

GARDEN PONDS FOR WILDLIFE

Wildlife Advantages

ADJOINING PLANTED AREAS

Provide a link to other habitats. Shelter for birds and amphibians, hedgehogs and voles etc.

MOIST AREA

Allows a wide variety of plants to be grown. These help to attract insects and provide cover for other wildlife.

BEACH AREA

Makes it easier for amphibians, hedgehogs etc. to enter and leave the pond. Birds can drink and bathe in the shallows. An especially rich habitat for microscopic waterlife, with cover in amongst the stones for insect larvae and young frogs.

MARGINAL PLANTS

Provide shelter from excessive wind and sunlight, and cover for wildlife. Waterlife lives in amongst the roots and in the shallows over the baskets. Emerging dragonflies can leave the water by climbing up the stems.

LILIES, LILY-LIKE PLANTS, and FLOATING PLANTS

Provide valuable shade during summer, keeping the water cool and reducing excessive growths of pea soup and thread algae. They also provide a foothold for waterlife and visiting insects

SUBMERGED AQUATICS

Use up excess nutrients in the water, helping to keep the pond healthy and clear. They provide food and shelter for waterlife, and microscopic organisms live on the plant surfaces. They oxygenate the water during daylight hours

DUCKS AND WATERFOWL

Can be very messy and disruptive. They should be actively discouraged (e.g. never feed them). They suit the very largest of ponds and lakes when in moderate numbers.

ADJOINING AREA OF SHRUBS/PLANTING or HEDGEROW

Use low maintenance plants with a layer of chopped bark if weeds are problematic.

Larger logs and stones provide longterm shelter for toads, overwintering newts & insects.

MOIST AREA FOR MOISTURE LOVING PLANTS

Separate moisture areas are much more easy to maintain than in-pool bog areas and reduce the risk of pond-liner puncturing and water loss.

Line an area 35-45cm deep with liner off-cuts, polythene or old plastic sacks. Puncture intact sheets 10cm up from the base to prevent excessive water-logging



A perforated sub-soil water pipe allows efficient watering of plant roots during dry spells

Fill the area with excavated soil enriched with moisture retaining compost and top with chipped bark.

SHALLOW COBBLE BEACH AREA

Provides lots of cover for waterlife. Large areas are high maintenance, but even a tenth of the pool edge in beach form is valuable. The cobbles also protect the liner from sunlight and reduce capillary seepage of water from the pond – a problem with soil edges.

A level beach area gives the most stable support. 10-15cm depth is usually adequate. A small lip on the inside edge can help stop cobbles rolling in. Use rounded cobbles and pebbles of 30mm diameter and larger in a hard material. Avoid soft/crumblly, angular or small chippings

WATERLILIES

FLOATING PLANTS

SUBMERGED AQUATICS

MARGINAL PLANTS

STURDY EDGE FOR ACCESS

This must be able to support people safely

SHELVES AT A VARIETY OF DEPTHS

These provide suitable conditions for a wide range of water plants.

A wide paving slab or overhanging deck is ideal. Bed slabs onto mortar if necessary with 3 parts sand to 1 part cement. (See the notes about concrete overleaf)

FAIRLY STEEP SIDES

A 20° to 40° slope from the vertical in the section below the marginal shelf gives a good volume of water for the given surface area, helping to create balanced conditions with more stable temperatures and less risk of green water. This can also reduce the spread and ease the control of more vigorous marginal plants.

TOUGH POND LINER with protective underlay. See details overleaf

A natural layer of detritus and silt will soon form. Gravel and stonework on the base merely traps dirt and is difficult to clean at any future clearout.

By planting into containers the amount of soil used in the pool is less than where an overall soil layer is used. This reduces pollution from excess nutrients lessening the likelihood of pea soup algae. It also reduces the spread of more vigorous plants and makes maintenance easier. See planting hints overleaf

BASE CLEAR OF SOIL OR GRAVEL. PLANTS IN MESH CONTAINERS.

Shelves should be sufficiently wide, (> 20cm), to support planting containers. The shelves need not extend around all the pond edge.

