RINGMER PARISH COUNCIL VILLAGE POND

BASELINE CONDITION SURVEY

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Client Name	Ringmer Parish Council
Project Name	Ringmer Village Pond Condition Baseline
Site Address	Delves Close, Ringmer, Lewes, East Sussex, England BN8 5EW
Grid Refrence	TQ 44729 12611
What3Words	dripping.forgets.thickens
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Cover image: Ringmer Village Pond view from south-west bank (July 2025)

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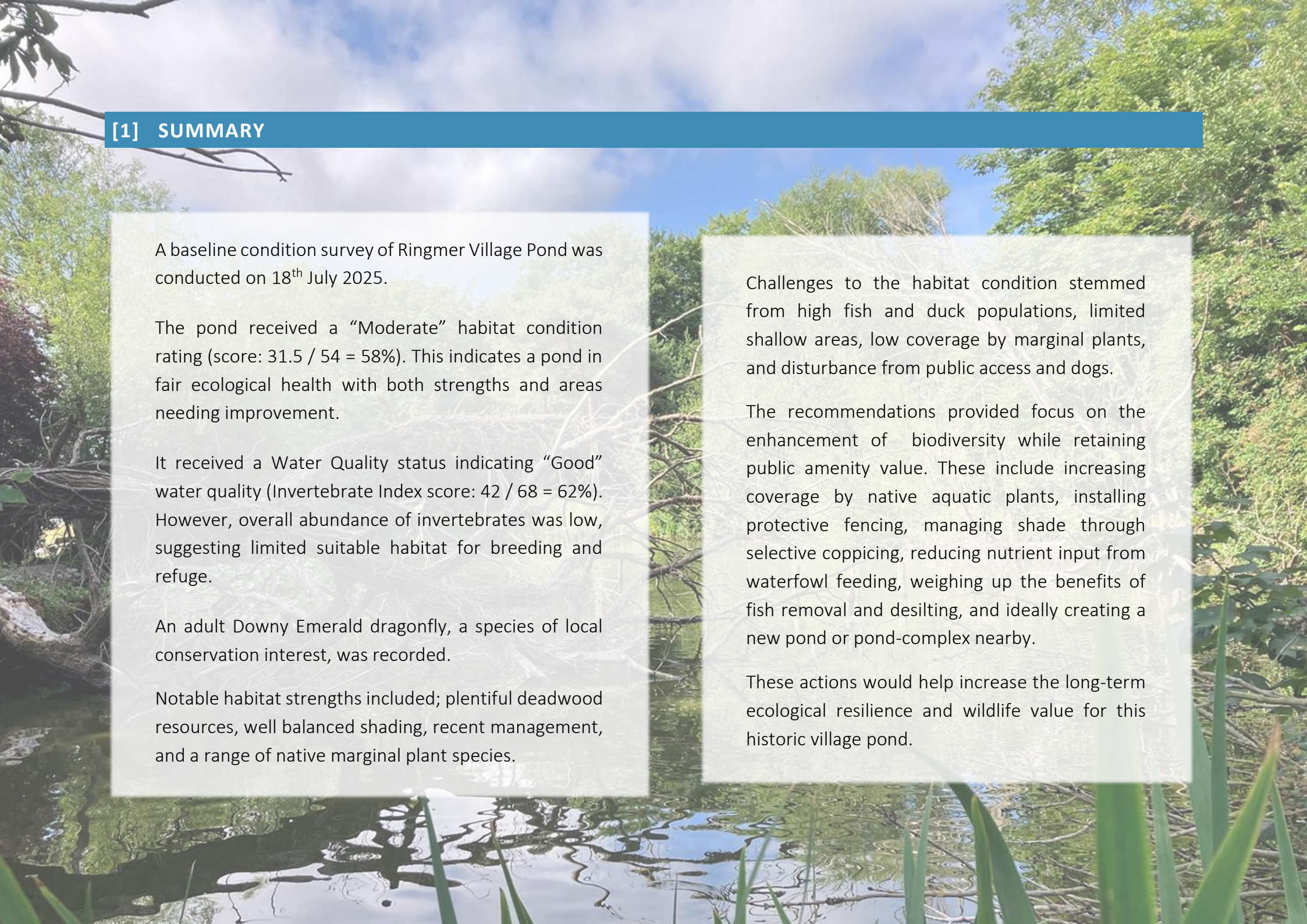

[1] SUMMARY

A baseline condition survey of Ringmer Village Pond was conducted on 18th July 2025.

The pond received a “Moderate” habitat condition rating (score: 31.5 / 54 = 58%). This indicates a pond in fair ecological health with both strengths and areas needing improvement.

It received a Water Quality status indicating “Good” water quality (Invertebrate Index score: 42 / 68 = 62%). However, overall abundance of invertebrates was low, suggesting limited suitable habitat for breeding and refuge.

An adult Downy Emerald dragonfly, a species of local conservation interest, was recorded.

Notable habitat strengths included; plentiful deadwood resources, well balanced shading, recent management, and a range of native marginal plant species.

Challenges to the habitat condition stemmed from high fish and duck populations, limited shallow areas, low coverage by marginal plants, and disturbance from public access and dogs.

The recommendations provided focus on the enhancement of biodiversity while retaining public amenity value. These include increasing coverage by native aquatic plants, installing protective fencing, managing shade through selective coppicing, reducing nutrient input from waterfowl feeding, weighing up the benefits of fish removal and desilting, and ideally creating a new pond or pond-complex nearby.

These actions would help increase the long-term ecological resilience and wildlife value for this historic village pond.

[2] HABITAT MANAGEMENT RECOMMENDATIONS

MANAGEMENT PLAN TABLE

Table 1. Recommendations for habitat enhancements and maintenance regimes for Ringmer Village Pond.

