



Advice Sheet

Build a garden pond

Ponds support a greater diversity of life than any other garden habitat, and are one of the best ways to attract a range of wildlife. As well as creatures and plants living in the pond, mammals and birds will come to drink or bathe.



Choosing a Location

When choosing a site for your new pond consider –

- How it relates to other wildlife features in the garden. Some wild creatures are shy and prefer to remain in cover; if the pond is next to long grasses or shrubs this gives them cover. If vegetation links the pond to a hedge or other wildlife corridor so much the better. A nearby log pile will provide hibernation and pupation sites for some pond visitors.
- The amount of sun and shade. A healthy pond needs to be in full sun for as many hours as possible every day. Plenty of sunshine will warm the water and encourage plant growth. Plants with floating leaves will give some shade to pond dwellers. Nearby trees, as well as giving shade, will drop large quantities of leaves in autumn, which can choke a pond. As the leaves decompose they absorb all the available oxygen, killing animals, and dramatically reducing the number of species the pond can support.
- Ease of access, which will make pond maintenance much easier. You may wish to partly edge the pond with paving slabs, so you can easily get close enough to watch tiny pond dwellers. You may also wish to be able to observe the pond from the house.
- Allow for an overflow, ideally into a marshy area / bog garden or a soak away. You don't want excess water draining into a neighbour's garden or onto a public highway.



Designing your Pond

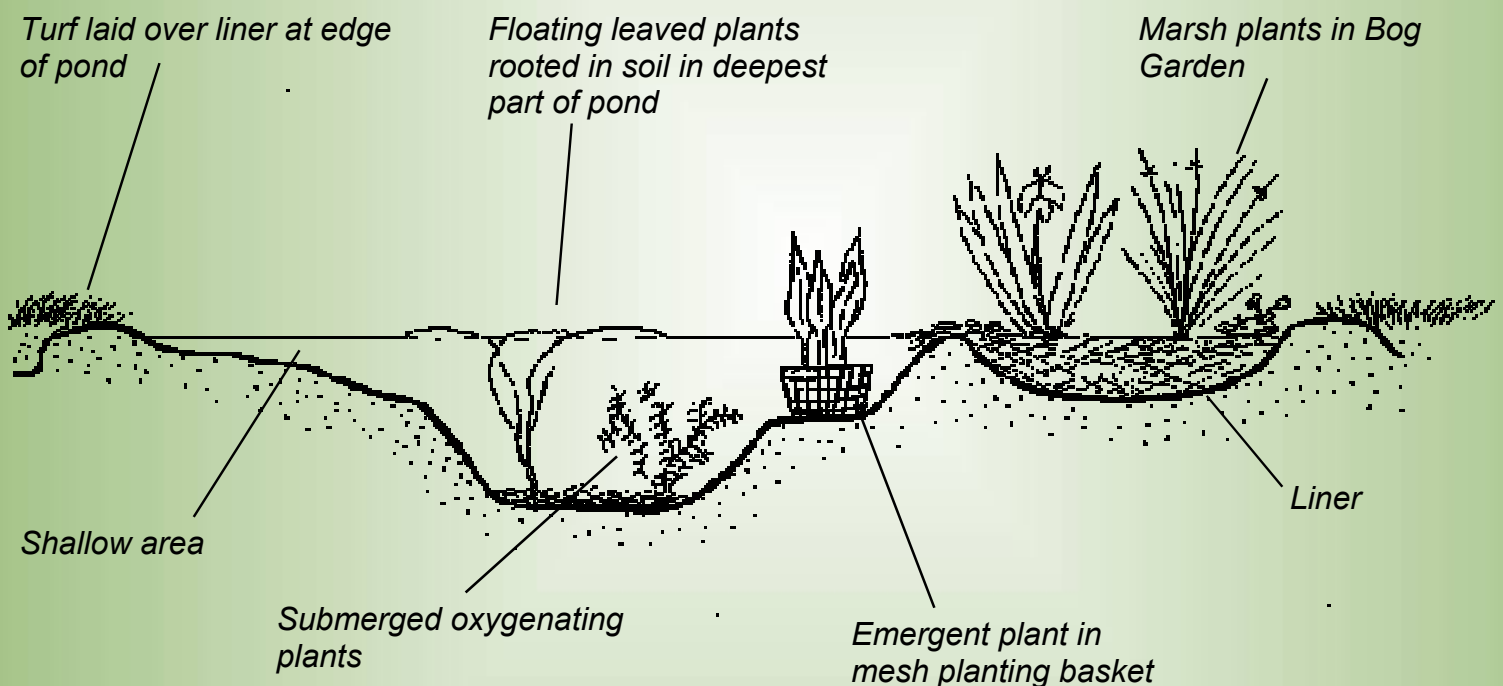
While any pond will be of some benefit, a little thought about design and planting can greatly enhance the value of your pond and your enjoyment of it.

Size, the larger the better, although no pond is too small to be useful. If possible, aim for a minimum of 4-5 square meters surface area. This will allow frog or newts to breed, as well as some dragonfly species.

