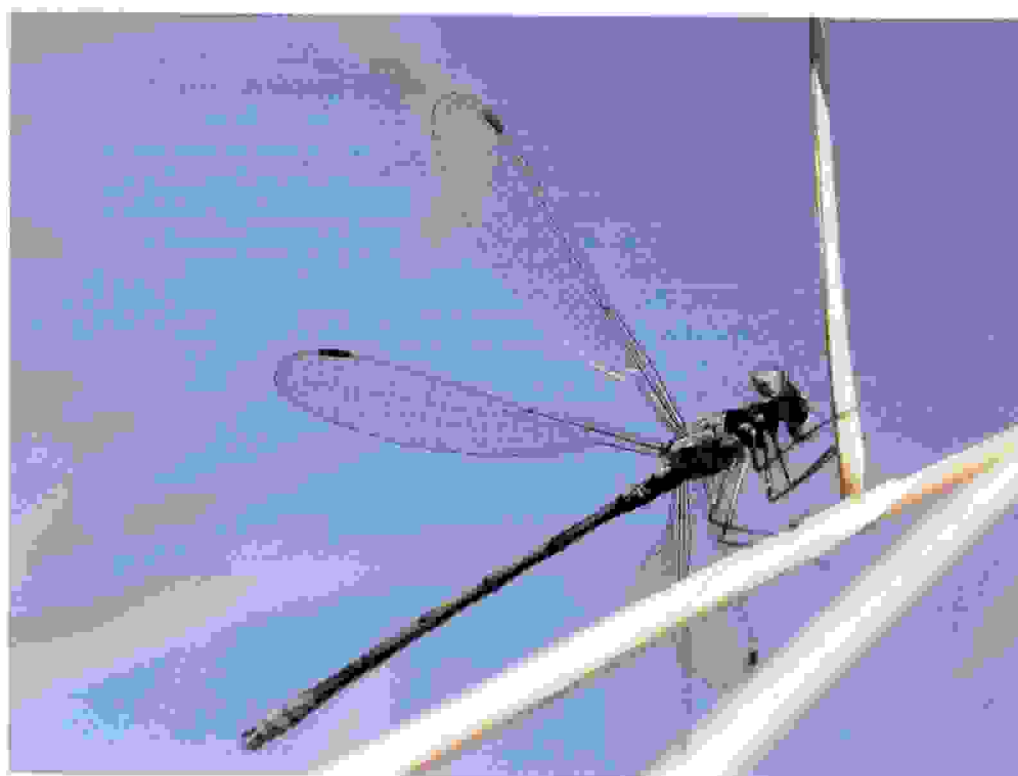


Brookfield (C.P.A.) Pond, Whaley Bridge



March 2006
Ecological Assessment
and
Management Recommendations

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1.0 Introduction

Brookfield Pond was surveyed to evaluate the site's current nature conservation value and to make recommendations for future management of the site.

The wildlife value of Brookfield Pond has long been recognised; the site was designated as a County Wildlife Site (non-statutory nature conservation designation) in 1992 and a management plan was prepared for High Peak Borough Council by Derbyshire Wildlife Trust in 1995. This document should be read in conjunction with the 1995 management plan.

2.0 Site description

Summary Site Details	
Site Name	Brookfield (C.P.A.) Pond
Parish & District	Whaley Bridge, High Peak
Grid Reference	SK008812
Size	The whole site is approximately 0.5ha, of which the pond itself takes up approximately 0.2ha.
Survey Date	11 th August 2005
Surveyor	Philip Precey, Water for Wildlife Officer, Derbyshire Wildlife Trust



O.S. Grid Ref: SK008812



Brookfield Pond is situated on the west side of Whaley Bridge, just to the north of Reservoir Road, close to Todbrook Reservoir, in the Borough of High Peak, Derbyshire. The site lies on inter-glacial lake deposits overlying Red Ash coal deposits.

The site consists of a single small mill pond with relatively steep banks, surrounded by an area of semi-mature woodland.

