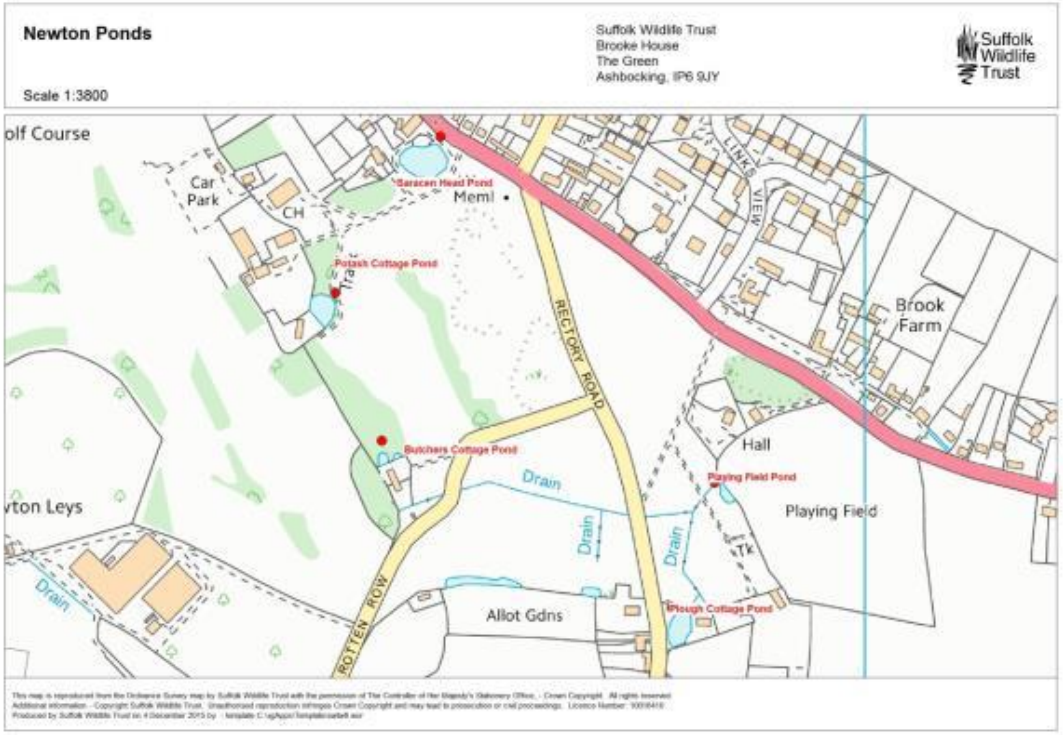
Newton Green Golf Course Pond Management Recommendations

At the request of Mike Oliver, President of the Newton Green Golf Club, Leonie Washington (Wildlife Site Adviser) of Suffolk Wildlife Trust visited 5 fluctuating ponds on 5th & 11th November 2015, situated within the County Wildlife Site with a view to offering management advice for each.



The majority of ponds were found in the main to be in good condition with good connectivity to the surrounding landscape.

The pages that follow detail, observations made and management recommendations for each pond.

Much of the suggested works will require the use of machinery so it would be advisable to seek a quote and opinion from a suitably experienced and qualified pond contractor before works commence.

PLEASE NOTE

Great Crested Newts have previously been recorded close by and so you should work on the basis that they are present when undertaking any work in or around the ponds. A licence is not required for the works but best practice should be followed. (Please see attached information)

Suffolk Wildlife Trust

Saracens Head Pond– TL 91566 40770

This village pond is an ancient livestock-drinking pond situated next to the Saracens Head public house, A134 and village green. It collects run off from the adjacent road and fluctuates seasonally.

The pond and surrounding fringe has a range of vegetation including: yarrow, cow parsley, ribwort plantain, willow, blackthorn, bramble, ivy, travellers joy, dog wood, hawthorn, white dead nettle, New Zealand pygmy weed, soft rush, compact rush, false-fox sedge, common spike rush, jointed rush, reed canary grass, reed mace, common knapweed, rose-bay willow herb, nipplewort, yellow flag iris, dandelion and some ornamental planting by the picnic benches.

The bank is dominated by bramble, willow and nettle and smooth newts were observed sheltering under leaf litter. The margins with tussocks of false-fox sedge, jointed rush, soft rush, reed canary grass and invading reed mace. New Zealand pygmy

weed dominates the drawdown zone and shallows and dense stands of reed mace are concentrated around the remaining open water.

