POULSHOT THE GREEN/GREEN GARDENS

POND ECOLOGICAL MANAGEMENT PLAN

ACD ENVIRONMENTAL

Ecology
Archaeology
Arboriculture
Landscape Architecture

POULSHOT VILLAGE TRUST

Written By:	Lisa Durrant
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QUALITY ASSURANCE

1.1. The facts stated in this report are true to the best of our knowledge and belief, and any opinions expressed are held genuinely and in accordance with the accepted standards of the profession. ACD Environmental Ltd is a Chartered Institute of Ecology and Environmental Management (CIEEM) Registered Practice.

Client:	Poulshot Village Trust
Site/job:	Poulshot The Green/Green Gardens
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Technical review	Daniel Wood MCIEEM, Ecology Director for ACD Environmental Ltd.

CONTENTS

1 EXECUTIVE SUMMARY

Purpose of report	This document provides Poulshot Village Trust with advice on what actions need to be taken, to restore two of the ponds in Poulshot and their ongoing management whilst avoiding any harm to great crested newts (and other wildlife). It also provides advice on the management of the woodland understorey at Green Gardens. The report should be reviewed in 5 years' time and updated accordingly.
Description of proposed works	The 'Middle Pond' (Pond 1) would benefit from some dredging during November 2022 to create a deeper area and retain at least some water during drought conditions which may become more common. This will need to be done by hand due to underground sewage pipes and the presence of great crested newts. This may help reduce the amount of bulrush *Scirpodes holoschoenus* (as they do not survive in water deeper than 95cm). Prior to this bulrush and New Zealand pygmy weed *Crassula helmsii* removal will also take place and some light management of the overhanding willow tree and bank thistles. 'Green Lane Pond' (Pond 2) would also benefit from a small central area of dredging to create a retained water area and some light management of the inner bank vegetation to reduce shading. An ongoing management schedule will be set out for the rest of the year and subsequent years.
Brief description of the Site	The Project Site comprises two small ponds and a woodland area. The ponds are known as the 'Middle Pond' (Pond 1) and 'Green Lane Pond' (Pond 2), both are located close to an open grass area known as 'the green' in the village of Poulshot, Wiltshire. The woodland area known as 'Green Gardens' is approximately 1.5ha area of mixed broadleaved woodland created in 2003.
Key species	Pond 1 has a number of aquatic plants but bulrushes dominate and choke the pond. Pond 1 also has an infestation of invasive species New Zealand pygmy weed. Various amphibians and newt species have been found in both ponds; however great crested newts *Triturus cristatus* have been found in Pond 1. Both ponds are likely to also support diverse populations of aquatic invertebrates.
Potential impacts	The proposed dredging works and removal of vegetation could potentially harm great crested newts or even reptiles, if carried out without precautions during the breeding/hibernation season. Vegetation removal could also impact on nesting birds.
Reasonable Avoidance Measures	This management plan will avoid harm to great crested newts (and other wildlife) by carrying out reasonable avoidance measures including the following: • Dredging works will be carried out by hand between September and November, outside the great crested newt breeding periods when they will be absent from the pond. Hand tools will be used only. • Bulrushes should be hand pulled in autumn and then cut in early

	spring before flowering. • The New Zealand pygmy weed in Pond 1 should be removed by hand during late summer and autumn and disposed of by composting or burning well away from any aquatic areas. • Any materials removed from the pond will be left in situ on the bank close to the pond for 24 hours to allow invertebrates to disperse. • Bankside thistles will be cut back in the autumn and spring on a rotation so that 50% remain and it is recommended that some bankside vegetation is always retained to discourage dogs from entering the ponds. • The overhanging willow at Pond 1 would benefit from some very light management to reduce the shading on the pond and cuttings should be left at the base of the tree in the form of a log pile/hibernacula to provide additional habitat. Any management of trees/hedgerows will be carried out in November which is outside of the bird breeding season. • If any great crested newts (or reptiles) are found during works, works will stop, and the advice of the project ecologist will be sought. The requirement for a European Protected Species mitigation licence has not been triggered in this case, due to the condition of the ponds, the small scale of the proposed works, the fact that the works will be carried out when great crested newts are unlikely to be present, and the continued ecological functionality of great crested newt breeding habitat. The end result will be a betterment to the existing situation.