Shape is not critical, but is probably best kept simple. An informal curved shape looks best for a wildlife pond.

Depth profile is important. The deepest point should be at least 75cm, this will allow hibernating amphibians and invertebrates to survive the coldest winters when the pond is frozen over. There should be a shelf about 20 to 30 cm deep to place emergent plants on. Finally, there should be a gently sloping shallow area; this can be used by bathing birds, and as it will warm up quickly in sunny weather will be occupied by many invertebrates.

A bog garden of wetland plants next to the pond will greatly increase the number of visitors to your pond. Densely planted, it will give cover to amphibians and invertebrates, and provide a new set of habitat niches. Remember, in the wider countryside wetland habitats are just as threatened as ponds.



Choosing a Liner

There are several options for lining a pond.

- Concrete is difficult to use and expensive. Concrete ponds sometimes crack in icy conditions and are difficult to repair.
- Preformed fibreglass ponds are not usually good wildlife ponds as they rarely have very shallow areas. They can be difficult to install as the hole must match the shape of the pond exactly, to ensure all part are adequately supported.
- Puddled clay is a traditional way of building ponds, and is worth considering if you have a heavy clay soil (importing clay is expensive because of the weight). The clay must be laid in a thick layer across the pond, watered well, then trampled on, or “puddled”, until it forms a continuous layer.
- Flexible liners are the most commonly used, as they will adapt to any size and shape. Polythene and PVC are relatively cheap, but they deteriorate when exposed to sunlight and are short-lived. Butyl rubber is more expensive, but it is the strongest and will last 30-50 years.



Building a pond with a flexible liner

Lay out the outline for the pond using canes or a length of hosepipe or rope. Leave it in place for several days to mull over it from all angles and make sure it is exactly where you want it.

Remove the turf, and keep some of it in a shady corner. When the pond is finished turf can be laid over the edges to conceal the liner.

Dig a hole approximately 20 cm deeper than required to allow for sand, matting and liner. Make sure the shallow areas, shelves and deep area are where you want them. Use a spirit level to make sure the edges are level.

When digging out, the top soil is fertile and can be used elsewhere in the garden, perhaps to form a rockery or bank. The sub soil is recognisable as it will be a different colour. It is less fertile, but could be spread on a site for a wildflower meadow (wildflowers flourish on less fertile soils).

Calculate the size of the liner as follows

Length = length of pond + (2 x maximum depth) + 1m edging

Width = width of pond + (2 x maximum depth) + 1m edging

Smooth the surface, removing all stones which might damage the liner.

Spread a layer of sand approximately 5 cm thick all over the hole. This will protect the liner. You may wish to lay special protective matting, which can be bought when you purchase the liner. Alternatively use a piece of old carpet or underlay.

Lay the liner across the hole. Handle it gently and only tread on it with soft-soled shoes or bare feet. Weigh down the edges with bricks or pieces of paving slab.

If you intend to plant directly into mud on the bottom shovel in a thin layer of soil. Use some of the excavated sub soil as top soil is too rich in plant nutrients.

Fill the pond. As the water level rises the weight of the water will pull the liner into the contours of the hole. Adjust the weights around the edge to allow this to happen.

Do not cut off any excess liner until the pond is completely full.

When the pond is full bury the edges of the liner in a trench filled with soil, or cover the edges with turf or paving slabs.



Ponds & Safety

Unless securely fenced off a pond can be dangerous to very young children – a toddler can drown in only 8cm of water. If you have young children, or are planning to start a family, it may be better to start with a bog garden, then add a pond when the children are older. Most children are fascinated by ponds and the life in them.

Newts are often visitors to garden ponds. They need water to breed in, although they spend much of their adult life on land



Planting

Submerged oxygenating plants. These are the least spectacular plants, but vitally important in keeping the water clear, well oxygenated and low in nutrients.

- Water starwort *Callitriche* spp.
- Hornwort *Ceratophyllum demersum*
- Water Milfoil *Myriophyllum spicatum*
- Curly pondweed *Potamogeton crispus*

Plants with floating leaves, rooted in deep water

- White water lily *Nymphaea alba*
- Yellow water lily *Nuphar lutea*
- Broad leaved pond weed *Potamogeton natens*
- Amphibious bistort *Polygonum amphibium*

Emergent plants, for planting in shallow water

- Flowering rush *Botomus umbellatus*
- Bog bean *Menyanthes trifoliata*
- Greater spearwort *Ranunculus lingua*
- Bur reed *Sparganium erectum*
- Water plantain *Alisma plantago-aquatica*
- Yellow flag iris *Iris pseudoacorus*
- Water mint *Mentha aquatica*
- Water forget-me-not *Myosotis scorpioides*
- Marsh marigold *Caltha palustris*
- Brooklime *Veronica beccabunga*
- Lesser spearwort *Ranunculus flammula*
- Water violet *Hottonia palustris*



Luxuriant submerged and emergent vegetation in a well established pond

For more information contact Cheshire Wildlife Trust, Bickley hall Farm, Bickley, Malpas, SY14 8EF
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 Or visit our web site www.wildlifetrust.org.uk/cheshire