appear.

Fibreglass

There are some preformed fibreglass ponds available in garden shops. These are expensive, rigid and very durable. They need to be carefully sunk in the ground but there is less scope for adhoc adjustments compared to butyl and PVC.

Concrete

This material was used for garden ponds in pre butyl days. Although it seems both solid and durable, ponds built of concrete were notorious for developing hairline cracks and leaking. An industry evolved selling paints to “water proof” concrete ponds. Flexible materials are easier to work with and, with care, are equally as durable. So unless you’ve inherited one, give this material a miss!

Puddled clay

If there is a good source of local clay this is probably the most eco friendly material. Canals built in the 1800’s were lined with puddle clay and many are still functioning today. The material is clearly flexible and you could probably organise a great children’s party to squash and mould the stuff.

You need to be sure of a consistent water supply to maintain the level of the pond. It is important that the pond does not dry out as the clay may crack and need another puddling treatment.

Making the pond.

The pond needs to be dug out. Plan what happens to the soil that is removed. The top soil might make an excellent raised bed and the sub soil could be used in a low fertility area such as a bank for wild flowers. Very often the soil can be used around the pond. E.g. to raise the height of one side of the pond, on a sloping site. You’ll need to use a spirit level and a plank of wood to check that the top of the excavation is horizontal. Sharp objects such as stones and roots will need to be removed from the surface beneath the pond. If you are using a flexible butyl or plastic liner a layer of sand, old carpet or fibreglass insulation should cover the entire base area to prevent holes occurring.

How big should the liner be?

For a flexible liner you need measure the maximum length and width of the pond. Then, add twice the maximum pond depth to each dimension.

Pond liners can be bought more cheaply from internet suppliers.

Filling the pond.

Filling the pond is a highly satisfying experience if you have carried out your preparation thoroughly.

With a flexible liner lay it across the pond area, allowing the centre to gently sag into the aperture. Hold the edge of the liner in place with some bricks and slowly add water. As the water pushes the liner down into position, control the descent of the liner into position by repositioning the bricks.

Once the liner has sunk to its permanent position you can deal with the surplus liner material at the pond edge. Trim the material leaving at least a 20 centimetre margin. Bury the edge beneath turf or soil. Keep the liner trimmings. It is versatile stuff and can be used as tree ties, bog garden or mini pond liners. If the pond was filled with tap water leave it for a few days so any chlorine can dissipate before planting.

Planting the pond

There are three basic varieties of pond plant.

1. Floating leaved aquatic plants.
2. Submerged oxygenating plants.
3. Marginal bog plants.

All the plants are going to compete for sunlight, mineral nutrients and oxygen.

You will encourage more species to your pond if you create a balanced environment which does not allow a single plant species to dominate.

Most wildlife pond expert say that plants are best grown in containers. This ensures that plants are easy to remove and maintain. It also restricts a plant to its allotted space.

The best growing medium for most aquatic plants is poor quality garden soil which contains very little organic matter. Using the best organic stuff from the vegetable plot will just encourage algal growth.

Remove any dead plant material when planting aquatic plants and cover the surface of the soil with gravel. The latter keeps the soil in place when lowering the container into the water.

Floating leaved aquatic plants

Gradually introduce these to their final position by lowering them one step at a time to the base of the pool.

There are specialist suppliers of water plants. Insist on NATIVE varieties as these are likely to support more wildlife. Water lilies are excellent, with the fringed varieties being best for small ponds. Amphibious bistort, potamogeton, common water crowfoot and frogbit are also recommended.

Submerged oxygenating plants

These are important plants that keep the water clear, support micro organisms and provide food for algae munching water snails.

Native varieties of these plants include curled pondweed, hornwort, water milfoil and water starwort. However, be careful; don't let any one of these species take over. If they do, remove quantities and dump it on the side of the pond for a few hours. This allows wildlife the chance to scramble back in the pond.

Marginal bog plants

Amongst the native marginal plants that are recommended are: Bog bean, flowering rush, brooklime, ragged robin, rosebay willow herb, lesser reed mace, lesser spearwort, marsh marigold, water mint and yellow flag iris. These will all help the developed larvae of dragonfly etc. to leave the pond and provide shelter for toads, frogs etc.

Introducing wildlife

As long as you've linked your garden pond to wildlife corridors most potential species will find it.

You could seed your pond with frog or toad spawn from another local over populated garden pond providing you're sure the spawn is healthy. (There are viral infections in the amphibian world that can be spread, such as Frog Red Leg Virus Disease, so be sensible.)

Don't transfer newts to your pond. Some species are protected by law and must not be taken from the wild. E.g. Great Crested Newt.

You can make life safer for amphibians moving between pond and garden by providing a range of sheltered habitats at the pond edge. Piles of rocks, hardwood logs and overhanging plants all help the creatures.