Brookfield Pond was built between 1853 and 1858 to provide a supply of clean water for the Bingswood Print Works, on the eastern side of Whaley Bridge. It was created through the construction of the embankment on the southern side, against the natural slope of the land to the north. The Works was mainly involved in the printing and dyeing of fabric. The name of the Works also provides the third alternative name for the pond, Bingswood, even though the two sites are a third of a mile apart. It changed hands in 1967 and became the property of the Whaley Bridge UDC, passing to High Peak Borough Council in 1974 with the changes in local government.

It is bounded to the south by Reservoir Road, to the north by the grounds of Whaley Hall and to the east and south east by land belonging to Brookfield House. The latter was built by the same company which built the pond, and was formerly owned and used by the local council: the house is currently privately owned.

The site has developed over the last 150 years into an area which, although obviously man-made, has a diversity of habitats and a reasonable range of plants and animals for a site of this size. The pond is a Local Nature Reserve and is listed on the county Wildlife Sites register (under the name C.P.A. Pond, HP160).

The site is used by local people for casual recreation, including fishing: there are two formal fishing pegs on the southern side of the pond.

The only aquatic plant species present are Broad-leaved Pondweed and Canadian Pondweed, both of which are abundant within the pond, and a small amount of Ivy-leaved Duckweed, Common Duckweed and a water starwort. There is a small area of marginal vegetation at the eastern end of the pond, dominated by Common Bulrush, with some

Yellow Flag. Seven Mallards and a pair of Moorhen were present on the pond at the time of survey.

The entire northern bank of the pond is heavily shaded by trees and scrub overhanging the pond margins, while the southern bank is also shaded by the surrounding woodland. This shading extending to cover at least 40% of the pond.

The pond is surrounded by semi-mature mixed woodland, which is fairly recent in origin, being derived from landscaping planting around the same time as the construction of the pond itself. The woodland is largely composed of broad-leaved species such as Pedunculate Oak, Sycamore, Ash, Beech and Horse Chestnut, but also includes a high proportion of ornamental non-native species, including several conifers. The understorey is a mixture of native species, including Bramble, Hawthorn, Elder and Holly, and ornamental species including Rhododendron and Laurel. The field layer is made up of typical 'new woodland' species such as Herb Bennett, Herb Robert, Foxglove, Hogweed and Broad-leaved Willowherb.

A fairly narrow band of mown grassland borders the southern bank of the pond. At the western end of the pond, around the existing interpretation board, a small population of Wood Horsetail is present.

A mature hedgerow forms the southern boundary of the site.

The nature conservation interest of the site is focused on the pond.

3.0 Key ecological features

- **Open water and submerged aquatic vegetation**

The open water and associated submerged aquatic vegetation is one of the most valuable features of this site. Overall, the site supports a healthy population of Broad-leaved Pondweed and a water starwort (*Callitriche* sp.), along with two species of duckweed and a large population of the non-native Canadian Pondweed. Although all these species are common and widespread, they do provide a valuable habitat for aquatic invertebrates and amphibians. The pond is quite heavily shaded and receives a considerable amount of leaf fall in the autumn. Although these conditions are not beneficial to all wetland species, there will be a suite of aquatic invertebrates that rely on shaded woodland ponds such as this, for which the site will be of importance.

- **Marginal vegetation**

A small area of emergent marginal vegetation is present around the eastern end of the pond, dominated by Common Bulrush together with less frequent Yellow Flag, Soft Rush, Remote Sedge, Common Duckweed and Grey Sallow. All are common and widespread species. In 1995, this marsh area was described as containing Common Water-cress and Brooklime, neither of which was present in 2005.

