

The Environment Of Raleigh Park, Oxford

By Gerald Dawe



For the Hinksey Fields Protection Group and
North Hinksey Parish Council

December 1996

Dedication

This report is dedicated to my mother—
—and to the memory of my father— —gentle cyclist and walker, in quieter times, through Raleigh Park.

Acknowledgement

An initial draft of this report was produced in October 1994. It is a deliberately personal account rather than a scientific one. It is hoped that this slightly more friendly approach (together with the use of superscripts^{thus}), may encourage people into reading the text. This, slightly revised version was published in December 1996. Thanks are due to Valerie Wales, Austin Griffiths, Tony Wetherell and the late

Primrose Warburg who visited the park with me in mid-September 1994 and asked me to produce this.

I am also grateful to Carolyn Harrison, of University College London for permission to quote from her British Association paper—as yet unpublished work.

I also acknowledge my thanks to Coleopterist Tommy Eccles, for advice on the beetle *Chrysolina menthastris*; and to Alan Morton of Imperial College for his National Vegetation Classification (NVC)

interpretation of my data.

Thanks are also due to Ian Marriott who provided the records of birds, mammals and amphibia from Raleigh Park.

Although the report was produced for the Hinksey Fields Protection Group and for North Hinksey Parish Council, responsibility for the comments and the interpretation in the report, are mine alone.

Further Copies and Comments

North Hinksey Parish Council

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Hinksey Fields Protection Group and Friends of North Hinksey

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Full Report Title

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Updates / Revisions

Any updates to this report—in terms of field work, or work on, for example, geology or historical background to the site— can be sent to . Past records of plants at the site would be particularly appreciated.

1.0 Introduction

Raleigh Park is situated between the Elms Rise Estate and Westminster College in the suburb of Botley, on the western side of Oxford. It is bordered by Raleigh Park Road and Westminster Way / Harcourt Hill. At a slightly greater distance away, runs the dismally noisy and heavily trafficked A34 Birmingham to M40 to Newbury road and the A420 "Botley Road" running from central Oxford to Swindon. An approximate National Grid Reference for the Park is SP492053.

The purpose of this report is to identify and describe the vegetation of Raleigh Park in some detail, then to discuss proposed management for the park. Whilst the management proposals are primarily vegetation-based some account has also been taken of animals (especially birds) found at the site. The presence of the nearby A34 bypass has also been taken into account.

The essence of the report is to demonstrate that the park has significant value for nature conservation and for people and that this value can best be retained through the re-introduction of a grazing regime, and the **avoidance** of any other—but the most basic—of management techniques.

For social ("quality of life") as well as nature conservation reasons I argue that interference (via management) to the Park needs to be avoided as far as is practicable.

There has not been time in the present report to do a desk study on the history and geology of the site.

Scientific names conform to (for plants) Stace⁴⁶ (1991) and (for birds) to Burton⁵ *et al* (1981).

There are also some species which have only been identified



Raleigh Park today

tentatively (indicated by a question mark (?), or not at all—for example ferns on the site. And there are other species groups for which information is terribly inadequate in the present report (for example, invertebrates).

These are matters on which North Hinksey Parish Council, Matthew Arnold School, North Hinksey School, Botley School and local residents could contribute during the coming years, to greatly strengthen this report's findings. I would positively welcome more information.

2.0 Plant Communities

2.1 Site and Setting

The Park is mainly on the Corallian limestone, some of which outcrops at various points in the Park area. Limestone grassland communities are well-known for their species-richness and Raleigh Park is no exception in this. The park probably extends onto the Oxford Clay at the bottom.

Areas of marsh occur throughout the park. These are probably more extensive nowadays, than they used to be (i.e. Horsetail (*Equisetum* sp.) and Water Mint (*Mentha aquatica*) in particular have spread out into the grassland areas). The marsh is characterised by the presence of so-called "tall-herb" communities.

Woodland is found in one small patch at the top of the park on its western edge in the form of a small copse. There is one ancient woodland indicator species present which is described below. Scrub is found in scattered patches throughout the park.

Finally, the park as a whole has an "ancient" feel to it which is reinforced by the varying topography of hillocks and small valleys which may indicate that it has never been ploughed. This is a point which needs to be particularly emphasised. In Raleigh Park, it is possible to travel from marsh "bog" to short, species-rich grassland, to rough grassland, through to outlier Hawthorn trees, thence to woodland, within a matter of a few hundred yards.

This vital and increasingly rare, topographical and semi-natural, diversity is at the core of what makes Raleigh Park of such great value both for nature and for human communities.



Raleigh Park is special because of its semi-natural and topographical diversity ...

2.2 Methods

In the accounts of the vegetation, I have used plant species lists compiled by myself on 20th July 1978 (supplied to Oxfordshire County Museum in Woodstock) and added to on 6th August 1983. A final check was made on a short walk through the Park on 20th September 1994. The cumulative list is provided in Appendices 1 and 2.