In small and medium ponds (up to 15 m.sq.) fit a shelf at 20-25cm depth, with a deep area of 50-60cm (ideal for 'medium' sized waterlilies).

In larger ponds, deeper/wider shelves can accommodate bigger planting containers. Shelf depths of: 25-30cm for marginals; 30-45cm for deep marginals, smaller waterlilies & lily-like aquatics; 60-75cm deep for 'large' lilies; Depths over 90cm are less easy to maintain (e.g. in waders) and only necessary in very large ponds and lakes.

Practical Advantages

Construction Hints

WATER PLANTS

• In all but the largest ponds, planting into a layer of soil on the pool base encourages excessive spread. Use mesh type containers which reduce the amount of soil in the pool, reducing excessive levels of nutrients. The containers may assist the control of vigorous native plants.

• Choose fine mesh containers large enough for the chosen plant. Most need something bigger than the temporary containers they are sold in. Tall plants blow over in small containers. Line containers with hessian to retain fines. Plant into subsoil, untreated topsoil, or bagged ‘aquatic’ soil. Dampen, firm and top up. Do not use fertilizers; ‘dilute’ topsoil with rinsed play-pit sand or horticultural grit. A finishing layer of lime-free pea shingle/gravel can help to reduce soil disturbance, especially if fish are present. Soak the containers in a tub of water to expell airpockets before lowering them into the pond.

• Native plants are likely to attract the most species of wildlife. Be careful to avoid the larger growing or more invasive types unless you are able to manage them. Colourful or variegated ornamental varieties can also be included in garden situations, and may extend the season for pollinators. Remember to keep all ornamental plants **in** your garden. Dispose of excess in your compost or green bin - never in the wild. Some rushes, reeds and sedges can puncture pond liners. Plant them in solid sided containers. Divide aquatics in their growing season (late March – September); specialist suppliers hold their widest stocks from May to August. Obtain plants from the wild only with the landowner’s permission. Some plants are protected by law.

• Use sufficient plants for the size of your pond. Select from the full range of submerged; marginal; floating; and lily-like plants to provide habitats for the widest range of wildlife. Plants take time to establish. Lower young waterlilies gradually to their final depth. Position marginals with the appropriate water cover. Specialist suppliers and guidebooks give valuable advice on the varieties/quantities to choose.

MAINTENANCE

• Top up as necessary, ideally using rainwater (downpipe diverter or butt). Tapwater has excess nutrients, plus it needs chlorine removed.

• Expect new ponds to turn green, this is natural. They will start to clear once plants and micro-organisms establish. Avoid algaecides. Remove thread-algae/blanketweed by hand, with a net, or plastic rake.

• Net out excess floating aquatics. In autumn trim plants as they die back and net over the pond to keep out leaves. A few leaves provide useful cover & food for pondlife, but too many can pollute a pond. Melt a hole in persistent ice to allow waste gases out and fresh air in.

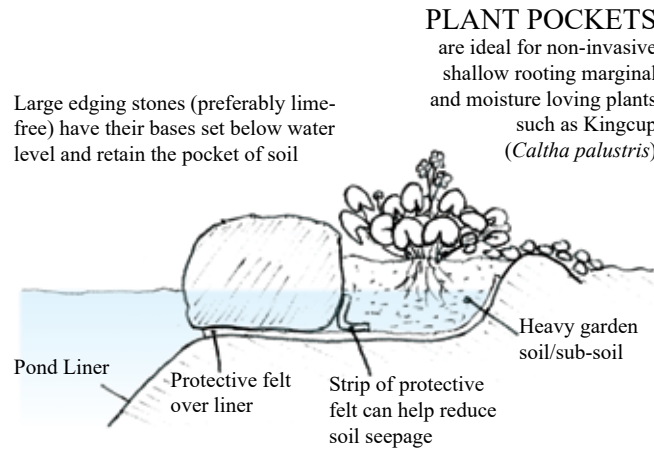
• Clean out the pond only when really necessary; end of summer is a good time. Save as much water and wildlife as possible to return to the cleaned pool. To reduce the need for total cleanouts, trim and divide plants as required; net out excess leaves and submerged aquatics; and carry out partial water changes if the water becomes foul.