Reference	Action	Timings	Benefits	Risks / Considerations
1	Night-time torchlight survey for amphibians and fish.	Spring (March-May)	As fish can be highly impactful on amphibian numbers, it would be useful to understand the current population levels of both these groups. A torchlight survey is a low-effort way of detecting amphibians which are largely nocturnal. With practice and experience, the different species of newt can be distinguished and recorded to species.	A high-powered torch should be used to maximise visibility in cloudy water conditions. Standard ecology surveys use a 1 million candle power lamp and a 1000m beam. If Great Crested Newts are known to be present then monitoring activities should be carried out by an ecologist with an appropriate licence.
2	Remove invasive shrubs (Bamboo and Portuguese Laurel) and consider re-planting with native flowering and fruiting species such as Hawthorn, Blackthorn, Crab Apple, Rowan, Wild Service.	Autumn / Winter	Non-native invasive shrubs such as those listed often provide little benefit to wildlife, as UK invertebrates are not evolved to feed on them. They can often cause further issues by spreading into natural areas. Planting more native shrubs benefits pollinators and invertebrates which also feed on other parts of the plant.	When removing non-native shrubs, take care to dispose of them considerately to prevent further spread.
3	Introduce native marginal and aquatic species to enhance botanical diversity. Install protective fencing to prevent disturbance by dogs, people and waterfowl during establishment.	Spring or autumn	Increasing the coverage of native aquatic and marginal plants boosts habitat availability for invertebrates and amphibians. Prepare the ground and sow with a native aquatic marginal seed mix and/or locally sourced native potted plants (*suppliers recommended below table). Grazing by ducks and trampling by dogs and people are likely to be challenges to establishment. Focus on creating a few distinct areas around the pond in sunny aspects, and install a temporary plastic mesh / chicken mesh fence to exclude waterfowl. Alternatively a more aesthetically-pleasing and permanent solution could be chestnut paling. This will also help to formalise zones for access by people and dogs.	Ideally, ducks and dogs would not be present in high numbers around a wildlife pond, however it is unlikely they can be completely excluded. Signage around the planted areas will help the public understand the reasons for restricting access. Avoid planting overly dominant species such as Bulrush (*Typha latifolia*) and Reed sweet-grass (*Glyceria maxima*), as these can quickly take over ponds

Reference	Action	Timings	Benefits	Risks / Considerations
4	Continue sensitive coppicing of small stands of trees on north bank to encourage regeneration, never impacting more than 1/4 of the area in a 3 year period. Stack the cut materials in dense habitat piles.	Autumn / Winter (every 3-5 years)	This allows in more light to the water and pond margins, promoting the growth of aquatic plants and other ground flora. It also stimulates new growth of the shrubs, creating structural variation in the habitat. Permanent piles of brash provide cover and additional habitat for amphibians, reptiles and nesting birds. Securing the brash piles with double stakes at each end will help maintain their position and reduce the rate of decomposition.	It is important not to cut back too much of the area in any one year, as this established habitat is already an important feature for the pond. Keep the stacked materials as dense as possible and avoid too many individual piles which would restrict ground flora. Habitat piles are best situated in semi-shaded areas where it is sunny for part of the day, but ideally away from busiest areas which are disturbed by dogs and public.
5	Install signage regarding feeding ducks and a wildlife information board.	Anytime	Information boards placed in areas with high public footfall can be highly effective for communicating the aims of habitat management, fostering understanding and patience. It would be valuable to include signage providing guidance on the appropriate foods for feeding wild ducks. Wildlife interpretation boards can feature images of the flagship species occurring on site and short information on their ecology. Examples are provided in the next section of this report.	Installing signs in wildlife areas will keep people informed, however there may be some risk of vandalism in heavily used public sites. Protective overlay or laminate will ensure signs can be readily cleaned if needed.
6	Build a deadwood habitat feature: hibernaculum or beetle loggery from cut materials.	Anytime	Standing deadwood provides a wide range of micro-habitats for a multitude of organisms. Invertebrates such as beetles, wasps, sawflies and clearwing moths burrow into deadwood. This is turn creates a variety of microclimates and niches for fungi, lichens and bryophytes. Creating an upright loggery allows wood to rot in a similar fashion to a standing dead tree. It may be possible to source larger deadwood from local tree contractors and request transport to site. Create an upright beetle loggery by standing cut logs on their end and partially burying them. Prop up large branches as perch posts at different heights around pond edges to encourage perching Kingfishers and dragonflies.	These features may be at some risk of vandalism, and again are best situated away from areas of the highest footfall.

Reference	Action	Timings	Benefits	Risks / Considerations
7	Consider digging a new pond (or complex of ponds) elsewhere on site	Autumn	A new pond, or ideally several ponds of varied shapes and depths, will provide instantly attracting habitat for aquatic and semi-aquatic wildlife, which can move in surprisingly quickly. It should be situated no more than 200m of the original pond and ideally as close by as possible, to facilitate the dispersal of existing populations of amphibians, wetland plants and invertebrates. Ponds with shallow, graduating edges tend to benefit the widest range of wildlife, even if prone to drying out. It is important that any new wildlife pond is kept free of fish.	Identify a site where a clay-based pond or series of ponds can be installed, which would negate the need for plastic pond liner. Make sure this is away from potential inflows such as ditches or streams, and agricultural or road run-off. Carry out pre-surveys to ensure the site isn't already valuable to wildlife, and carefully check the site for services such as pipes and cables which may be running underground.
8	Consider fish removal from pond through electrofishing and/or seine netting	Autumn/winter	The motion of fish foraging continually stirs up bottom sediments, increasing the release of nutrient and reducing visibility and light to underwater plants. Fish also feed on plants or uproot them to forage for invertebrates. Most ponds are naturally fish-free due to their temporary nature or distance from flowing water bodies, and most pond animals evolved without fish present, therefore are vulnerable to predation pressure. Removing fish from a closed ecosystem can have a dramatically positive effect with vegetation growth, increasing the numbers of amphibians and rapidly colonising with invertebrates.	Fish removal can be an expensive operation. The decision to remove fish might prove unpopular with members of public, who may choose to illegally to restock the pond. Further signage can help with emphasising the reasons for fish removal, but on balance it might not be worthwhile due to the aforementioned reasons.
9	Consider desilting work and the reprofiling of banks to restore the pond to a fully functioning wildlife pond	Early autumn when water level is low (September)	Generally considered a last resort for pond restoration is the dredging or desilting of sediments to help improve the overall water quality of a pond, particularly where there has been pollution or high nutrient build up from fish and waterfowl. Reprofiling the banks will increase the availability of drawdown zone areas, generally considered the richest habitat of a pond.	Consider whether this activity would be worth while in the continued presence of fish and waterfowl. If the decision is made to carry out a pond desilt, it is important that considerations are made for protected species such as Great Crested Newt. Work of this nature should be carefully planned with an experienced ecologist and further advice sought from the Environment Agency.