Plant communities or vegetation assemblages have been crudely classified (because no quantitative data was used) according to the National Vegetation Classification (NVC) using Mark Hill's "TableFit" program²⁴. The goodness of fit with the NVC categories was between 39% to 57% —not particularly high. This is thought to be due to the use of presence/absence data in the plant surveys.

There now follow brief descriptions of the "communities" or vegetation types which can be found in the park, their current status, and

management recommendations for them. I have chosen a broadly "successional" approach in describing them, i.e. going through from "weedy" communities to "woodland".

2.3 Weedy Communities

2.3.1 Description

There are a few areas of disturbed ground in the Park, especially at the extreme western edge of the wood bounded by Lime Road and Yarnells Hill. Here, Spear-leaved Orache (*Atriplex prostrata*) occurs as a response to roadside salting during the winter. The weed community ranked as National Vegetation Classification (NVC) assemblage OV9, whose provisional name is "arable, including market garden". This is within a range of OV1-OV42 weed communities and vegetation types of open habitats²⁴.

Scientific Name	Common Name	
<i>Atriplex prostrata</i>	Spear-leaved Orache	} Not in Park? So not included on plantlist
<i>Chenopodium album</i>	Fat Hen	
<i>Crepis capillaris</i>	Smooth Hawk's-beard	
<i>Malva sylvestris</i>	Common Mallow	
<i>Petasites fragrans?</i>	Winter Heliotrope?	
<i>Polygonum aviculare</i>	Knotgrass	
<i>Sisymbrium officinale</i>	Hedge Mustard	
<i>Solanum nigrum</i>	Black Nightshade	
<i>Stellaria media</i>	Chickweed	

Table 1. Weedy species of OV9 noted at Raleigh Park.

2.3.2 Current Status and Management Recommendations:

There are no species of any particular significance in the above list, and no measures necessary for their preservation.

2.4 Grassland

2.4.1 Description

Limestone (and neutral) grassland occurs throughout the park and there are many features that make it of interest. The overall grassland community ranked as National Vegetation Classification (NVC) assemblage MG5a, whose plant classification name is "Centaurea - Cynosuretum" (i.e. Knapweed - Crested Dogstail - community). This is within a range of MG1-MG13 mesotrophic grasslands including pastures and meadows²⁴.

Firstly, its presence, until recent decades, in a fairly species-rich condition, can be attributed to the presence of grazing horses on the site. As Gibson, who, interestingly, was working with horses on MG5

grasslands in his recent research¹⁵ acknowledges: "... Many common and other lands have had such semi-feral [horse] breeds, either on their own or with mixed stock, grazing for centuries. He [Oates, referred to in Gibson's account] noted the ways in which such animals differ in their selectivity and behaviour from more thoroughly domesticated breeds. In this view, good conservation man-

agement can often use horses, but the traditional more hardy breeds of pony are best."

Various features of the grassland vegetation are now described.

Perennial Ryegrass (*Lolium perenne*) occurs in the grassland, amidst other species, including Meadow Buttercup (*Ranunculus acris*) which used to dominate the pasture so much 10-15 years ago. Ryegrass is often the grass which causes concern when it is planted along road verges and its competitive qualities exclude all other flowers from survival in its vicinity. However, the Raleigh Park variety occurs in harmony with nearby flowers, the reason being that it is not a cultivar but a wild pasture grass of natural origin.

Some other notable pasture grasses occur on the site. They are broadly indicative of unfertilised, semi-natural, neutral to alkaline grassland: Sweet Vernal Grass (*Anthoxanthum odoratum*), Meadow Barley (*Hordeum secalinum*) and



Classic buttercup pasture at Raleigh Park: photo from the late 1970s

Quaking Grass (*Briza media*).

Of the herbs, those species typical of heavy clay / limestone grassland and often occurring together include Agrimony (*Agrimonia eupatoria*), Greater Knapweed (*Centaurea scabiosa*), Spiny Restharrow (*Ononis spinosa*), Burnet Saxifrage (*Pimpinella saxifraga*), Hoary Plantain (*Plantago media*) and Yellow Rattle (*Rhinanthus minor*).

A further notable limestone plant which I believe emerged from a buried seed-bank purely as a response to an excavation for a pipeline by British Gas was Vervain (*Verbena officinalis*) which I recorded on 4th August 1983. Regarding the presence of British Gas on the site and also its occasional incursions into Raleigh Park it is notable that the company takes its responsibilities towards environmental management and habitat rehabilitation seriously. British Gas has published books on heathland restoration¹¹ and the urban environment⁶. Thus, British Gas can



Spiny Restharrow

be called upon —given its past publications record— to respect Raleigh Park as a notable nature conservation site which must be treated sensitively.



Another area of species-rich, moderately-grazed pasture at the end of the 1970s

In brief, the finding of Vervain may imply that the Park has some other species lying dormant which may yet be revealed by future disturbances.

In a few waterlogged areas of the Park, Tufted Hair Grass (*Deschampsia cespitosa*) occurs.

Quite extensive rough grassland areas also occur. These areas probably originated as a result of selective grazing by the horses' and by their adoption of "latrine" areas for deposition of urine/faeces^{10,15}. However, in recent years, due to lack of grazing, they have spread out and have come to dominate the Park's vegetation somewhat.