These plants combined with areas of open water and small pools in the drawdown zone provide a good variety of food and cover for insects such as water beetles and dragonflies. However the value of the pond will deteriorate as it continues to dry out and dominant species succeed.

Management issues

Public concern

Negative feedback has been received from local residents regarding the condition and look of the pond. In previous years it is understood that Mr Clarkson, a local pond contractor carried out some restoration works that included creating a steep 2-3 m drop off to the water level. Combined with low water levels this makes the pond difficult to view from a distance. This of course detracts from peoples landscape perspective but not the actual wildlife value of the pond.

Predatory fish

During a visit carried out by Juliet Hawkins in September 2009 at the request of Tim Cooper (Village Green Trust) it was confirmed that carp had been introduced to the pond from a pond loosing water on the main golf course. Sadly, fish will have a detrimental impact on aquatic vegetation, invertebrate's and amphibian populations.

As previously reported by Juliet Hawkins most fish, even if omnivorous, are also predatory eating insect larvae, worms, crustacean, molluscs, other fish, and the eggs and larvae of amphibians. Invertebrate-feeding fish, which include carp, can deplete insect populations, such as dragonflies and daphnia that feed on algae, and lead to an increase in algae.

Several fish species can effectively kill off plant and animal communities by their feeding behaviour rather than by actually preying on the insects and amphibians directly. Carp, tench and bream, sift and stir the bottom of the pond and cause turbidity which inhibits aquatic plant growth and destabilises the pond substrate to the point where the behaviour can completely eliminate aquatic plant growth. Once these macrophytes (larger plants) have been removed, so too is food, shelter and breeding habitat for invertebrates, molluscs and amphibians – thus adversely affecting the pond community. Deeper ponds are less likely to regularly dry out and kill off fish populations every few years so once introduced, fish can be very difficult to remove completely.

Invasive plants

Since the last assessment in 2009 the pond appears to be holding less water as invading species such as reed mace and reed canary grass have continued to encroach unchecked.

Reedmace is invasive and will quickly spread in shallow water. If not managed it will eventually completely encroach the remaining water body. To maintain this open water aspect some will need to be removed.

New Zealand Pygmy Weed has unfortunately become well established in the shallow boggy areas. The plant is particularly invasive and non-native. It has formed a dense mat/carpet and will eventually outcompete other vegetation and reduce the ponds benefit to invertebrates and amphibians. Due to its invasive nature, pond hygiene is particularly important to avoid spreading the plant to other ponds; therefore care should be taken not to transport the plant on footwear and tools used to manage the pond. The species can be controlled chemically or mechanically but is impossible to eradicate entirely. (Please see attached information sheet for additional management instructions)

Additionally self-set willow are establishing around the pond margins and within the shelf area. If left, they will grow rapidly and further dry out the pond. They will also deposit large amounts of leaf litter into the water body therefore increasing pond sediments and organic matter and accelerating the likelihood of regular pond clearance.

Management suggestions

To restore the pond to a better condition for wildlife and allay peoples concerns, I would recommend some accumulated organic matter (leaf litter) and reed mace removal, removing fish if still present, willow coppicing, treatment of New Zealand pygmy weed and signage.

Leaf litter and reed mace removal

- As per Juliet Hawkins previous report I would recommend the following: In the autumn, from the car park round to the young red oak memorial tree, using a

digger machine, 'push in' two thirds of the perimeter bank (as far back as acceptable by Village Green Trust as this clearly takes out some of the mown grass area) and 'pull out/deepen' the central pond (taking care to avoid any clay seal) to create a more gentle gradient. This should not be an immaculate gentle gradient but include some variation in bank topography both terrestrially and that part which will be seasonally underwater.

- At the same time as doing the re-grading work with a digger, remove some invading reed mace – it will soon grow back but this will ensure there is still plenty of open water. Removing accumulated organic matter and reed mace at intervals is necessary to reduce nutrient build up and encroachment. The removed vegetation can be spread on the seasonal shelf where it will subsequently be covered with pond/bank spoil and may temporarily supress the New Zealand pygmy weed. Consider creating an underwater cliff/drop off to reduce the spread of reed mace across the water body but be sure to add deep-water signs for the public.
- The removed leaf litter could be spread thinly on low-lying ground away from the ponds to prevent it from reentering the pond.

Removing fish

- If fish are still present it would be advisable to remove them. Either wait for a drought year and as the pond dries out the fish numbers will decrease or alternatively consider pumping the water out of the pond when it is at its lowest in the autumn and thus remove the fish - before carrying out works with a digger.