*Suppliers: EP1 Pond Edge Mixture; Habitat Aid pond plants; Lilies Water Garden

EXAMPLE IMAGES AND DIAGRAMS

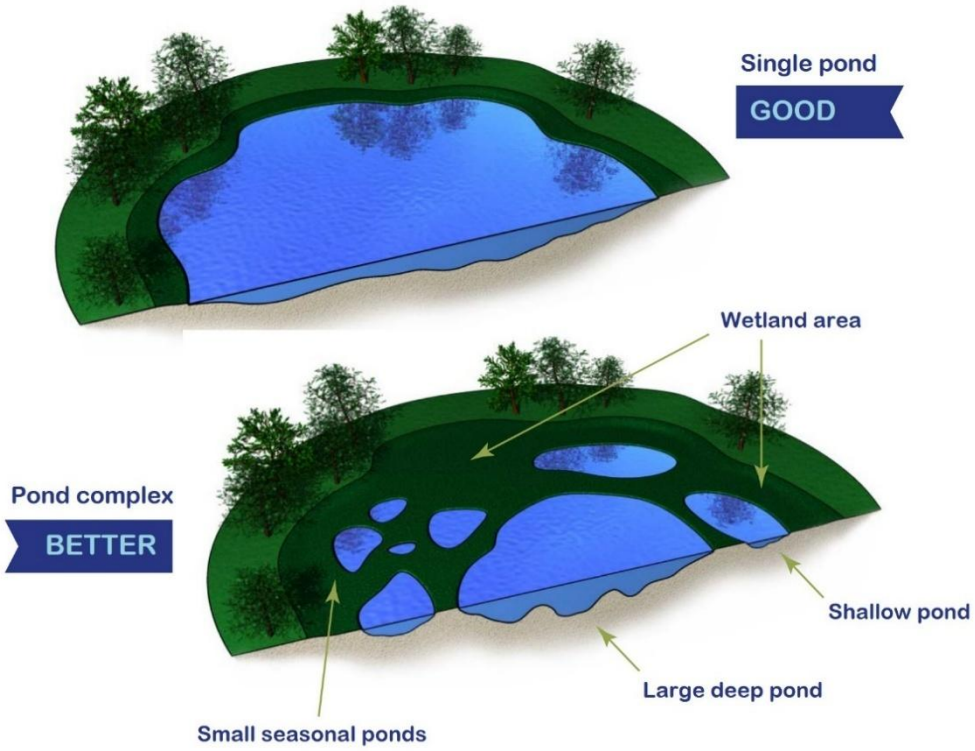

Figure 1. Examples of pond creation styles. Sayer et al, 2023

Figure 2. Wildlife interpretation board at a local nature reserve.

Figure 3. Example of signage around public feeding of waterfowl.

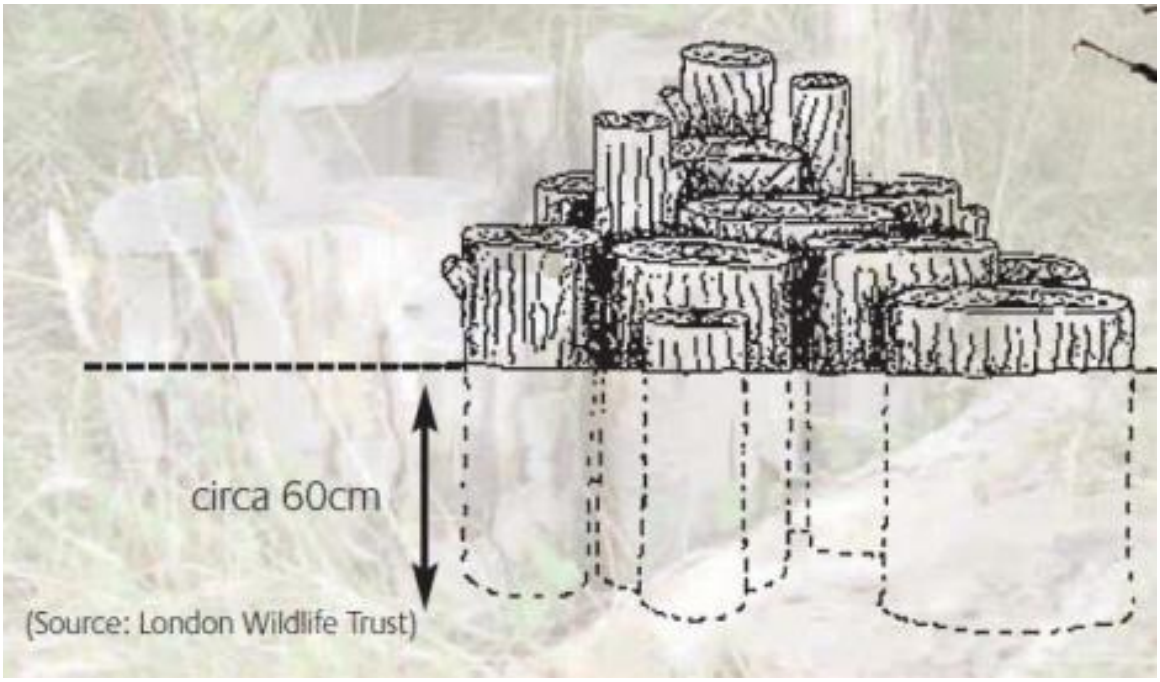

Figure 4. A cross section of an upright log stack. Partially burying deadwood provides further benefits for soil-dwelling invertebrates. © London Wildlife Trust

Figure 5. A cross section of a hibernaculum (an overwintering space for small animals). Aim for minimum dimensions of 2m x 1m x 1m. Partially bury inert materials such as broken bricks, tiles, rubble and deadwood. Mound up the structure and cap off with grassy turf or soil and wildflower seed. © Larry Eifert

[3] INTRODUCTION

UK PONDS

According to the Freshwater Habitats Trust (FHT), ponds are bodies of fresh or occasionally brackish water that range in size from one square metre to two hectares (roughly equivalent to 2.5 football pitches) and retain water for at least four months of the year.