- **Waterlogged dead wood**

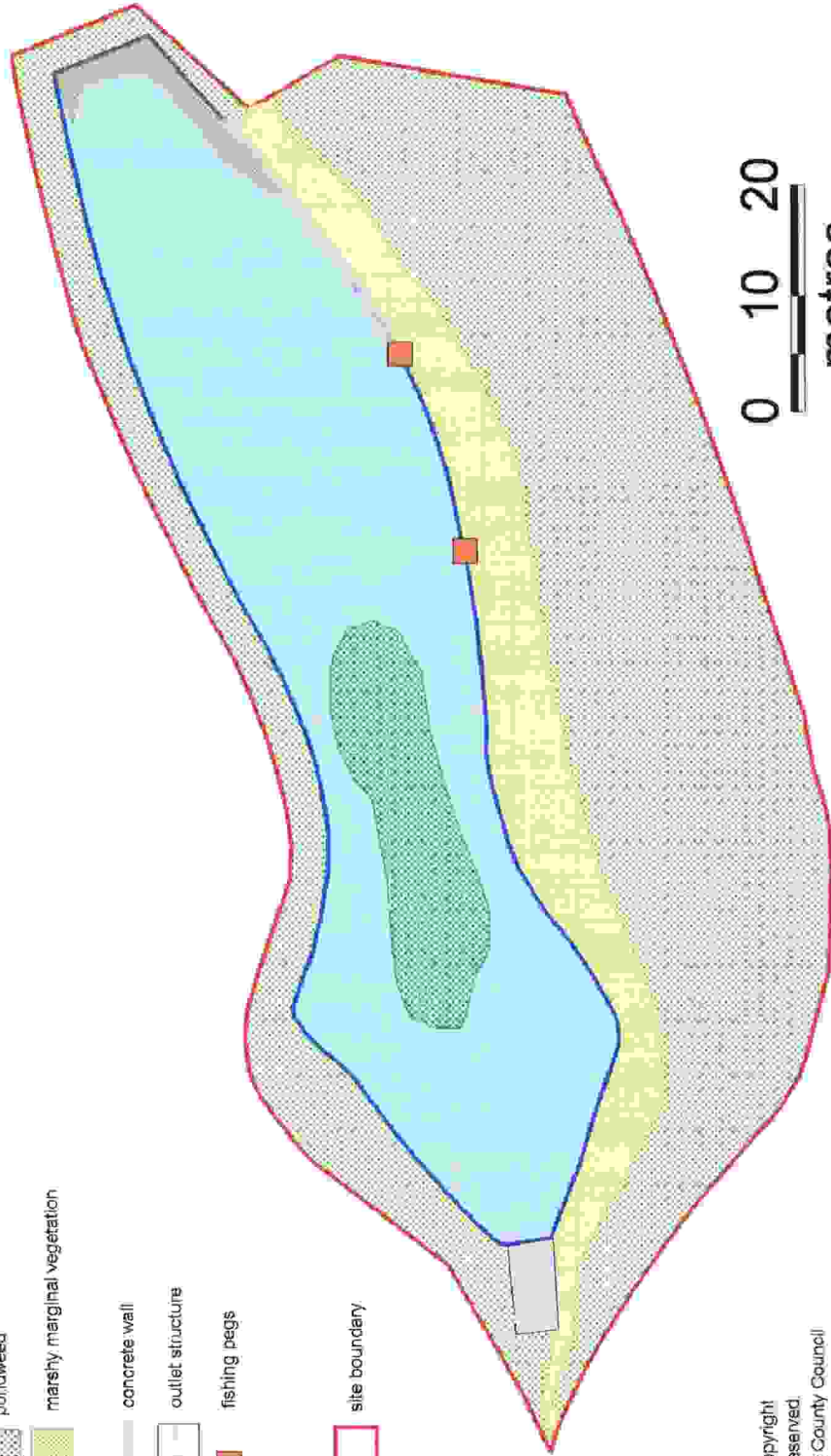
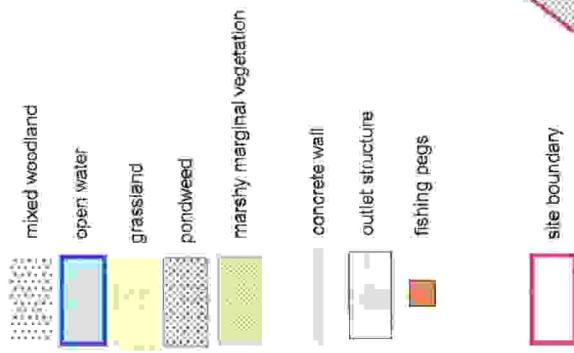
A small but important feature of the pond is the presence of occasional, fairly large pieces of dead wood partially submerged in the ponds. The invertebrates associated with the decay of timber are very diverse and of exceptional value for conservation, with wet dead wood providing a particularly specialised and frequently neglected micro-habitat. A large proportion of the invertebrate species associated with dead wood are local or rare and many are declining both in Britain and throughout Europe.