2 INTRODUCTION

Site Description

2.1. ACD Environmental Ltd has been commissioned by Poulshot Village Trust to provide ecological advice on the restoration and ongoing management of two ponds within Poulshot Conservation Area, one of which is a known breeding pond for great crested newts. Advice is also required on the management of the understorey of a small area of woodland close by known as 'Green Gardens'.

2.2. The overall objective of the proposed works is to retain at least some pond water during drought conditions and make both ponds more suitable for great crested newts. The proposed ongoing management works will also help to create a habitat mosaic of vegetation and water and to help reduce the amount of New Zealand pygmy weed and bulrush which are currently dominating. The objectives for the woodland are to create a more diverse understorey which is currently dominated by hogweed *Heracleum sphondylium* and cow parsley *Anthriscus sylvestris*.

2.3. The Project Site (Image 1) comprises two small ponds and a small area of woodland (1.5ha in size). All located in the Village of Poulshot in Wiltshire. The OS Grid Reference for the centre of the Pond 1 is ST9694359852 and Pond 2 is ST9688159663.

Image 1: Pond locations and approximate boundary of the woodland shown in red. Map data (2022): Google. Imagery (2022): Getmapping plc.

Competence

2.4. The site walkover survey was carried out by Lisa Durrant. Lisa is a Senior Ecologist at ACD Environmental Ltd. She has 11 years' experience in ecological consultancy and holds Natural England Class Licences for great crested newt *Triturus cristatus*, bats (all species), dormouse *Muscardinus avellanarius*, and barn owl *Tyto alba*. She is a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).

2.5. This report was reviewed by Daniel Wood. Daniel is the Director of Ecology at ACD Environmental Ltd and oversees the work of the Ecology Team. He has 15 years' experience in ecological consultancy and holds Natural England Class Licences for great crested newt *Triturus cristatus*, bats (all species), dormouse *Muscardinus avellanarius*, and barn owl *Tyto alba*. He is a Registered Consultant on the Badger *Meles meles* Class Licence and Bat Mitigation Class Licence. He has a Diploma in Fisheries Management. He has previously worked as an Aquatic Scientist. He has collaborated with the Bristol Avon Rivers Trust (BART) and South East Rivers Trust (SERT) to secure permits from the Environment Agency to carry out river restoration projects. He has carried out published research on Eurasian badger and European otter *Lutra lutra*. He is qualified in MoRPH5 River Condition Survey. He has worked on development projects on gravel pit lakes in the Cotswold Water Park. He has attended planning appeal hearings and has acted as an Expert Witness at public inquiry. He is a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).

Purpose of the document

2.6. The purpose of this document is as follows:

- To confirm the current habitat conditions of both of the ponds and the woodland.
- To outline reasonable avoidance measures to ensure that the proposed pond restoration and management works will avoid harm to great crested newts (a European Protected Species) and other wildlife.
- To put forward recommendations for ongoing management to enhance the ecological value of the ponds and the woodland.

Methodology

2.7. The recommendations in this document have been informed by an ecological walkover survey, which was carried out by Lisa Durrant (ACD Environmental Ltd) on 31st August 2022.

2.8. The ecological survey comprised walking around the perimeter of each of the ponds and within the woodland. Pond/woodland conditions, plant species, and evidence of fauna were all recorded during the survey. Chris Henwood (Poulshot Village Trust Secretary) provided useful information on the history of the ponds/woodland and current management strategies which are in place and the work that the volunteers have been carrying out.

2.9. There were no constraints to the survey. Given the dry conditions, it was possible to fully access the site.

3 DESCRIPTION OF SITE AND HISTORICAL MANAGEMENT

Pond 1

3.1. Pond 1 also known as 'Middle Pond' is located on the village green surrounded by amenity grassland and with a large willow tree *Salix babylonica* overhanging on the western edge.