Ponds play a vital role in supporting biodiversity and are an important refuge for native wildlife, supporting around two thirds of all UK freshwater species, many of which are under threat. In addition to aquatic organisms, a wide range of terrestrial species - including insect pollinators, birds, bats, and other mammals - depend on ponds for water, food, and shelter.

Beyond their ecological importance, ponds provide valuable ecosystem services such as flood mitigation, climate change mitigation, and natural water filtration. Newly created ponds are particularly valuable, and their ecological benefits are greatest when they are established close to other ponds. Together, these interconnected waterbodies form a 'pondscape'; a network of ponds with varying characteristics and stages of development that enable wildlife to move and adapt as habitats evolve through natural succession.

RINGMER VILLAGE POND

Ringmer is a village and civil parish in the Lewes District of East Sussex, situated 3 miles (4.8 km) north east of the town of Lewes. The total population of the parish was cited as 4,648 in the 2011 census. The surrounding landscape consists of chalk downland toward the south, and Low Weald landscape to the north with agricultural land divided by ancient hedgerows, former hunting parks and areas of ancient and recently established woodland. Within Ringmer Parish is Plashett Wood, an ancient woodland and Site of Special Scientific Interest (SSSI).

Ringmer Village Pond is located on the north-western edge of the village green (grid reference TQ 44729 12611). The pond covers approximately 900m² and has a perimeter of about 120m. An old estate plan indicates that the pond existed as early as 1704 (pers. comm. Councillor David Duke, July 2025), making it over 300 years old. The next nearest pond in the landscape is located at Delves House, approximately 40 m to the west.

The pond lies within a predominantly urban residential area, with housing to the north and west. The nearest properties are within 12m of the north edge. The immediate area surrounding the pond banks consists of a belt of predominantly native broadleaf trees and

shrubs, interspersed with open lawn areas and patches of compacted ground resulting from public access and regular recreational use.

The pond is easily accessible around most of its perimeter, except along the north-western edge which is dense with shrubs and mature trees. Much of the pond banks are steep sided, and supported by vertical wooden posts and fabric liner. Some terraced sections of the bank are formed by artificial revetments; partially buried sacks of substrate which are visible around the margins. These banks are mostly sparsely vegetated, although a small area of marginal wetland plants is present in the south-west, where a large log purposely placed is providing semi-submerged deadwood habitat. Some parts of the north-eastern edge are covered in dense bramble.

The pond is relatively deep (over 1 m in places where checked close to the banks) and retains water throughout the year. The water is murky and likely high in nutrients. Small carp are known to inhabit the pond, and recreational fishing is popular here among local residents. A large population of mallard ducks also resides here and is regularly fed by the public. There is little visible litter, suggesting that it is being cleared regularly. Recent management has included tree and shrub maintenance along the northern bank, with cut wood left in in stacked habitat piles.

Photo 1 – Steep edges and hard revetment on the south-eastern bank.

SURVEY AIMS AND OBJECTIVES

An ecological survey was commissioned by Ringmer Parish Council to assess the condition of the village pond habitats for wildlife while considering its recreational use. The subsequent report comprises a baseline habitat survey condition assessment.

The objectives are to:

- Identify and assess key ecological features
- Provide recommendations for maintenance and enhancement measures
- Establish an ecological baseline against which future assessments can be compared

This information helps deepen understanding and awareness of wildlife habitats for site managers, thereby driving sensitive habitat maintenance and further enhancement.

SURVEY LIMITATIONS

A single survey visit can only provide a brief snapshot in time of a habitat's condition. Seasonal timing of the survey may influence the outcomes for individual attributes, such as amphibian activity which peaks in spring, and vegetation coverage which generally peaks in late summer, therefore some information can be missed.

The survey is designed to be as rapid and time efficient as possible, and inevitably there will be subjectivity involved around qualitative and quantitative assessments. The species data collected during this survey should be considered a rapid snapshot and not a comprehensive inventory for the site.

No data on Ph levels, conductivity or turbidity were gathered. These measurements are considered to be low priority due to their variation in accuracy and usefulness in woodland ponds.

Although the assessment criteria are based around best practice and ponds in good condition, there is often no exact prescription for the individuals attributes (for example, the amount of shade suitable for a pond might depend on particular species present or the adjacent habitats). Therefore the criteria used within the assessment may only provide broad guidelines for management.

[4] MAPS

Map 1. Aerial map of Ringmer Village with the pond survey area outlined in red. Map contains: © Google Maps (2025)

Map 2. Ringmer Village 1873 – 1875, published in 1878. The pond location is highlighted by the yellow ring. Reproduced with the permission of the National Library of Scotland

Map 3. Aerial map with close-up view of the pond and surrounding habitat. Map contains: © Google Maps (2025)

[5] METHODOLOGY

FIELD SURVEY VISITS

The survey was undertaken by Rachel Bicker, an independent ecologist experienced in a wide range of ecological survey techniques, including all those applied in this assessment. The pond was visited on 18th July 2025, and recognised methodology followed during fine weather conditions (intermittent high cloud cover, temperature: 22°C, wind: south-westerly 4 mph, precipitation: 0%). July was considered an optimum time to visit for the assessment of fluctuating water levels and vegetation cover.

Photo 2 – Long-handled pond net, sorting tray and containers used for the assessment of aquatic invertebrates.