Bankside coppicing

- Coppice willow around the banks and pond edge and consider treating stumps to stop them re-growing or be prepared to cut regularly to ensure plenty of sunlight reaches the pond surface, the pond margins and reduce the leaf litter falling annually.
- Retain the occasional large log and return to the pond – submerged, waterlogged wood is very good for egg laying water beetles and other species for cover or leave brash on the bankside to provide shelter for amphibians and invertebrates.
- Every year prune back self-set willow along the perimeter of the water's edge to prevent them becoming large, casting shade and leaf litter. Leave pruning's piled up on the bank as overwintering reptile and newt habitat. Allow the bank to grow rough, with bramble patches and rough grass, which is essential habitat and winter cover for amphibians and reptiles.

Treating New Zealand pygmy weed

- Next summer when water levels are low, treat the dry part of the plant only, with a formulation of glyphosate approved for use in aquatic situations. This will need to be applied by a trained and qualified herbicide sprayer and may need to be repeated each year to keep on top of the spread. (See attached factsheet for further information)

Interpretation

- It would be advisable to communicate your aims to the public so that they better understand what work is being carried out and why. A simple sign onsite and note in a local newsletter can help to alleviate public concerns and also prepare them for the work ahead. Pond restoration can look quite destructive until vegetation recolonizes and without raising awareness may cause concern to local residents.
- It would also be useful at this time to provide information to people that ducks should not be encouraged, nor fish introduced (See further information attached regarding ponds with fluctuating water levels, and the effects of fish and duck in ponds) Additionally an advisory note highlighting the New Zealand pygmy weed and the risk of spreading it from one pond to another would be beneficial.

Potash Pond – TL 91459 40610

The pond is holding water well with emergent and bankside vegetation and a vegetated and muddy drawdown zone.

Few submerged plant species occur within the water body and large amounts of leaf litter have accumulated. In previous years the pond may have received run off from a sceptic tank. This combined with the leaf litter has created a black greasy looking sediment and oily sheen.

Vegetation surrounding the pond consists of mature trees (chestnut, ash and oak) an iris fringe is developing around most of the waters edge but is more prolific along the north eastern edge which is becoming more scrubby with the establishment of tree saplings.

Other vegetation includes: bramble, common nettle, hazel, willow herb, bindweed, broad leaved dock, yellow flag iris, purple loosestrife, soft rush, mullein and some ornamental planting along the western edge bordering the cottage garden.

Management issues

The main issue with this pond is the accumulation of organic matter (leaf litter), the potential encroachment of developing scrub and dense stands of iris on the northeast edges and shading from mature hawthorn scrub on the southern boundary.

To improve the pond I would recommend some removal of accumulated organic matter and the coppicing of scrub along the southern edge to allow light to reach the pond and reduce leaf litter.

In future years the north-eastern edge of the water body may benefit from some reduction of iris as the stand becomes denser and removal of the developing scrub behind it to slow encroachment.

Management suggestions

Leaf litter and iris removal

- In the autumn, from the path adjacent to the eastern edge of the pond using a digger machine, gently remove the accumulated leaf litter from the main water body only, taking care not to damage the pond substrate or remove any soils and gravels.
- The removal of organic matter may improve the general appearance of the water and encourage submerged vegetation to establish. Removed spoil should be left on the bank side for a while to allow any creatures to escape back to the pond before being removed and thinly spread in surrounding low lying areas of scrub where it will not easily be washed back into the pond.

Gently shelving and shallow water around a pond edge is also the most affected by seasonal water levels and is known as the ‘drawdown zone’.

A common misconception about ponds is that water levels should remain stable throughout the year. Occasional drying out and re-hydrating of the pond bed in the drawdown zone is vital to the survival of many flora and fauna.

The drawdown zone can be one of the most important features of a pond as these areas provide a rich habitat for many plants, invertebrates, amphibians, birds and small mammals therefore care should be taken not to impact the drawdown zone.

- In future years consider reducing the dense stand of iris and developing scrub from the north-eastern corner or remove a 'little but often' by hand i.e. hand pull new saplings and individual iris plants.

Developing scrub (Young saplings)

Scrub coppicing

- Coppice hawthorn scrub along the southern edge to ensure plenty of sunlight reaches the pond surface and margins and reduces the leaf litter falling annually. (See scrub management factsheet attached for more information)

Hawthorn scrub

- Retain some brash to create habitat piles that will provide shelter for amphibians and invertebrates.

