



The Ulster Wildlife Trust Guide to the Creation of New Wildlife Ponds



1. Ponds in N. Ireland

There are more than 1,600 ponds and lakes in N. Ireland. They are vitally important for a wide range of wildlife, particularly if they are associated with other habitats such as reedbed, willow/alder woodland or wet grassland. However, despite the fact that ponds and lakes are a common feature of the N. Ireland countryside, they are increasingly under threat -

- Many small ponds have been infilled with soil and rubble to make way for development sites or farmland
- Some ponds and lakes are being polluted by nutrients running off from surrounding intensively farmed land
- Illegal dumping beside ponds can result in toxic chemicals polluting the water
- The natural habitats surrounding some ponds and lakes have been badly damaged or even completely destroyed by intensive agriculture .

With growing public awareness about these issues, more and more people are interested in doing their bit by creating their very own pond. This leaflet has been produced by the Ulster Wildlife Trust in response to the increasing demand for information.

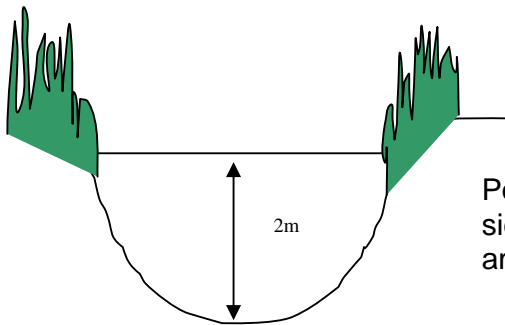
2. Designing your Pond

It is worthwhile spending time thinking about the design and location of your pond. Drawing a simple map of your site and a rough sketch of the pond can be very useful as it enables you to think about all the aspects of your site which may have an impact on the pond. The following are a few guidelines for the design and location of a wildlife pond:

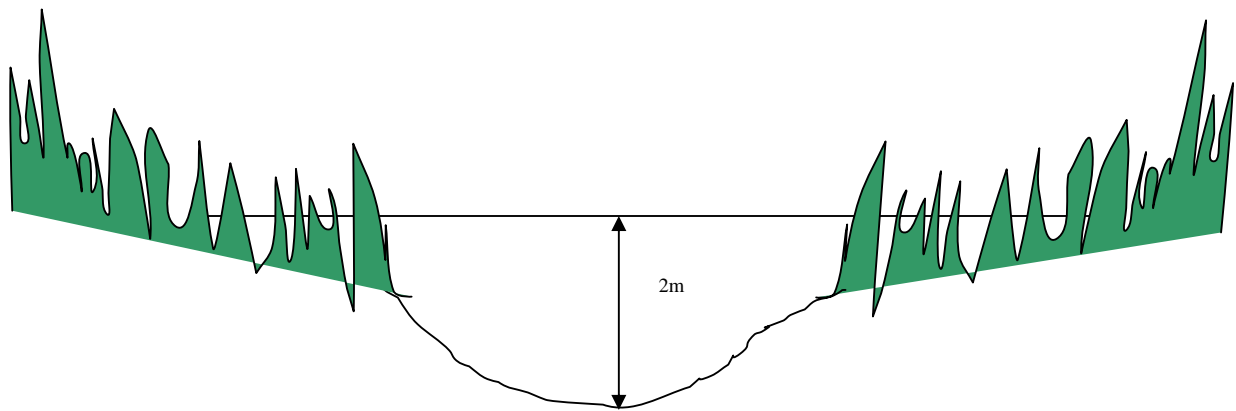
- Do not destroy an existing good wildlife habitat in order to create a pond. If in doubt, contact the Trust for advice.
- Try to make your pond as large as possible - in general, larger ponds support more species than smaller ones.
- Make the shoreline of the pond as irregular as possible to provide secluded, sheltered areas for wildlife.
- Check that the pond edge is the same height the whole way round the pond.
- Do not site the pond in a location where it may be polluted by water running off from intensively farmed land, farmyards, septic tanks etc. The nutrients in the water will upset the delicate balance of the ponds and will cause algal blooms.
- Do not site the pond near existing large trees, or plant them near the pond. In the autumn their leaves will fall into the pond, causing a build up of nutrients and leading to algal blooms. However, willows are naturally associated with wetlands and can be planted near ponds (Grey, Goat, Bay and Purple Willow are all native to N. Ireland). Make sure that you don't plant willows all the way

round the pond. Keep the southern side totally free of trees to allow as much light to reach the pond as possible. This will help attract sun-loving species such as dragonflies.

- Contrary to popular opinion, ponds with steep sides and lots of open water can be very poor wildlife habitats. This is because most animals are vulnerable to attack from predators in open water, making it a very dangerous environment. As a result, most animals prefer the shelter provided by the vegetation which grows in very shallow water around the margins of ponds. Therefore, the best wildlife ponds will have very gently sloping sides, providing extensive areas of very shallow water (just a few centimetres in depth). This enables a wide band of emergent vegetation to become established around the margins of the pond. If the pond is large enough, try to have a deep central area at least 2m deep. This deep area will help prevent emergent vegetation from taking over the pond completely.