The entire perimeter of the pond was walked (where access was possible) and a general description was made. The assessment criteria relating to pond features and their current condition were systematically evaluated and completed. Two areas of the pond were then selected for the macroinvertebrate sampling stage, targeting a mix of deeper and shallower areas in sunlight, demonstrating good vegetation and microhabitats. The equipment used included a long-handled hand net, conforming to Environment Agency specifications, with a robust frame and fine mesh bag suitable for aquatic invertebrate sampling. Additional equipment comprised a bucket, large white plastic trays, and a fine sieve for further sorting of

samples. A brief search was made for species at the surface such as whirligig beetles and pond skaters, followed by a 30 second netting activity targeting the mesohabitats present such as emergent vegetation, floating vegetation, open water and mud. The sample was then rinsed through, turned out into a tray, and the presence and absence of key macroinvertebrate groups noted before the sample was returned to the pond.

POND HABITAT CONDITION ASSESSMENT CRITERIA

The original attribute scoring system was derived from the Sussex Pond Survey assessment criteria, subsequently adapted by the West Weald Landscape Partnership for their pond condition surveys in West Sussex and South Surrey during 2012-2013. Additional attributes included in this current assessment relate to the Great Crested Newt Habitat Suitability Index and the Biodiversity Metric 3.0: Pond Condition Assessment Criteria.

This assessment is designed to collect data on various key environmental features, including pond area, adjacent land use, presence of any inflow, signs of pollution, invasive plant species, and the presence of amphibians, waterfowl, and other wildlife. The results provide a robust baseline dataset, which can be used to monitor progress in pond enhancement work. A full list of the assessment criteria and further details can be found in Appendix III.

INVERTEBRATE INDEX SCORE

The invertebrate index is a simplified water quality survey, aimed to encourage participation in water science for the general public and acts as a rapid method for in the field working with live samples. It was developed by the Freshwater Habitats Trust (FHT) in 2009 for their national survey, The Big Pond Dip, and is derived from the National Pond Survey and PSYM (Predictive System for Multimetrics) methodologies used by professional biologists to assess the ecological quality of ponds.

The assessment notes the presence and absence of easily identifiable classes of aquatic invertebrate, and places them into three broad categories reflecting their sensitivity to water quality (for example, damselflies and caddisflies generally have a high sensitivity to pollution and score 10, whereas water snails and flatworms low sensitivity and score 1). Using this index, pond water quality can be rated as Excellent, Good, Moderate or Low. The invertebrate index assessment criteria are detailed in Appendix IV.

BIOLOGICAL RECORDS AND DATA SHARING

The iRecord mobile app was used to record species in the field, with a particular focus on marginal wetland plants. The app allows data to be stored offline on the mobile device until an internet connection is available. All species information submitted to the iRecord platform is reviewed by expert verifiers to ensure accuracy and reliability. Each month, the verified records are downloaded and compiled by the Sussex Biodiversity Record Centre, where they are added to their database. This process helps keep species distribution data current and accessible to relevant individuals and organisations.

[6] RESULTS

Table 2. Pond condition assessment scores against individual attributes. Green cells indicate a maximum possible score of 3, yellow cells a mid-score of 1.5 and red zero. Appendix III. contains the survey criteria details.

Attribute assessed	Achieved score	Notes
1. Invertebrate index score	3	A score of 42 indicates good water quality, however overall abundance of invertebrates was low
2. Amphibian species	0	No adults or larvae observed during survey, however the visit was outside of optimal time for observing amphibians
3. Fish species	0	A population of small-sized carp is known to be present
4. Invasive species	1.5	A small stand of Bamboo and a Portuguese Laurel situated at the southern edge
5. % shade at height	3	25% shading
6. % surface cover	1.5	0-25%. Well-established Water Lillies
7. Marginal aquatic species	3	More than 5 emergent botanical species recorded
8. Inflow	3	None observed
9. Livestock use	1.5	None observed
10. Litter/pollution	1.5	Very little around pond edges, some old litter in pond
11. Any shallow area	1.5	Only a few limited areas where deadwood has built up around edges
12. No. of water fowl present	0	Large numbers of ducks (Mallard) regularly fed by public

13. Pond drying	1.5	Deep pond which likely never dries out
14. Deadwood availability on banks	3	Recent tree clearance work on northern side with stacked piles of brash
15. Deadwood availability in water	3	Plentiful fallen deadwood including large logs and mature willow tree still attached at base
16. Disturbance by dogs	1.5	All edges of pond fairly easily accessible to dogs and public except for northern edge which is densely vegetated
17. Evidence of good pond management practice	1.5	Some recent sensitive management of trees and shrubs
18. Habitat connectivity to wider landscape	1.5	Limited (4 other ponds within 1km2)
TOTAL SCORE		**31.5**

Condition Scoring

80 - 100% of max poss score	Good	
50 - 79%	**Moderate**	**58.33%**
0 - 49%	Poor	

A score of 58% indicates a pond condition status of 'Moderate' for Ringmer Village Pond.

INVERTEBRATE INDEX SCORE

Table 3. Invertebrate index (OPAL) score. Each invertebrate group is assigned a value and the presence of either one or more specimens belonging to that group then achieves the value. The maximum attainable score is 68.

Invertebrate group	RVP Score
Dragonfly larvae (10)	10
Damselflies (10)	10
Alderfly larvae (10)	0
Caddisfly larvae (10)	0
Mayfly larvae (5)	5
Water beetles/larvae (5)	5
Water bugs (5)	5
Pond skaters (5)	5
Freshwater shrimps (5)	0
Water snails (1)	0
Water slaters (1)	1
Worm-like animals (1)	1
Total Score	**42**

Classification	Total score
Low water quality	0-17
Moderate water quality	18-34
Good water quality	**35-51**
Excellent water quality	52-68

A score of 42 indicates a status of Good water quality for Ringmer Village Pond.

[7] CONCLUSIONS

Ringmer Village Pond received a “Moderate” condition rating (score: 31.5 / 54 = 58%). This indicates a pond in fair ecological health with both strengths and areas which would benefit from improvement.

Notable strengths included:

- High deadwood availability in and around the pond (providing vital habitat)
- A good balance of shading, beneficial for temperatures and light penetration
- Signs of recent management of shrubs along the north bank
- No inflow detected, reducing risk of pollution
- Five emergent marginal plant species present, including Greater Pond-sedge and Flag Iris
- Little evidence of rubbish / litter

Areas of concern included:

- Populations of fish present (small carp), which contributes to sediment disturbance and reduces invertebrate and amphibian diversity
- High numbers of ducks (Mallards), resulting in over-grazing, nutrient enrichment and algal growth
- Limited shallow areas or “drawdown zone,” reducing invertebrate and amphibian habitat value
- Low abundances of aquatic and marginal wetland plants
- Presence of invasive shrubs (Bamboo and Portuguese Laurel)
- Heavy recreational use and dog disturbance along much of the edge.