Retaining both standing and fallen dead wood *in situ* and avoiding the temptation to 'tidy up' dead wood, both in and out of the water, either by stacking it up in a single place or by removing it from site completely, is an excellent way to maximise the wildlife value of a site, and this practice should be continued.

- **Woodland**

Although fairly recent in origin and containing a number of non-native species, the area of woodland does contain some mature broadleaved trees and together with the mature hedgerow, adds variety to the site, providing feeding and breeding conditions for a variety of woodland bird and invertebrate species.

Habitats map



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4.0 Management objectives

The broad management objectives for the site remain broadly similar to those in the 1995 management plan.

Pond management: To maintain and, where possible, enhance the value of the aquatic habitats.

Woodland management: To maintain and, where possible, enhance the interest within the woodland and reduce the proportion of non-native trees and shrubs.

Grassland management: To maintain and enhance the ecological interest of the grassland.

Access: To maintain safe access for fishing and informal recreation by the local community.

4.1 Pond management

As a fairly deep, steep-banked pond surrounded by woodland, it should be recognised that, whilst it may be lacking in many of the shallower marginal habitats traditionally thought of as being of value for wetland wildlife, Brookfield Pond has an integral wildlife value. The key to managing the pond is continuity, maintaining its existing value, rather than worry about creating habitats that don't currently exist.

There may be some temptation to remove existing trees from the pond banks, to reduce shading and input of dead leaves. In fact, trees at the edge of a pond can be beneficial in many ways. They provide cover and shelter for birds and adult insects such as dragonflies. Underwater, fallen branches, fragments of wood and leaf litter all provide useful habitats for various invertebrates, whilst submerged roots of living trees are similarly important. Ponds in established woodland, with mature trees over 50 years old, are very likely to have their own specialised fauna, and the removal of

mature trees from the pond banks should not be considered without first carrying out a good survey to demonstrate the absence of important species.

Having said that, the growth of new trees on the ponds edge, particularly along the southern margin or where their presence could damage the structural integrity of the ponds banks, should be discouraged. There are currently several small Ash saplings along the southern margin, particularly to the east of the fishing pegs, that should be removed, as should any tree saplings that begin to invade the marginal 'marsh' vegetation at the eastern end.

There may be opportunities to extend the area of marginal vegetation around the pond through the use of revetments along the southern bank of the pond, which could be back-filled with soil and planted up with wetland plants present locally; for example, Water Forget-me-not, Brooklime and Meadowsweet are all currently present on the margins of the nearby reservoir, whilst Water-cress has previously been recorded from the pond itself.

4.2 Woodland management

The most serious management issue within the existing woodland is the dominance of rhododendron in the understorey. The gradual removal of this species would be highly beneficial to wildlife.

The retention of standing and fallen deadwood will be beneficial to invertebrates, fungi and birds.

In the long-term the promotion and encouragement of native species such as oak, ash, hazel and holly over species such as sycamore, beech and conifers will help to enhance the native woodland mix and be beneficial to wildlife.

The site borders a public road and is open to the public. As a result, regular inspection of the mature trees will be necessary, with additional inspections after periods of high winds or if problems are reported.

4.3 Grassland management

The key for grassland management is continuity: where a suitable mowing regime has been identified and implemented, this should be maintained. Where ever possible, when the grassland is mown, the cut material should be raked up and removed from the site.

4.4 Access

The existing access path, entering the site from the public road at the western end and running along the southern side of the pond, gives access to the fishing pegs and provides suitable access to the site for the local community to enjoy. This path, along with the gate and the boundary fencing and hedge, should be maintained. Considering the relatively small size of the site, there is no need for a circular path to be created; the benefits for public access are likely to be out-weighed by the negative impact upon the wildlife value of the site.

Appendix 1. Survey results

Brief species list for Brookfield Pond, recorded by P.J. Precey during a visit on 11th August 2005.

Nomenclature according to Stace (1997) New Flora of the British Isles.