Poor pond design - very steeply sloping sides and virtually no shallow water. Small amounts of emergent vegetation.



Good pond design - extensive areas of very shallow water sloping gently down to a deeper area of water. emergent vegetation to provide shelter and food for insects, birds and amphibians

- If your site is on wet ground, you won't need to line the pond and, once dug, it should naturally fill with water. Dig a few test holes and monitor them throughout the summer months to see if they retain water.
- If the site is not naturally wet, you will need to line the pond. One option is to use a flexible pond liner - follow the manufacturers instructions carefully to ensure the flexible liner does not get punctured. Alternatively, the pond can be lined with at least 30cm of moist (not wet) clay, compacted with a roller or the bucket of a hydraulic excavator. Cover the liner or the compacted clay with a layer of soil to allow aquatic plants to become established. Do not use topsoil, as this can be too fertile and can cause algal blooms and excessive growth of grasses around the pond.
- Make sure that you dispose of the excavated spoil from the pond in an environmentally friendly way. One option is to build it into a mound and plant it with trees.
- Try to leave as much long grass around the pond as possible. This acts as a refuge for adult frogs and newts, which actually spend a considerable amount of time on land in long rough grass. They use ponds mainly during the breeding season and sometimes, in the case of frogs, hibernation during the winter. A pile of logs and/or rocks placed near the pond will also provide shelter and hibernation sites for amphibians as well as many insects. Long, rough grass is particularly important if your pond is close to agricultural land as it will act a buffer, preventing fertiliser or farmyard run-off from polluting the pond. Rough grass can be used to link the pond with existing nearby habitats to maximise the benefits to wildlife eg a corridor of rough grassland could link a newly created pond to a nearby stream.



- Islands can act as secure nesting sites for ducks, protecting from predators such as foxes. Islands need to have very shallow sloping sides to attract breeding duck and should be surrounded by extensive areas of very shallow water to provide lots of feeding areas for the ducklings. The island should be as far away from the water's edge as possible - at the very least it should be separated by an area of water 4m wide and 2m deep. Allow the vegetation on the island to develop - nesting duck like the cover provided by rushes and tall rough grasses, but may be put off by shrubs and trees.
- Ideally, allow the pond to fill with rainwater, but if this is not possible, tap water is acceptable.

3. Plants

It is not usually necessary to introduce plants into new ponds - they will be rapidly colonised by plants from neighbouring ponds. However, if you do decide that you want to introduce some plants to your pond, make sure that you only plant species which are native to N. Ireland. Non-native species can be very invasive and some are threatening the survival of our native species. NOTE - It is illegal to take plants from the wild without permission from the landowner and indeed some wild plants are so rare that you need a special licence to uproot them. To obtain aquatic plants, make inquiries in your local neighbourhood to see if anyone is cleaning out their pond, but be aware that you might be unwittingly transferring a problem non-native plant to your pond. Alternatively, you can buy native pond plants from conservation organisations such as Conservation Volunteers, N. Ireland. Avoid buying pond plants from garden centres - they may not be native.

Different species of plant are adapted to different habitats within a pond and can be basically divided into four different groups. Each group fulfils a different function in the pond (oxygenating, providing shelter etc.), so to maximise the wildlife potential of the pond you should include a few species from each group:

Submerged Plants – can be planted by simply tying a few stones to the roots and throwing into the water less than 1m deep, eg
Spiked Water milfoil (*Myriophyllum spicatum*)
Water Crowfoot (*Ranunculus aquatilis*)
Common Water Starwort (*Callitriche stagnalis*)

Floating Plants – can be planted into the soil at the bottom of the pond up to a depth of approx 30cms, eg
Yellow Water-Lily (*Nuphar lutea*)
White Water-Lily (*Nuphar alba*)
Amphibious Bistort (*Polygonum amphibium*)
Pondweed (*Potamogeton* species)

Emergent Plants – should be planted in shallow water, eg

Branched Bur-Reed (*Sparganium erectum*)
Water Plantain (*Alisma plantago-aquatica*)
Marsh Cinquefoil (*Potentilla palustris*)
Bogbean (*Menyanthes trifoliata*)
Marestail (*Hippuris vulgaris*)
Water Horsetail (*Equisetium fluviatile*)
Reedmace or Bulrush (*Typha latifolia* or *Typha augustifolia*)
Common Reed (*Phragmites australis*)

Note: If you plant Reedmace (commonly called Bulrush) or Common Reed in a shallow pond (less than 1.5m deep), you will have to monitor their growth carefully because they can quickly take over a shallow pond.