3.2. The pond was choked with bulrushes and no standing water was visible at the time of the survey. The pond has an infestation of New Zealand Pygmy weed however this was not visible at the time of survey due to the domination of the bulrushes. There were dense thistles, nettles and tall ruderal vegetation around the banks of the pond and the willow tree was overhanging and shading part of the pond (Photograph 1).

3.3. Great crested newts have been found in Pond 1 on many occasions in the past and it is therefore a confirmed breeding pond. There are also a variety of other amphibians and a range of aquatic invertebrate species. In spring 2010 a survey of torching and bottle tapping survey found both male and female great crested newts.

Photograph 1: Pond 1 August 2022

3.4. Past management has involved removal of the bulrushes and pygmy weed by hand in November each year and cutting back the bank vegetation.

3.5. The last fully documented pond clearance was in 2010 during which a team of volunteers removed all of the vegetation from within the pond and cut back the bank vegetation. General vegetation clearance work was also undertaken in 2018. The image below (Photograph 2) shows the pond in March 2019.

Photograph 2: Pond 1 March 2019

Pond 2

3.6. Pond 2 also known as 'Green Lane Pond' is located on the southern edge of Poulshot Green. In August 2022 following a hot summer it had no visible standing water (Photograph 3) and the pond was overgrown with an unmanaged hedgerow on the southern edge and trees/dense tall ruderal vegetation on the northern edge (Photograph 4).

Photograph 3: Pond 2 August 2022

Photograph 4: Pond 2 August 2022

3.7. Tall trees were shading the pond in 2010 and with no emergent vegetation and it was considered as having 'low potential' for supporting great crested newts and therefore surveys were not carried out. Clearance works were also undertaken for this pond in 2010 (Photograph 5).

Photograph 5: Pond 2 clearance works 2010

Green Gardens Woodland

3.8. Green Gardens is approximately 1.5ha area of mixed broadleaved woodland and is located to the north east of the ponds. There is a woodland management plan in place for Green Gardens Woodland[1] and volunteers undergo regular woodland maintenance including some tree surgery and grass pathway cutting. In the past the understorey vegetation has been cut down in late summer early autumn by those that cut the grass. However, recent tree work has established dry hedges and log piles for invertebrates that prevents clearance by machinery. Possibly as a consequence, the understorey has become dominated by cow parsley, hogweed, and goose grass *Galium aparine*. The Trust has started an experiment in the least infested area to remove all the seed heads from the cow parsley and hogweed with the hope that after a few years the understorey becomes more diverse, but it is not known if this is the most appropriate measure (Photograph 6).

Photograph 6: Green Gardens woodland

[1] https://poulshotvt.org/2022/01/28/green-gardens-woodland-management-plan/

4 RECOMMENDATIONS

Pond restoration

4.1. In November 2022 it is recommended that pond restoration works are carried out on both ponds which includes the removal of an area (no more than 10m^2) of silt in the centre of each pond to help prevent it from completely drying out as anticipated summers become hotter. This must be done by hand using hand tools only and silt must be laid out on a plastic membrane for 24 hours to allow invertebrates to disperse. The removal of this silt will hopefully establish a central deep area of water which is retained for most of the year, although shallower areas around the edge of the pond are beneficial so that amphibians can enter and exit the pond and a range of aquatic and marginal vegetation can grow.

4.2. Disposal of excavated silt is always an important consideration. This will only be a small amount, so where practical, silt should be left on the pond bank to dry out so that any pygmy weed dies off. It could be left there long term if practical or removed somewhere to be composted. It is important to ensure that there is no risk of contaminating other watercourses with run-off from wet sediment or invasive plant species. Therefore, silt from the Pond 1 must not be disposed of anywhere close to other watercourses.

Pond 1

4.3. The vegetation within the pond which is predominantly bulrush should be removed in November 2022 by hand and disposed of offsite. New Zealand pygmy weed should also be removed and disposed of well away from any aquatic areas as it is an invasive species and fragments of the plant can be easily transferred.

4.4. The tall herb/ruderal bank vegetation should also be cut down initially in November 2022 to 15cm around the entire perimeter of the pond.

4.5. At least a 2m buffer of long grassland should be left around the periphery of the pond and should be strimmed down to 15cm only twice a year once in November and then the following spring.