Key to abundance scale: -

D = Dominant
A = Abundant
F = Frequent
O = Occasional
R = Rare

L = Locally
P = Present

Species highlighted in bold are Derbyshire Red Data Book species, listed in Elkington & Willmot 1996, *Endangered Wildlife in Derbyshire, the county red data book*, Derbyshire Wildlife Trust or (in the case of higher plants) on the provisional RDB list (Derbyshire Wildlife Trust, in prep).

Abundance values indicate the abundance of a plant species within the area surveyed. They are determined by the surveyor based on information collected during the survey.

Scientific name	Common name	Abundance
<u>Wetland Plants</u>		
<i>Callitriche sp.</i>	a water starwort	O
<i>Carex remota</i>	Remote Sedge	R
<i>Chamerion angustifolium</i>	Rosebay Willowherb	O
<i>Elodea canadensis</i>	Canadian Waterweed	A
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Iris pseudacorus</i>	Yellow Flag	O
<i>Juncus effusus</i>	Soft Rush	O
<i>Juncus inflexus</i>	Hard Rush	O
<i>Lemna minor</i>	Common Duckweed	O
<i>Lemna trisulca</i>	Ivy-leaved Duckweed	O
<i>Potamogeton natans</i>	Broad-leaved Pondweed	LD
<i>Salix cinerea</i>	Grey Willow	O
<i>Solanum dulcamara</i>	Bittersweet	R
<i>Typha latifolia</i>	Common Reedmace	LD
<u>Trees and shrubs</u>		
<i>Acer pseudoplatanus</i>	Sycamore	F
<i>Alnus glutinosa</i>	Alder	O

<i>Corylus avellana</i>	Hazel	O
<i>Quercus robur</i>	Pedunculate Oak	LF
<i>Fagus sylvatica</i>	Beech	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Ilex aquifolium</i>	Holly	O
<i>Larix deciduas</i>	Larch	O
<i>Pinus sylvestris</i>	Scots Pine	O
<i>Prunus sp.</i>	a cherry	R
<i>Rhododendron ponticum</i>	Rhododendron	O
<i>Sambucus nigra</i>	Elder	O
<i>Sorbus aucuparia</i>	Rowan	R

Woodland & grassland plants

<i>Alchemilla sp.</i>	A lady's mantle	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Digitalis purpurea</i>	Foxglove	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Geranium robertianum</i>	Herb-robert	LF
<i>Geum urbanum</i>	Herb Bennet	O
<i>Heracleum sphondylium</i>	Hogweed	F
<i>Hedera helix</i>	Ivy	F
<i>Holcus mollis</i>	Creeping Soft-grass	LF
<i>Lolium perenne</i>	Perennial Rye Grass	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Rubus idaeus</i>	Raspberry	R
<i>Rumex crispus</i>	Curled Dock	O
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Senecio jacobaea</i>	Ragwort	R
<i>Taraxacum officinale</i> agg.	Dandelion	O

Animal species recorded

<i>Anas platyrhynchos</i>	Mallard	7
<i>Gallinula chloropus</i>	Moorhen	2 (+nest)
<i>Aeshna cyanea</i>	Southern Hawker	1 ♀ ovipositing
<i>Pieris brassicae</i>	Large White	P
<i>Pararge aegeria</i>	Speckled Wood	P

Appendix 2. Plant and animal records

Full species list, taken from 1995 Management Plan.