Butchers Pond – TL 91506 40459

Situated next to 1 Butchers Cottage the pond is holding very little water, is dominated by a dense stand of reed mace and shaded by dense hawthorn scrub on three sides with a steep grassy bank from the garden edge.

Management issues

The pond is heavily shaded from surrounding scrub which without management will eventually revert to closed canopy woodland, large amounts of leaf litter have accumulated within the pond basin and reed mace has encroached the entire water body leaving very little standing water. Without management this pond will quickly dry out and revert to scrub over time or become invasive.

To restore the pond I would recommend rotationally coppicing the surrounding scrub to reduce shading and annual leaf litter and removal of the reed mace stand and accumulated leaf litter

Management suggestions

Reed mace and leaf litter removal

- In the autumn, from the thinner area of scrub/woodland north (rear) of the pond using a digger machine, remove all of the reed mace and associated accumulated leaf litter from within the pond basin taking care not to damage the pond substrate or remove any soils and gravels and allow the pond to re-fill naturally. Removing accumulated organic matter and reed mace at intervals is necessary to reduce nutrient build up and encroachment.
- At the same time, the southern lawned pond edge could be re profiled to create a gentler slope and planting shelf.
- Removed spoil should be left on the bank side for a while to allow any creatures to escape back to the pond before being removed and thinly spread in surrounding low lying areas of scrub where it will not easily be washed back into the pond.

- Where possible leave a bramble fringe to benefit wildlife but also act as a barrier to reduce the amount of annual leaf litter being blown into the pond.

Scrub management

Scrub is an incredibly important habitat in its own right, providing a continued source of nectar, fruit, seeds, shelter, breeding and roosting sites for birds, invertebrates, amphibians and small mammals and should therefore be managed sensitively so that optimal areas of habitat are available at all times.

Eastern tree and scrub edge

Western tree and scrub edge

- The densest areas of scrub are to the eastern and western sides so I would suggest splitting the area into compartments to manage over a period of years starting perhaps with a section of the eastern side to allow sunlight to reach the pond sooner and reduce leaf litter. A large willow on the pond side could also be coppiced or pollarded to increase light and reduce litter.
- Retain some brash to create habitat piles that will provide shelter for amphibians and invertebrates.
- If bramble becomes invasive it can later be managed as scrub but on a shorter rotation. (See attached scrub management factsheet for more information)

Plough Cottage Pond – TL 91802 40288

This linear pond is adjacent to Plough Cottage and linked to a network of ditches. A delightful pond with emergent vegetation such as water mater mint, water forget-me-not, water-dropwort, water-starwort, compact rush, and iris buffered by a verge of ladies bedstraw, sorrel, willow herb, cocks foot, broad leaved dock, bramble, common knapweed and spear thistle to its north and west. Occasional mature specimens of oak, ash and willow occur around the bank margins with some self-set occurring around the pond edge.

A gravelly long slope (old livestock access ramp?) occurs at the northern edge of the pond and is partially vegetated leading to a muddy drawdown zone.

The mix of open water, aquatic and bank side vegetation found here provide ideal habitat for breeding amphibians and invertebrates such as frogs, toads newts, damselflies, dragonflies and water beetles. The tall vegetation and trees found around the pond additionally offer opportunities for birds, small mammals, sheltering amphibians and invertebrates.

Management issues

At present the pond does not present any issues and does not require management only monitoring.

Management suggestions

Future management works could include bankside willow coppicing and oak and ash self-set pulling to reduce annual leaf litter accumulation.

Additionally some iris reduction may be required in future years to maintain the open water aspect and some accumulated organic matter (leaf litter) may need to be removed if organic sediment becomes a problem.

The placing of some habitat piles around or close to the pond, using brash from onsite scrub/tree works would benefit amphibians and invertebrates using the pond by providing shelter close by.

Playing Field Pond – TL 91846 40416

This pond is situated adjacent to the playing field and linked to a network of ditches from its western edge. The pond basin is open and accessible from the west via a gentle vegetated gravel slope leading to silty shallows and then open water. At the time of visiting only the south east corner of the pond contained standing water with a dominant stand of reed mace in its centre.

The shallows and slope leading from the ditch and into the pond were vegetated with water pepper, water forget-me-not, water mint, water crowfoot, water starwort and tussocks of soft rush.

Marginal vegetation included gypsy wort and iris leading to grassy rabbit grazed bank tops of sorrel, dock, cleavers, groundsel, bramble, nettle, dog rose and spear thistle.

Surrounding scrub consisted of elder, blackthorn, hawthorn, holly, birch and ivy with associated self-set.