4.6. According to the Froglife guidance[2] '*The primary requirements for great crested newt terrestrial habitats are that they should provide (1) permanent areas of refuge habitat for shelter in the more extreme weather conditions (i.e. drought in summer and freezing in winter), (2) daytime refuges, (3) foraging opportunities, and (4) dispersal opportunities. Permanent refuge habitat can be accommodated by ground cover of various kinds. Rough (especially tussocky) grassland, scrub and woodland may be used by newts as a shady refuge from hot, dry conditions.'*

4.7. Therefore, if practical a hibernacula/log pile feature would be of benefit to be created on the bank of the pond.

4.8. The overhanging willow branches should be cut back in November 2022 to allow more light into the pond and also to decrease the amount of leaf litter falling into the pond which creates more silt build up. Branches from the tree limb removal can be used in the hibernacula creation. The tree branches should be checked prior to removal for any potential bat roosting features and if present these branches should be retained. Potential roosting features could include woodpecker holes, splits/cracks from damage or loose bark.

Pond 2

4.9. The pond is relatively shaded so surrounding vegetation should be cut back in November 2022 to 15cm from the interior side of the pond so as to leave some vegetation surrounding the pond for protection. As with Pond 1 a buffer of longer grassland should be left around the periphery which is cut only twice a year to 15cm.

4.10. According to Froglife guidance *'it appears that great crested newts prefer extensively vegetated ponds with a submerged plant cover of about two thirds of the pond and emergent/floating vegetation cover of one quarter to one half of a pond; in other words a well-established, mid-succession pond. Ideally there should be open, less vegetated areas within the pond to allow adult males to display in clear view of females. Ponds that lack shade on the southern margin seem to be preferred.'*

4.11. The Great Crested Newt likes to have plants on which to lay eggs, such as Floating Sweet- grass *Glyceria spp*., Water Mint *Mentha aquatica* and Water Forget-me-not *Myosotis scorpioides* as part of a suit of submerged, floating and emergent leaved plant species. As the pond currently has no aquatic vegetation there should be consideration to planting of some of these species to create a pond more suitable for great crested newt (Image 2).