The Water Quality Invertebrate Index (score: 42 / 68) resulted in “Good” water quality. However, overall abundance of invertebrates was noted as very low, with only single representations of some groups noted. This is likely due to areas of suitable habitat such as the drawdown zone with marginal vegetation leading into water being very limited, and the majority of the pond having deep water with little cover and protection from predators such as fish.

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[8] DISCUSSION

PONDSCAPES

A diverse range of pond types across the landscape is vital for species-rich aquatic ecosystems. Floodplains, marshes, and interconnected ponds together create a dynamic 'pondscape'. When multiple ponds occur nearby and at different successional stages, they offer habitats for species with varying needs to move, adapt, and thrive. Variation in shading, depth, age, sediment, vegetation, and water permanence further enhances habitat diversity, supporting the widest range of aquatic life

MANAGEMENT AND MAINTENANCE

A diversity of habitat types within an individual pond generally promotes species diversity and abundance. Management regimes may focus on maximising the number of available niches, however before making any drastic changes, it is important to consider the potential for damage to the existing habitats. The pond should be judged depending on its own context, such as how connected or isolated it is, or how long the habitats have remained in a particular state. It may be better to create a new pond rather than completely restore an old one.

Ongoing maintenance of a pond will likely depend on the priorities of site managers, such as maximising benefits to wildlife, visual effects for the public, or recreational activities such as amenity, fishing and dog swims. These elements are not always compatible, as people often prefer views of open water, whereas wildlife mostly thrives within the denser vegetation. Therefore, management suggestions may need to be modified or negotiated to reach a workable compromise.

Attempting to improve the overall score by enhancing specific attributes may require more drastic interventions, and it is important that the pros and cons are carefully weighed up. For example, a large scale fish removal or desilting action of the pond would be costly, and is likely impactful on the species currently occupying these areas. The public may also prefer that fish remain in the pond. Rather than trying to change and invest to much in this amenity pond, an alternative approach might be to create a new wildlife pond (or a series of smaller ponds) in the vicinity, which can be designed in a way to suit the widest suite of species, while being protected from dogs and fish.

SPECIES RECORDS

During the survey a general species list was made with a focus on flowering plants and macroinvertebrates. Six marginal and aquatic species were recorded at low abundances and within a relatively restricted area. These included a hybrid waterlily, Reed Sweet-grass, Flag Iris, Hard Rush, Hemlock Water-dropwort and Greater Pond-sedge. Eight odonata species (dragonflies and damselflies) were recorded in one day, likely representing only a subset of the actual assemblage occurring at the site. A species of note was the Downy Emerald dragonfly, a single adult of which was observed patrolling around the northern edges of the pond. This species has a fairly scattered distribution across Sussex. It is known to favour old ponds with overhanging mature trees, and a build-up of leaf litter on the pond floor, therefore this should be considered in terms of any management interventions. The full species list from the site visit is available in Appendix II.

SURROUNDING TREES AND DEADWOOD

A completely shaded pond is likely to be of lower value to wildlife than one with partial sunlight and tree cover, due to heavy shading restricting plant growth and leaf fall contributing to eutrophication and elevated nutrient levels. However, these tend to be natural characteristics of old woodland ponds with certain species specifically adapted to these conditions. The pond at Ringmer has characteristics of a woodland pond with the advantage of not being over shaded.

Leaves and woody debris are an important substrate for invertebrates at the bottom of a pond, submerged roots and deadwood provide habitat structure and cover within the water column, and rotting deadwood provides egg-laying sites for dragonflies such as Southern Hawker. Mature trees around a pond help to support specialist invertebrate species, such as the Downy Emerald dragonfly which must shelter in the tree canopy soon after emerging. Fallen trees and brash across the banks and surface can provide nest sites for wetland birds such as Moorhen, and perches for flying insects. The pond currently has good examples of a range of deadwood habitats and these should all be retained.

There is value in managing scrub and trees around a pond, as this stimulates new growth and creates a more dynamic habitat. Allowing more light to reach the water and pond margins will promote the growth of aquatic and marginal plants. A sudden change in the extent of shade by removing trees could have adverse effects on species which have been resident for many years. Removing shade may cause vigorous plant species to expand and then suppress less

competitive plants. It is therefore important to proceed carefully with the management of shaded ponds, undertaking only small and localised interventions such as coppicing, adapting the management as needed. Coppicing less than ¼ of the shrubs around the pond over a three to five year period gives time to assess for any adverse impacts.

DRAWDOWN ZONE

Ponds are three-dimensional habitats, with deeper open-water areas typically supporting few invertebrates or amphibians due to limited cover and structural complexity. Steep banks that drop abruptly into deep water offer little value for wildlife. In contrast, shallow marginal zones (less than 10 cm deep) usually support the highest species richness for both plants and invertebrates. The gently sloping 'drawdown zone' provides key microhabitats through its mix of wet and dry patches, variable microclimates, and structural diversity. Bare mud and colonising vegetation are characteristic features, and fluctuating water levels maintain a dynamic system used by different species throughout the year. Creating broad, shallow margins to a pond with undulating surfaces at or near the waterline, provides additional refuge areas for small fauna and extends the functional drawdown zone.

BOTANICAL RICHNESS

Botanical richness along with a diverse structure of emergent, submergent and floating vegetation, plays a key part in biodiverse ponds. Plants provide food and nectar, floating platforms for invertebrate and amphibian egg laying, cover for larvae and shelter for emerging or perching insects. Areas with plentiful vegetation types usually attract the greater diversity of invertebrates due to the variety of niches available. Although several marginal species were noted, few species of native submerged or floating-leaved plants were recorded, therefore introducing more of these species would encourage further diversity and abundance. When adding new aquatic plants, it is essential to use native species of local provenance. These may include Floating Sweet-grass, Brooklime, Water Mint, Lesser Spearwort, Water Plantain, Watercress, Fool's Watercress, pondweeds (*Potamogeton* sp.) White Waterlily, Water Forget-me-not, Marsh Marigold, Purple Loostestrife, Flowering Rush and Marsh Woundwort. Species such as water-milfoils and hornworts are unlikely to survive well in silty ponds.