The mix of open water, aquatic and bank side vegetation found here provide ideal habitat for breeding amphibians and invertebrates such as frogs, toads newts, damselflies, dragonflies and water beetles. The tall vegetation and trees found around the pond additionally offer opportunities for birds, small mammals, sheltering amphibians and invertebrates.

Management issues

The main issues with this pond are the dense stand of reed mace, shading by scrub and accumulated organic matter in the form of leaf litter from the annual leaf fall.

As previously mentioned the drawdown zone can be one of the most important features of a pond and so I suggest that the vegetated slope and shallows be left untouched but recommend that the reed mace and leaf litter be removed from within the main water body and that the south and eastern scrub be managed to reduce shading.

Management suggestions

Leaf litter and reed mace removal

- Removing accumulated organic matter (being careful not to damage clay seals or linings or remove soils and gravels) and reed mace at intervals is necessary to reduce nutrient build up and encroachment. Concentrate only on the leaf litter and reed mace within the main water body. The best time to do this is late autumn through winter with a digger. Leave the gentle slope and drawdown area.
- Removed spoil should be left on the bank side for a while to allow any creatures to escape back to the pond before being removed and thinly spread in surrounding low lying areas of scrub where it will not easily be washed back into the pond.

Scrub coppicing

- Over a number of years coppice scrub along the southern and eastern edge to ensure sunlight reaches the pond surface and margins and to reduce the annual leaf fall.
- Where possible leave a bramble fringe to benefit wildlife and act as a barrier to reduce leaf litter being blown into the pond. If bramble becomes invasive it can later be managed as scrub but on a shorter rotation. (See attached scrub management factsheet for more information)
- Retain some brash to create habitat piles that will provide shelter for amphibians and invertebrates.

Suffolk Wildlife Trust

Great Crested Newt and Pond Restoration Best Practice Advice

Natural England's advice is that *"Pond management includes the restoration of ponds which have become full of silt to such an extent that they no longer provide good habitat for great crested newts. A conservation licence is only required if the work would otherwise be an offence in relation to great crested newts e.g. deliberate killing or injury,* deliberate *disturbance or damage or destruction of a breeding site or resting place.*

Pond management work is designed to improve the breeding site and therefore there is little risk of damage or destruction occurring, as the site will be enhanced. Where the work is carried out with sensible precautions then the risk of deliberate killing, injuring or disturbing newts can be greatly minimised. When the risk of killing, injury or disturbance has been considered and minimised then it is unlikely that an offence will occur, as such actions are unlikely to be considered as deliberate.

Natural England envisages that carefully planned standard pond management works would be highly unlikely to result in offences, and therefore we would not normally expect licence applications.

Pond management work should normally be carried out in late autumn through winter, typically 1st November to 31st January, when great crested newts are unlikely to be present in ponds. The dates are for guidance only as we cannot give specific dates that apply to all situations.

It is also important to consider whether the proposed pond management work will impact upon surrounding terrestrial great crested newt habitat. Large machinery can damage habitat and hibernacula if not carefully planned and the silt removed from pond must not be deposited on areas used by great crested newts." (Pond Management Work and Great Crested Newts, Natural England 2009)

Best practice for great crested newts: The following good practice guidance should maintain or improve the habitat for great crested newt and minimises the risk of harming individuals should they be present or damaging their breeding sites or resting places and thus staying within the law.

- Aim to de-silt with heavy machinery used from a minimum number of access points to minimise disturbance of ground around pond where newts could be hibernating.
- Work should be timed to avoid periods where newts may be present and where the impact of disturbance would be significant. So usually, carry out pond restoration work between autumn (October) before the harsh frosts begin and late winter (February) before the weather warms up, when great crested newt will be hibernating above or below ground.
- Should hibernating great crested newt be found during work, stop work in the particular area, do not try to move the animal and seek advice from Natural

England or Suffolk Wildlife Trust.

- Keep ponds open and sunny with minimum leaf litter build up. If necessary regularly coppice back shading trees and shrubs in winter, leaving some cut logs and brash piles as cover.
- Minimise burn sites and ensure they are not sited over tree roots or other potential hibernation sites.
- Avoid removal of aquatic vegetation and algae as this can remove eggs and larvae.
- Monitor pond restoration. In time, some invasive emergent plants may need regular control here in this shallow pond to prevent their rapid spread throughout shallow water where growth can be so dense that few other plants can grow.
- Avoid encouraging duck on farm ponds by feeding.
- Avoid stocking pond with fish, whatever the species.