[2] https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

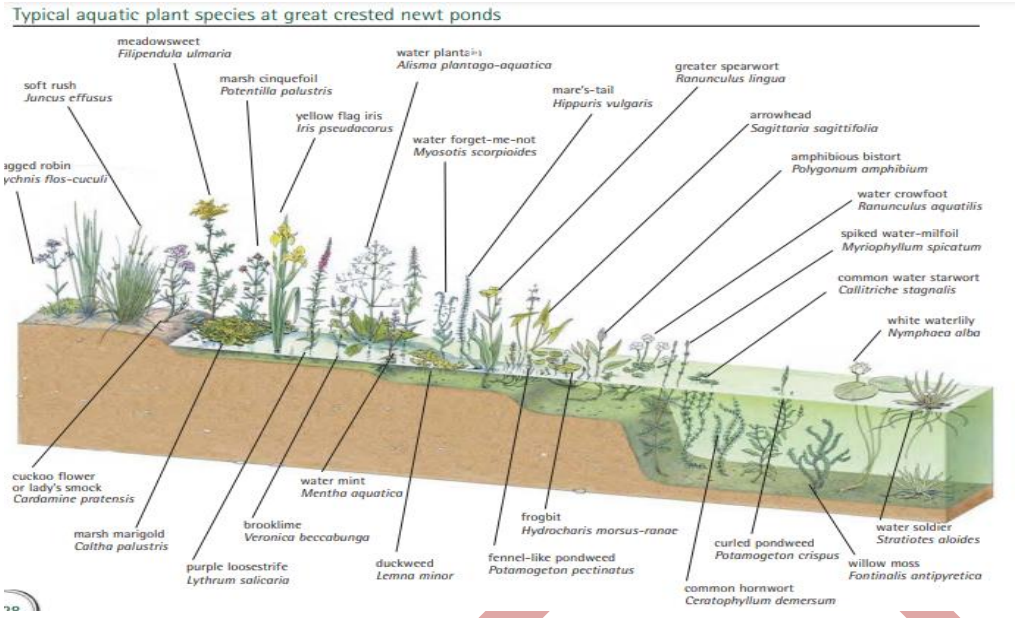

Image 2: Pond planting for great crested newts

Ongoing management

Ponds

4.12. The dredging of Pond 1 should provide a deeper area where bulrushes cannot establish (water levels above 30cm will cause decreased rhizome production and they will not usually survive in water levels over 95cm). However, there may be an ongoing issue with bulrushes and it is recommended that they should be carefully cut to below water level in spring each year before flowering to prevent them developing seed heads and then hand pulled again in the autumn.

4.13. The New Zealand pygmy weed should be hand removed each year preferably late summer/autumn when newts have bred are more developed, the plants should be checked for aquatic life (e.g., newts and invertebrates) and removed to be composted/burnt away from any aquatic areas.

4.14. Work on Pond 2 should always take place before Pond 1 to prevent the spread of New Zealand Pygmy weed and it is recommended that a disinfectant such as Virkon is used on equipment and clothing to prevent the spread of any invasive plants or pathogens between ponds or other watercourses.

4.15. Bank vegetation should be cut back on both ponds in early spring and autumn each year using a strimmer and ensuring that it is not cut below 15cm. Vegetation should be cut in a rotational manor ensuring there is always 50% cover of bank vegetation around each pond at any one time.

4.16. A buffer of at least 2m of longer grassland should be left around each pond (where practical) and this should be strimmed down to 15cm twice a year in early spring and later in autumn.

4.17. Any new planting and hibernacula should be checked twice a year and any damage repaired/replaced.

Woodland understorey

4.18. Cow parsley and hog weed both flower from Spring to mid-summer and then seeds are shed early July to October. Allowing the plants to flower will be of benefit to invertebrates as a source of pollen but to reduce the density of the plants and allow other understorey vegetation to establish the flower heads should be cut before seed spread. Therefore, it is recommended that they are cut at least three times between June and October every year using hand tools only.

5 REASONABLE AVOIDANCE MEASURES

5.1. Any higher risk works will be timed to avoid the great crested newt breeding season where possible (which is generally considered to be March-August) and hibernation season (which is generally considered to be November-February).

5.2. The great crested newt season is dependent upon weather (very cold late springs can delay the active season, and early or late onset of frosts in the autumn will bring forward or delay the hibernation season).

5.3. Attempts to disturb the ponds margins (where newts could be hibernating) must avoid extended periods of cold weather (<6°C air temperature) and attempts to excavate the pond bed or remove aquatic vegetation should avoid the main breeding season, particularly if water is present.

5.4. Likewise, reptiles could be present within vegetation around the pond and tree/hedgerow roots so works will be timed to avoid disturbance to reptiles during the hibernation period and precautionary measures should be taken to avoid harm to reptiles during the active season i.e. using hand tools only and strimming vegetation no lower than 15cm.

5.5. If great crested newts, or reptiles, are encountered during works, they should be able to move to an area of safety of their own accord. If this is not the case (i.e., they are found hibernating), works will stop, and the advice of the project ecologist will be sought.

5.6. Should any tree surgery be required, work should ideally avoid the bird nesting season (generally March-August) or be pre-empted by a bird nesting inspection. Any active birds' nests should be left undisturbed, until chicks have fledged. Trees with cavities with potential bat roosting features (PRFs) should be inspected with an endoscope by a competent and/or licenced person, for evidence of roosting bats, prior to any work or ideally retained in situ and left undisturbed.