FISH

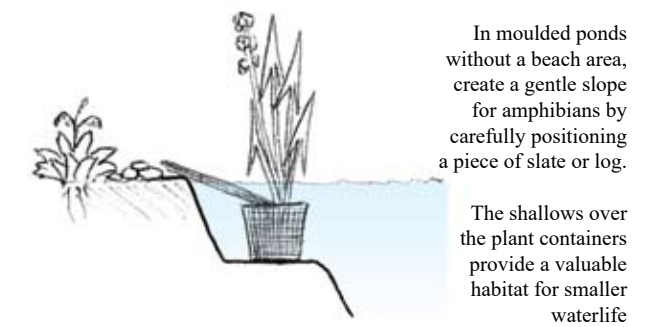
Fish may reduce the abundance of other species in a wildlife pond. If you introduce fish, first give the plants a few months to establish and consider fish-free areas e.g. header ponds. Keep the numbers low. Avoid disruptive types such as carp. In large ponds consider rudd or orfe which stir the base less than goldfish. It may prove difficult to obtain clear water in ponds with many fish unless a filter system is used.

REMEMBER !

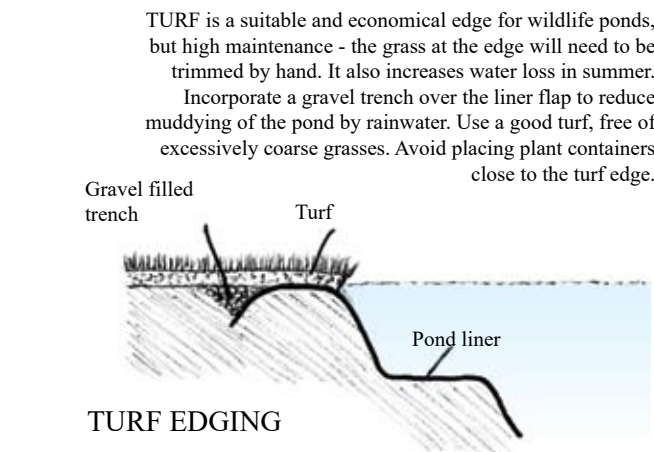
- Young children should always be supervised near open water
- Never release non-native pond-life or plants into the wild



These types of plant pocket are easy to install, especially in the corners of ponds where there is plenty of spare liner. Don’t make them too large; and restrict planting to one or two varieties per pocket.. Check that the liner edge is well supported - if it gets pressed down, it will leak water.



ADAPT PRE-FORMED PONDS



TURF EDGING

WILDLIFE PONDS

SITE AND SITUATION

• Position ponds away from overhanging trees and out of full shade. Falling leaves and blossoms can be a major source of pollution. Water plants grow better if they obtain at least half a day of direct sunshine. Although larger ponds (5 sq. m.+) provide more stable conditions for wildlife, any size of pond has benefits.

• Incorporate the pond in the overall landscape. A pond isolated in the middle of a patio is less accessible and offers less cover to wildlife. Ideally, one or more sides of the pond should back onto well planted areas. Trees, hedges and fences provide cover to birds and shelter to the pond, but these should not be so close as to cut out all sunlight.

• Make the pond visible from a distance or from a window so that you can view wildlife without disturbing it. Most ponds will need occasional topping up. Clean rainwater (filtered if necessary) is ideal for wildlife and low in unwanted nutrients. Tap water (with a conditioner to remove chlorine/chloramines and metals) is second best, as nutrients encourage algae. Consider an electric supply if you want pumps.

CONSTRUCTION WITH POND LINERS

• Pond liners are a convenient material for wildlife pond construction. They are widely available, easy to install, and allow great flexibility in design. The best types include synthetic rubber (e.g. EPDM) which is very flexible, long-lasting, and repairable if punctured; choose a thickness of 0.75 – 1.00mm. Cheaper alternatives include PVC and modified polythenes. Only buy liners specifically intended for pond use, from a reputable source, and with a dependable guarantee.