It is probably best not to introduce fish to the pond, unless it is a very large and balanced environment. Fish will eat the larvae and eggs of many species. Native fish species that will successfully adapt to pond life include roach and tench. The latter are good scavengers and will keep the pond clean by devouring algae and suspended blanket weed.

Other pests: Moths, flies and beetles with bad habits!

There are a set of small creatures that can spoil many of the crops in an organic vegetable plot.

Thankfully, there are a set of defence strategies to combat these pests.

.Carrot fly.

This is a small greenish black fly that is about 6mm long. It is difficult to spot! The larvae of the fly naturally feed on plants such as cow parsley. Sadly we grow vegetables of a similar family. I.e. Parsley, celery, parsnips and carrots. It can damage all these plants but particularly carrots.

The fly lays eggs in the soil near the plants. The eggs hatch and the larvae burrow into the roots of the crop and make it unfit to eat.

Prevention

Carrots have very small seeds and it is difficult to sow them at sensible growing distances. Some plants have to be removed, a process known as thinning. The crushed leaves of the removed plant have a distinctive aroma. It is thought that the carrot fly finds the vegetable by the distinctive smell of the plant. So when thinning it is better to cut the unwanted plants with scissors, collect them in a bag and remove from the site. You could also try sowing thinly but with the germination being slow and erratic this can be frustrating as you wait for them only to find you only have a few.

Barriers

As a small creature, the carrot root fly is not powerful. It can neither fly high nor penetrate firm soils. Vertical barriers around the crop, or fleece laid over the crop are good protection.

As the crop grows you can make it difficult for the grubs to burrow by earthing up the soil around the leaves of the carrot. Firming the soil around the leaves improves the defence.

Companion planting

Sow your spring onions, pickling onions, leeks and garlic alongside the row of carrots to mask the smell of the vulnerable plant.

Traps

During the season if you discover the fly larvae in the crop remove all the plants and put them in the middle of a hot compost heap.

Chafers

These are the larvae of the cockchafer or maybug. They hide in the soil and look like a dirty, fat, half curled, caterpillar. They'll eat the roots of some plants and bore into the potatoes. You'll only find them when you dig or hoe the garden. The best defence is birds. Keep some chickens in a movable run and let them have access to the soil in winter. Alternatively rely on birds like robins finding the creatures when you incorporate compost or manure into the soil.

Cutworms

These look similar to chafers but don't curl in the same way. They are the larvae of the dart or heart moth. They emerge from the soil at night and eat straight through the stem of newly planted cabbages, tomatoes etc. Winter digging, robins, chickens and hedgehogs are the best form of control.

Leatherjacket

These are the larvae of the crane fly or 'Daddy Longlegs.' They are a dark leathery skinned grub, about an inch long. They emerge at night in spring and early summer and damage plants similar to cutworms. You control the pests in the same way too.

Wireworm

This is the larvae of the click beetle. They are light brown, smooth and slender. Very often they are found on soil that was recently covered in grassland. In large numbers they may be a problem for both potato and carrot crops. The development of larvae into beetles takes between 2 and 5 years.

So, if you have them, try a different tactic. Grow mustard as a green manure. Dig it in. The creatures love it, grow quickly and fly off. They'll probably lay their eggs in grassland!

Natural predators for this gang.

There are many natural predators for these garden pests. Those that consume the largest numbers include birds such as the Tit family, Nuthatch, Tree Sparrow, Robin, Pied Wagtail and Spotted Flycatcher. All these birds can be encouraged into the garden either by creating woodland habitats, such as hedges, or by using bird boxes.

Bird Boxes.

Small holed bird boxes will attract tits, nuthatches and tree sparrows. Open fronted boxes will provide the nesting habitat for robins, pied wagtail and spotted flycatcher.

All want to be located where it is difficult for predators to gain access. Apart from cats, grey squirrels, weasels and Great Spotted Woodpeckers can all prey on eggs and young birds.

The box does not want to be exposed to strong wind or sunshine. The box will need cleaning out at the end of the nesting season. You might want to treat the outside with a less toxic wood preservative.

Bats and Bat boxes

These small, secretive mainly nocturnal creatures are an organic gardener's friend. They are believed to eat half their body weight in flying insects each night.

However, woodworm treatment and better maintenance of roofs have impacted on the numbers of bats living alongside humanity. The removal of damaged old hollow trees also reduces the creature's habitat. One way to help encourage bats into your garden is to supply them with purpose made roosting sites called bat boxes. You can find a fun website that describes their construction at:

www.derby.gov.uk/HiRes/Living/EnvironmentalAwareness/35floydsguidetobirdandbatboxmaking.htm

These should be sited on the edge of woodland in a sheltered area. As mammals, the bats need solar energy for body warmth. Facing the boxes in a South East or South West direction warms the boxes without overheating their habitat. Clusters of boxes have been found to be more effective at attracting bats than single installations.