Scientific name	Common name
Plants	
<i>Equisetum arvense</i>	Field Horsetail
<i>Equisetum sylvaticum</i>	Wood Horsetail
<i>Pteridium aquilinum</i>	Bracken
<i>Phyllitis scolopendrium</i>	Hart's-tongue
<i>Athyrium filix-femina</i>	Lady Fern
<i>Dryopteris filix-mas</i>	agg Male Fern
<i>Dryopteris dilatata</i>	Broad Buckler-fern
<i>Larix decidua</i>	Larch
<i>Pinus sylvestris</i>	Scots Pine
<i>Taxus baccata</i>	Yew
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Ranunculus ficaria</i>	Lesser Celandine
<i>Urtica dioica</i>	Common Nettle
<i>Fagus sylvatica</i>	Beech
<i>Quercus robur</i>	Pedunculate Oak
<i>Betula pendula</i>	Silver Birch
<i>Alnus glutinosa</i>	Alder
<i>Corylus avellana</i>	Hazel
<i>Spinacia oleracea</i>	Spinach
<i>Stellaria media</i>	Common Chickweed
<i>Rumex acetosa</i>	Common Sorrel
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Viola reichenbachiana</i>	Early Dog-violet
<i>Salix caprea</i>	Goat Willow
<i>Rorippa nasturtium-aquaticum</i> <i>sens.lat.</i>	Water Cress
<i>Rhododendron ponticum</i>	Rhododendron
<i>Ribes uva-crispa</i>	Gooseberry
<i>Rubus idaeus</i>	Raspberry
<i>Rubus fruticosus</i> agg.	Bramble
<i>Potentilla erecta</i>	Tormentil
<i>Potentilla anglica</i>	Trailing Tormentil
<i>Potentilla sterilis</i>	Barren Strawberry
<i>Geum urbanum</i>	Herb Bennet
<i>Alchemilla glaucescens</i>	a lady's-mantle
<i>Prunus</i> sp.	a planted
<i>Prunus laurocerasus</i>	Cherry Laurel
<i>Crataegus monogyna</i>	Hawthorn

Vicia sepium
Lathyrus pratensis
Epilobium hirsutum
Epilobium montanum
Chamerion angustifolium
Circaea lutetiana
Ilex aquifolium
Acer pseudoplatanus
Geranium robertianum
Hedera helix
Myrrhis odorata
Conopodium majus
Fraxinus excelsior
Cymbalaria muralis
Digitalis purpurea
Veronica chamaedrys
Veronica beccabunga
Campanula rotundifolia
Galium aparine
Sambucus nigra
Taraxacum officinale agg.
Bellis perennis
Senecio jacobaea
Tussilago farfara
Petasites hybridus
Elodea canadensis
Lemna minor
Juncus effusus
Dactylis glomerata
Deschampsia caespitosa
Holcus lanatus
Agrostis sp.
Typha latifolia
Hyacinthoides non-scripta
Iris pseudacorus

Bush Vetch
 Meadow Vetchling
 Great Willowherb
 Broad-leaved Willowherb
 Rosebay Willowherb
 Enchanter's-nightshade
 Holly
 Sycamore
 Herb-robert
 Ivy
 Sweet Cicely
 Pignut
 Ash
 Ivy-leaved Toadflax
 Foxglove
 Germander Speedwell
 Brooklime
 Harebell
 Cleavers
 Elder
 Dandelion
 Daisy
 Common Ragwort
 Colt's-foot
 Butterbur
 Canadian Waterweed
 Common Duckweed
 Soft Rush
 Cock's-foot
 Tufted Hair-grass
 Yorkshire-fog
 a bent-grass
 Bulrush
 Bluebell
 Yellow Iris