• When preparing the site every care must be taken to prevent liner damage. It is essential to remove all sharp roots and stones from the excavation. Firm all surfaces and level the edges. Provide a protective layer under the liner using sand or sieved soil if necessary, topped with a good grade of pond ‘geotextile’underlay felt. Follow liner instructions taking care not to overstretch the material, and camouflage the liner edge to hide it and protect it from sunlight and animal damage. See the diagram overleaf or the alternatives shown on the right.

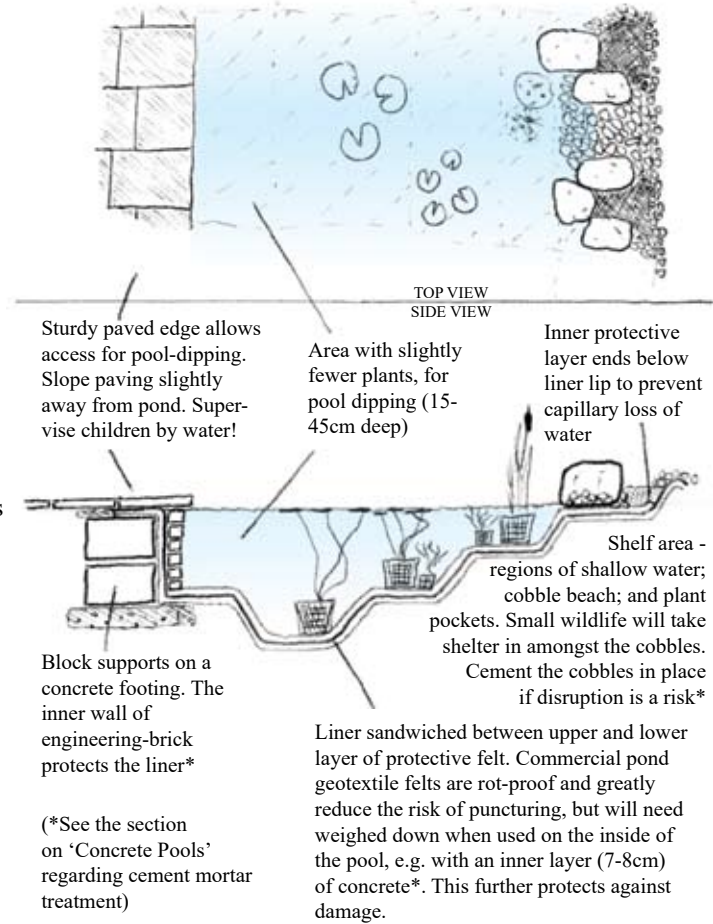
OTHER CONSTRUCTION METHODS

• **Pre-formed ponds** are generally more expensive than liners and often rather too small. They are less prone to puncturing than liners but must be carefully installed to last well. Glassfibre is very tough, and cheaper moulded plastics are available in the smaller sizes. Choose one with a deep area 45cm or more if possible, and ensure that it is set absolutely level. Some types include marginal planting pockets (of rather limited depth), others have shelves.

• **Concrete** is less commonly used. It is less prone to vandalism and can be used in conjunction with liners to overcome possible problems of leaks caused by cracking. When using concrete for the pond, or for mortar-work at the pool edge, use a waterproofing additive (silicate-types also reduce lime seepage). Fill the pool for three weeks or so, drain and brush down the cement/mortar surfaces and rinse to ensure that excess lime and cement debris is washed away. Check the pH of the refilled pond after a week and repeat the drain/rinse if it is very limey (e.g. pH over 8.5); or consider a pond sealant paint (e.g. ‘G4’).

• **Puddled clay**, and bentonite matting, are generally only feasible when used on clay soils, on large ponds with gently sloping sides. Such ponds may need more frequent topping up in summer.

SCHOOL “DIPPING” POND



ALTERNATIVE DESIGNS

The design below is nearest to a natural pond and will encourage good plant growth and rapid colonisation. However it is **not** easy to maintain and is better suited to ponds covering a large area (over 40m²). If built on a small scale these types of pond can become rapidly over-run by stronger growing plants. The design overleaf is a more practical option for all sizes of pond