Avoid planting any of the following non-native invasive species: Canadian Pondweed, Nuttal's Pondweed, Curly Waterweed, Parrot's Feather, Water Fern, New Zealand Pigmyweed and Floating Pennywort. Ideally it is best to avoid overly-dominant large natives such as Bulrush and Reed Sweet-grass..

When planting on the pond banks, do not introduce topsoil as this will result in more nutrient run off into pond. Protective temporary plastic mesh / chicken mesh fence around newly planted areas will help to exclude dogs and wildfowl which would otherwise trample and disturb establishing vegetation. Formalising the bankside areas for dogs and people to access might further reduce pressure on specific zones of the pond.

FISH AND WATERFOWL

Where ducks congregate in large numbers there are impacts on aquatic ecosystems, particularly for closed systems such as ponds. Aquatic plants will often be heavily grazed and certain species can be eliminated entirely. The nutrient load tends to be high due to a constant input of faeces, often leading to algal blooms and general pollution. The motion of both fish foraging and ducks diving within water continually stirs up bottom sediments, increasing the release of nutrient and reducing light to underwater plants. Fish will also feed on plants or uproot them while foraging for invertebrates. The additional pressure of bread and grain will increase nutrient levels, and may create the added issue of attracting Brown Rats. There is no practical way to exclude ducks from a pond, and for a local village pond, it may be most appropriate to give precedence to waterfowl for community enjoyment. An intervention which may help is additional signage explaining the issues around overfeeding waterfowl with bread and suggesting better alternative food items.

DESILTING OR DREDGING

Ponds with high silt levels which haven't previously been known to dry out have become more vulnerable over time to climate change effects, with increased frequency of droughts. To help mitigate this, silt can be dredged using specialist excavators to deepen the water, and relic rubbish removed from the pond. Specialist equipment can also be used to siphon out silt from a full pond. Disposal of silt and dredged materials is expensive, but in some cases may be used as backfill to create marginal ledges and islands.

When considering a large intervention such as pond desilting, it is important to consider factors such as potential harm to surrounding habitats, and the potential for archaeological damage. Draining down ponds is a high-impacting process, differing to a natural drying event which would happen over a gradual time period (the length of summer for example). It is important to consider whether any particular species would be at risk from this activity, and the benefits and risks weighed up. If Great Crested Newt are present then there may well be licensing

implications. It is therefore recommended that a suitably experienced ecologist is engaged prior to any de-silting operation.

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APPENDIX I – PHOTOGRAPHS

Photo 3 – View across the pond from southern bank, with large area of open water and partially submerged fallen tree.

Photo 4 – View from south-western edge, with shallows, deadwood and marginal vegetation providing excellent habitat for aquatic invertebrates.

Photo 5 – Dense growth around northern edge.

Photo 6 – Large raft of hybrid waterlily.

Photo 7 – Mallards utilising partially submerged deadwood as a safe platform.

Photo 8 – Blue-tailed Damselfly *Ischnura elegans* larva.

Photo 9 – Downy emerald *Cordulia aenea* male. © Charles J. Sharp

APPENDIX II – SPECIES LIST

Table 4. Site visit species list, Ringmer Village Pond, 18th July 2025. Please note this is only a rapid assessment and does not consist a comprehensive list.

Taxon group	Common name	Taxon
bird	Blackbird	*Turdus merula*
bird	Blue Tit	*Cyanistes caeruleus*
bird	Collared Dove	*Streptopelia decaocto*
bird	Goldcrest	*Regulus regulus*
bird	Long-tailed Tit	*Aegithalos caudatus*
bird	Magpie	*Pica pica*
bird	Mallard	*Anas platyrhynchos*
bird	Moorhen	*Gallinula chloropus*
bird	Robin	*Erithacus rubecula*
bird	Woodpigeon	*Columba palumbus*
bird	Wren	*Troglodytes troglodytes*
conifer	Scots Pine	*Pinus sylvestris*
conifer	Yew	*Taxus baccata*
flowering plant	Apple	*Malus*
flowering plant	Bamboo	*Bambusa*
flowering plant	Bramble	*Rubus fruticosus agg.*
flowering plant	Broad-leaved Dock	*Rumex obtusifolius*
flowering plant	Elm	*Ulmus* sp.
flowering plant	Great Willowherb	*Epilobium hirsutum*
flowering plant	Greater Pond-sedge	*Carex riparia*
flowering plant	Hard Rush	*Juncus inflexus*
flowering plant	Hazel	*Corylus avellana*
flowering plant	Hemlock Water-dropwort	*Oenanthe crocata*
flowering plant	Horse-chestnut	*Aesculus hippocastanum*

flowering plant	Hybrid Crack-willow	*Salix euxina x alba = S. x fragilis*
flowering plant	Ivy	*Hedera helix*
flowering plant	Portugal Laurel	*Prunus lusitanica*
flowering plant	Reed Sweet-grass	*Glyceria maxima*
flowering plant	Sycamore	*Acer pseudoplatanus*
flowering plant	Willow	*Salix*
flowering plant	Yellow Iris	*Iris pseudacorus*
flowering plant	Hybrid waterlily	*Nymphaea*
insect - butterfly	Gatekeeper	*Pyronia tithonus*
insect - butterfly	Green-veined White	*Pieris napi*
insect - butterfly	Large White	*Pieris brassicae*
insect - dragonfly	Azure Damselfly	*Coenagrion puella*
insect - dragonfly	Beautiful Demoiselle	*Calopteryx virgo*
insect - dragonfly	Blue-tailed Damselfly	*Ischnura elegans*
insect - dragonfly	Common Darter	*Sympetrum striolatum*
insect - dragonfly	Downy Emerald	*Cordulia aenea*
insect - dragonfly	Emperor Dragonfly	*Anax imperator*
insect - dragonfly	Southern Hawker	*Aeshna cyanea*
insect - dragonfly	Willow Emerald Damselfly	*Chalcolestes viridis*

APPENDIX III – POND CONDITION ASSESSMENT CRITERIA

Table 5. Pond condition assessment attributes and scoring criteria derived from the Sussex Pond Survey assessment criteria and the Great Crested Newt Habitat Suitability Index, and the Biodiversity Metric 3.0: Pond Condition Assessment Criteria.