Other taxonomic groups

Mammals

Talpa europaea
Plecotus auritus
Sciurus carolinensis

Mole
 Brown Long-eared Bat
 Grey Squirrel

Birds

<i>Ardea cinerea</i>	Grey Heron
<i>Anas platyrhynchos</i>	Mallard
<i>Gallinula chloropus</i>	Moorhen
<i>Actitis hypoleucos</i>	Common Sandpiper
<i>Columba palumbus</i>	Woodpigeon
<i>Streptopelia decaocto</i>	Collared Dove
<i>Strix aluco</i>	Tawny Owl
<i>Apus apus</i>	Swift
<i>Alcedo atthis</i>	Kingfisher
<i>Dendrocopos major</i>	Great Spotted Woodpecker
<i>Hirundo rustica</i>	Swallow
<i>Delichon urbica</i>	House Martin
<i>Motacilla flava</i>	Yellow Wagtail
<i>Motacilla cinerea</i>	Grey Wagtail
<i>Motacilla alba</i>	Pied Wagtail
<i>Cinclus cinclus</i>	Dipper
<i>Troglodytes troglodytes</i>	Wren
<i>Prunella modularis</i>	Dunnock
<i>Erithacus rubecula</i>	Robin
<i>Turdus merula</i>	Blackbird
<i>Turdus pilaris</i>	Fieldfare
<i>Turdus philomelos</i>	Song Thrush
<i>Turdus iliacus</i>	Redwing
<i>Turdus viscivorus</i>	Mistle Thrush
<i>Sylvia borin</i>	Garden Warbler
<i>Sylvia atricapilla</i>	Blackcap
<i>Phylloscopus collybita</i>	Chiffchaff
<i>Phylloscopus trochilus</i>	Willow Warbler
<i>Regulus regulus</i>	Goldcrest
<i>Muscicapa striata</i>	Spotted Flycatcher
<i>Aegithalos caudatus</i>	Long-tailed Tit
<i>Parus ater</i>	Coal Tit
<i>Parus caeruleus</i>	Blue Tit
<i>Parus major</i>	Great Tit
<i>Sitta europaea</i>	Nuthatch
<i>Certhia familiaris</i>	Treecreeper
<i>Garrulus glandarius</i>	Jay
<i>Pica pica</i>	Magpie
<i>Corvus monedula</i>	Jackdaw
<i>Corvus corone</i>	Carrion crow
<i>Sturnus vulgaris</i>	Starling
<i>Passer domesticus</i>	House Sparrow
<i>Fringilla coelebs</i>	Chaffinch
<i>Carduelis chloris</i>	Greenfinch
<i>Carduelis carduelis</i>	Goldfinch
<i>Carduelis spinus</i>	Siskin

Carduelis flammea
Pyrrhula pyrrhula
Emberiza citrinella

Redpoll
Bullfinch
Yellowhammer

Amphibians

Bufo bufo
Rana temporaria

Common Toad
Common Frog

Fish

Abramis brama
Gasterosteus aculeatus

Bream
Three-spined Stickle

Invertebrates

Potamopyrgus jenkinsi
Bithynia tentaculata
Lymnaea stagnalis
Lymnaea peregra
Planorbis corneus
Acroloxus lacustris
Anodonta cygnea
Sphaerium lacustre

Jenkins' Spire Snail
a spire snail
Great Pond Snail
Wandering Snail
Great Ramshorn Snail
Lake Limpet
Swan Mussel
an orb mussel

Pisicola geometra
Theromyzon tessulatum
Helobdella stagnalis

a leech
a leech
a leech

Cloeon dipterum
Ephemera danica

a mayfly
Green Drake

Ischnura elegans

Blue-tailed Damselfly

Velia caprai
Gerris lacustris
Sigara dorsalis
Sigara falleni

Water Cricket
Common Pondskater
a waterboatman
a waterboatman

Sialis lutaria

Alder Fly

Nicrophorus vespillo
Melolontha melolontha

Common Burying Beetle
Common Cockchafer

Anabolia nervosa
Athripsodes aterrimus

a caddisfly
a caddisfly

Hepialus fusconebulosa
Pieris brassicae

Map-winged Swift
Large White

Pieris napi
Anthocharis cardamines
Xanthorhoe montanata
Xanthorhoe fluctuata
Ecliptopera silaceata
Thera obeliscata
Hydriomena furcata
Eupithecia vulgata
Selenia dentaria
Odontopera bidentata
Alcis repandata
Campaea margaritata
Agrotis exclamationis
Noctua pronuba
Diarsia mendica
Diarsia rubi
Naenia typica
Orthosia gothica
Mythimna impura
Apamea monoglypha
Mesapamea secalis agg.
Autographa jota

Asellus aquaticus
Gammarus pulex

Green-veined White
Orange Tip
Silver-ground Carpet
Garden Carpet
Small Phoenix
Grey Pine Carpet
July Highflyer
Common Pug
Early Thorn
Scalloped Hazel
Mottled Beauty
Light Emerald
Heart and Dart
Large Yellow Underwing
Ingrailed Clay
Small Square-spot
Gothic
Hebrew Character
Smoky Wainscot
Dark Arches
Common Rustic
Plain Golden Y

a water slater
a freshwater shrimp

Appendix 3. Managing Ponds for Nature Conservation booklet.

Managing ponds for wildlife




ENGLISH
NATURE

**POND
ACTION**


NRA
National Rivers Authority