5.7. Before any works commence, the volunteers carrying out the excavation works should have knowledge of:

- How to identify great crested newts (and common reptiles)
- What to do should amphibians (or reptiles) be found
- When vegetation should be cut/cleared with hand tools

Photograph 7: Great crested newt view from above

Photograph 8: Great crested newt view from underneath

6 OTHER BIODIVERSITY ENHANCEMENTS

Hibernacula

6.1. Cut vegetation should be used to create log piles/hibernacula around the pond (Image 3).

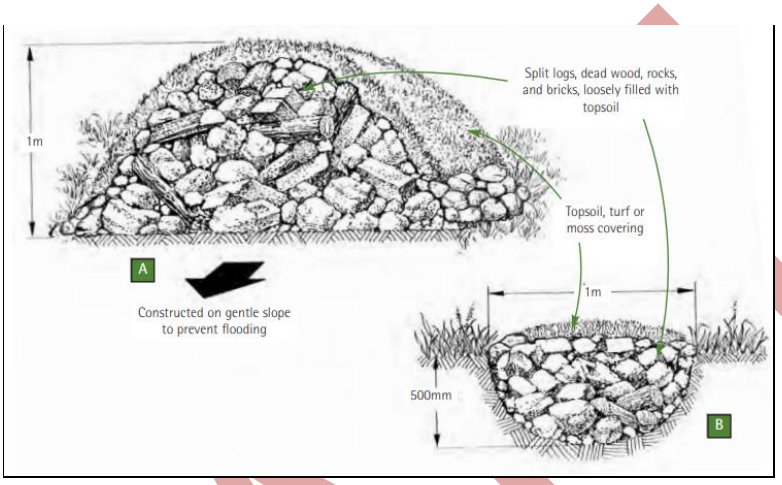

Image 3: How to create hibernacula/refuges for amphibians and reptiles

Bat roosting habitat

6.2. It was discussed during the site walkover that some bat boxes may be of benefit within Green Gardens Woods. They should be installed at least 3 metres high, secured with appropriate fixings by an experienced person, and away from any areas where people could be walking underfoot. Ideally, woodcrete boxes such as Schwegler, Woodstone, or Beaumaris, should be used, because they last significantly longer than timber boxes. The Schwegler 1FF (or a similar design) may be most suitable in this case as they can be checked using a torch without having to remove the front of the bat box and do not require any maintenance as bat droppings fall out (Image 4).

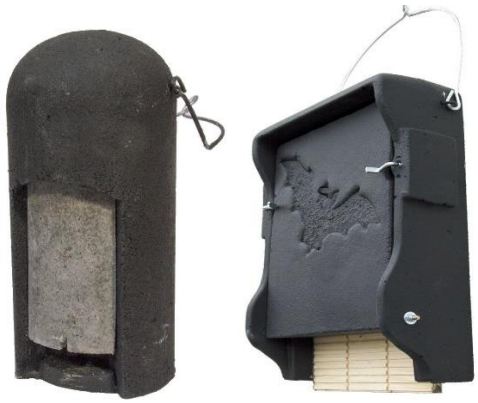

Image 4: Schwegler 2FN bat box (left) and 1FF bat box (right)

7 TIMETABLE OF WORKS

Action	J	F	M	A	M	J	J	A	S	O	N	D
POND RESTORATION WORKS (2022)												
Hand remove the bullrushes and New Zealand pygmy weed from Pond 1												
Digging out an area of silt by hand in Pond 1 and Pond 2 using hand tools (silt and pond vegetation laid out on plastic to allow invertebrate dispersal)												
Branches of overhanging willow tree by Pond 1 cut back and hedgerow/trees trimmed back around interior of Pond 2 (no root removal)												
Tall ruderal bank vegetation (Pond 1) cut down to 15cm, retain 50% of the vegetation at full height												
Creation of log piles/hibernacula using vegetation cuttings												
ONGOING POND MANAGEMENT/MAINTENANCE (2023 onwards)												
Planting of aquatic plants in Pond 2 Spring 2023												
Checks should be carried out later in the year and every subsequent years to see whether plants have established and if replacement are needed												
New Zealand pygmy weed removed by hand from Pond 1												
Bullrushes cut below water level Pond 1 (Spring) and bullrushes hand removed if required (late autumn)												
Tall ruderal bank vegetation Pond 1 cut down to 15cm retain 50% of the vegetation at full height												
Grass buffer of at least 2m retained around each pond and cut only twice a year to 15cm												

GREEN GARDENS WOODLAND ONGOING MANAGEMENT (2023 onwards)												
Cut understorey flower heads three times per year after flowering but prior to seed shed.												
Check bat boxes (can be installed any time of year)												

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