Attribute assessed	Poor (0)	Moderate (1.5)	Good (3)	Notes
1. Invertebrate index score	0-17	18-34	35+	An abundant and diverse invertebrate community is an indicator of good water quality
2. Amphibian species	1	2	2+	Amphibian species can vary in their requirements but are generally indicators of healthy ecosystems
3. Fish species	1+	1	0	Fish are significant predators of invertebrate and amphibians. Small native fish at low densities considered to be ok
4. Invasive species	Dominating	Some establishing	None	Non-native invasive species or some dominating native species adversely affect the diversity of other natives
5. % shade at height	>75%	0-25% - 51-75%	25 - 50%	Some shading by trees is of benefit to ponds but more than 75% is likely to be adverse
6. % surface cover	>75%	0-25 % - 51-75%	25-50%	Over 75% shading by dominant floating vegetation can result in pond eutrophication
7. Marginal aquatic species	<3	3-5	5+	Marginal and emergent vegetation of different types are important for wildlife egg-laying and emergence
8. Inflow	Yes	Historical	None	Ponds with inflow tend to have lower water quality
9. Livestock use	Regular	None	Occasional	Livestock accessing regularly can cause extensive poaching of pond edges and further

				eutrophication. Low levels of poaching however create varied habitat pockets and opportunities for seed germination.
10. Litter/pollution	High levels	Occasional	None	Litter can cause issues for wildlife and lead to water pollution
11. Any shallow area	No	-	Yes	Shallow areas are the most species rich part of a pond, providing a gradient for differing species requirements. They also allow for easier wildlife movement in an out of ponds.
12. No. water fowl present	10+	5-10	<5	Waterfowl graze marginal vegetation and overstocking can have an adervse impact on water quality
13. Pond drying	Annually	Never	Rarely	Ideally dries no more than two years in ten or only in drought, helping to reset ecosystems and preventing dominating predators such as fish
14. Deadwood availability on banks	None	Some	Plentiful	Piles of stacked or buried deadwood provides important habitat niches for invertebrates and ampbihians during their terrestrial phases
15. Deadwood availability in water	None	Some	Plentiful	Submerged and decaying wood underwater is a vital resource to certain algae, fungi and associated invertebrates, as well as providing underwater habitat structure
16. Disturbance by dogs	Daily-weekly	Occasional	Never	Physical disturbance by dogs will churn the sediment in water columns, as well as poaching of ground leading to the loss of marginal vegetation.

				Pollutants maybe be introduced into the water from fouling, and insecticides such as topical flea treatment are known to impact aquatic ecosystems
17. Evidence of good pond management pratice	Never	Historical (every few years)	Recent (within 3 years)	Ponds which are undergoing regular maintenance under a plan are likely to have a variety of habitat niches and be receiving monitoring and protection
18. Habitat connectivity to wider landscape	None or little (isolated) <25%	Some (1 or 2 links)	Plentiful (over 50% connectivity)	Connectivity of ponds leads to higher rates of species dispersal and therefore diversity as well as abundance. It creates resilience within the landscape providing habitat variety and options withn the lifecycles of different species

Condition Scoring

80 - 100% of max poss score	Good
50 - 79%	Moderate
0 - 49%	Poor

Table 6. Taken from Biodiversity Metric 3.0: Auditing and accounting for biodiversity - Technical Supplement Part 1a (2021)

Pond Condition Assessment Criteria	
CORE CRITERIA - applicable to all ponds (woodland[1] and non-woodland):	
1	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.
2	There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.
3	Less than 10% of the pond is covered with duckweed or filamentous algae.
4	The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.
5	Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.
6	There is an absence of non-native plant and animal species[2].
7	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.
ADDITIONAL CRITERIA - only applicable to non-woodland ponds:	
8	In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds)[3], should cover at least 50% of the pond area that is less than 3 m deep.
9	The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.
Condition Assessment Result	**Condition Assessment Score**
If 8 criteria assessed (woodland ponds):	
Passes 7 of 7 criteria	Good (3)
Passes 5 or 6 of 7 criteria	Moderate (2)
Passes 0, 1, 2, 3 or 4 of 7 criteria	Poor (1)
If 10 criteria assessed (non-woodland ponds):	
Passes 9 of 9 criteria	Good (3)
Passes 6, 7 or 8 of 9	Moderate (2)
Passes 0, 1, 2, 3, 4 or 5 of 9 criteria	Poor (1)

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.

Footnote 2 - Any species included on the Water Framework Directive UKTAG GB High Impact Species List should be absent.

• Frequently occurring non-native plant species include water fern *Azolla spp.,* Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides* and Japanese knotweed *Fallopia japonica,* giant hogweed *Heracleum mantegazzianum* (on the bank).
• Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes,* carp *Cyprinus carpio*.

Footnote 3 - If the pond is seasonal (i.e. dries out in most summers) then emergent species alone are likely to be found.

APPENDIX IV – INVERTEBRATE INDEX SCORING

Table 7. Biotic index referencing the presence or absence of invertebrate groups (maximum achievable score of 68) Developed by the Freshwater Habitats Trust for The Big Pond Dip.

Invertebrate group	Water quality index
Cased caddisfly larvae	10
Dragonfly larvae	10
Alderfly larvae	10
Caseless caddisfly larvae	10
Mayfly larvae	5
Water beetles and/or larvae	5
Water bugs	5
Pond skaters	5
Freshwater shrimps	5
Water snails	1
Water slaters	1
Worm-like animals	1
Total possible score	**68**

Classification	Total score
Low water quality	0-17
Moderate water quality	18-34
Good water quality	35-51
Excellent water quality	52-68