Marginal Plants – should be planted just above the waters edge eg
Marsh Marigold (*Caltha palustris*)
Meadowsweet (*Filipendula ulmaria*)
Water Mint (*Mentha aquatica*)
Yellow Flag Iris (*Iris pseudacorus*)



Brooklime (*Veronica beccabunga*)
Cuckoo Flower (*Cardamine pratensis*)
Purple Loosestrife (*Lythrum salicaria*)
Ragged Robin (*Lychnis flos-cuculi*)

4. Animals

There is no need to introduce animals into the pond. Once the vegetation has developed, a multitude of wildlife will quickly arrive under their own steam - such as frogs, newts, dragonflies and a host of other insects.

The best way of encouraging wildfowl to use your pond is by providing the correct habitat. A broad band of tall marginal and emergent plants surrounding the pond will provide sheltered nesting sites and will also provide habitat for aquatic insects. This is vital because for the first twelve days of their lives, ducklings feed on aquatic insects. Feeding wildfowl is not recommended as this can lead to greater wildfowl populations than the pond can naturally sustain, resulting in increased levels of nutrients in the pond and algal blooms. A pond is a very finely balanced ecosystem which should be allowed to naturally reach its own equilibrium. Left to its own devices, the pond will not attract more wildfowl than it can naturally support.



Fish are not suitable for small wildlife ponds because they feed on frog and newt spawn and aquatic insects, thereby reducing the overall wildlife value of the pond. In larger ponds, remember that the more fish there are, the less aquatic insects will be available for ducklings - as they both eat the same food.

5. Maintenance

Sometimes newly dug ponds develop algal blooms, until they reach their own natural balance. If you find that you have a problem with algal blooms, it can usually be corrected with the addition of barley straw packed into a netting bag and weighed down with stones. The decomposing barley straw releases toxins which inhibit the growth of algae and is most effective if applied in early spring before the algae starts growing. As a general rule of thumb, 1½ bales of barley straw is enough to keep a 1 acre (0.4ha) pond free from algae for approximately 6 months.

If algae continues to be a problem for more than a few years, you will have to investigate further to find the source of the problem. Algal problems are usually associated with excess nutrients entering a pond - eg fertiliser run-off from adjacent

farmland, sewage or farmyard run-off, duck faeces or decomposing food used to feed fish or duck.

As your pond matures, it will gradually fill in with sediment and marginal vegetation. Left to its own devices, it will become progressively shallower and in hundreds or thousands of years time, it may become completely covered in woodland. This is a totally natural ecological process and is called "succession". It should be noted that an overgrown pond may not necessarily be poorer in wildlife than a "classic" wildlife pond. It simply supports different species of plants and animals, some of which may be rare. However, most people like the appearance of a classic wildlife pond and so your pond will



need to be cleaned out to maintain this appearance. How often this needs to be done depends on various factors, such as the size of the pond and nutrient levels, but as it is a very drastic process it should only be carried out when absolutely necessary. As a very general rule of thumb, a classic wildlife pond should have about $\frac{1}{2}$ open water and $\frac{1}{2}$ marginal vegetation. If over $\frac{3}{4}$ of the pond becomes covered in marginal vegetation, it may be time to clean it out. The best time to do this is September when most animals have completed their lifecycle, but before animals, such as frogs, start to hibernate. Only clear $\frac{1}{2}$ the pond in one go and clear the rest the next year. Leave the collected sediment and vegetation at the side of the pond for at least 24hrs to allow any trapped animals to crawl back in.

6. Enjoy!

Finally, sit back and enjoy the fruits of all your hard work. Ponds not only look attractive, but are also bursting with wildlife and offer a unique opportunity to get a really close look at the wonders of nature!

7. Recommended Reading

- *The Pond Book - a guide to the management and creation of ponds*, by P. Williams, J. Biggs, A. Thorne, S. Bryant, G. Fox, P. Nicolet, 1999. Available from the Ponds Conservation Trust, BMS, Oxford Brookes University, Gipsey Lane, Headington, Oxford, OX3 0BP
- *Farming and Wildlife. A Practical Management Handbook* - by John Andrews and Michael Redbane, 1994 ISBN 0 903138 67 0
- *Wetlands, industry and wildlife* by Anthony Merritt, 1994 ISBN 0 900806 18 4
- *Waterways and wetlands* by the British Trust for Conservation Volunteers, 1997

- *Collins Pocket Guide to Insects of Britain and Western Europe* by Michael Chinery, 1993 ISBN 000 219137-7
- *Frogs and Toads* by Trevor Beebee, 1985 ISBN 0-905483-38-3

8. Further Information

For further information or advice contact:

The Conservation Manager, Ulster Wildlife Trust, 3 New Line, Crossgar, Co. Down,
BT30 9EP. Tel: 028 44830282 E-mail: Info@ulsterwildlifetrust.org



Ulster Wildlife Trust