The areas of rough grassland are dominated by Cocksfoot (*Dactylis glomerata*) and False Oat Grass (*Arrhenatherum elatius*) and, in places, are further characterised by the presence of Nettles (*Urtica dioica*), Thistles (*Cirsium* spp.) and Docks (*Rumex* spp.).

There seem to have also been some changes to the grassland which are unrelated to the grazing issue, and are possibly due to climatic change.

Most notable is the disappearance of classic buttercup meadow (dominated by Meadow Buttercup (*Ranunculus acris*) and with it other attractive species such as Hoary Plantain (*Plantago media*)) to be replaced by areas of Water Mint (*Mentha aquatica*) and Horsetail (*Equisetum* sp.). This has been particularly pronounced in the area to the east of the pond and the extreme south-eastern area of the Park.

It is perhaps noting in passing, that two plants —Hay Rattle (*Rhinanthus minor*) and Red Bartsia (*Odontites vernus*) are "hemi-parasites", taking mineral nutrients off other vegetation. Whilst in the

Grasses		Herbs	
Scientific Name	English Name	Scientific Name	English Name
<i>Agrostis capillaris</i>	Common Bent	<i>Achillea millefolium</i>	Yarrow
<i>Agrostis canina</i>	Velvet Bent	<i>Agrimonia eupatoria</i>	Common Agrimony
<i>Agrostis gigantea</i>	Black Bent	<i>Bellis perennis</i>	Daisy
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	<i>Centaurea nigra</i>	Common Knapweed
<i>Arrhenatherum elatius</i>	False Oat-Grass	<i>Centaurea scabiosa</i>	Greater Knapweed
<i>Briza media</i>	Quaking Grass	<i>Cerastium fontanum</i>	Common Mouse Ear
<i>Cynosurus cristatus</i>	Crested Dog's-tail	<i>Galium verum</i>	Lady's Bedstraw
<i>Dactylis glomerata</i>	Cocksfoot	<i>Heracleum sphondylium</i>	Hogweed
<i>Deschampsia cespitosa</i>	Tufted Hair Grass	<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Elytrigia repens</i>	Common Couch Grass	<i>Leontodon sp.</i>	Hawkbit
<i>Holcus lanatus</i>	Yorkshire Fog	<i>Lotus corniculatus</i>	Bird's-foot Trefoil
<i>Hordeum secalinum</i>	Meadow Barley	<i>Matricaria discoides</i>	Pineapple-Weed
<i>Lolium perenne</i>	Perennial Ryegrass	<i>Medicago lupulina</i>	Black Medick
<i>Phleum bertolonii</i>	Small Timothy Grass	<i>Odontites vernus</i>	Red Bartsia
<i>Phleum pratense</i>	Timothy Grass	<i>Ononis spinosa</i>	Spiny Restharrow
<i>Poa annua</i>	Annual Meadow Grass	<i>Pimpinella saxifraga</i>	Burnet-saxifrage
Herbs -long-grass areas		<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Cirsium arvense</i>	Creeping Thistle	<i>Plantago major</i>	Great Plantain
<i>Cirsium vulgare</i>	Spear Thistle	<i>Plantago media</i>	Hoary Plantain
<i>Convolvulus arvensis</i>	Field Bindweed	<i>Potentilla anserina</i>	Silverweed
<i>Rumex crispus</i>	Curled Dock	<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Rumex obtusifolius</i>	Broad-leaved Dock	<i>Prunella vulgaris</i>	Self-heal
<i>Urtica dioica</i>	Stinging Nettle	<i>Ranunculus acris</i>	Meadow Buttercup
		<i>Ranunculus bulbosus</i>	Bulbous Buttercup
		<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Rhinanthus minor</i>	Yellow Rattle
		<i>Rumex acetosa</i>	Common Sorrel
		<i>Senecio jacobaea</i>	Ragwort ? Hoary Ragwort
		<i>Trifolium fragiferum</i>	Strawberry Clover
		<i>Trifolium pratense</i>	Red Clover
		<i>Trifolium repens</i>	White Clover
		<i>Urtica dioica</i>	Stinging Nettle
		<i>Verbena officinalis</i>	Vervain

Table 2. Grassland species of community MG5a noted at Raleigh Park

past they were sometimes regarded as "pests" by farmers they are now (broadly speaking) viewed as being indicative of long undisturbed and uncultivated pastures ("ancient meadows").

2.4.2 Current Status and Management Recommendations:

It must be recognised that a severe threat applies to the rich limestone grassland flora of Raleigh Park due to the spread of the rough grassland which, in turn, is due to the lack of grazing on the site. Areas of rough grassland benefit certain birds, but its current dominance is excessive.

Some quite sensitive assemblages of grassland plants containing, for example, Quaking Grass (*Briza media*), Agrimony (*Agrimonia eupatoria*), Greater Knapweed (*Centaurea scabiosa*), Burnet Saxifrage (*Pimpinella saxifraga*), Meadow Buttercup (*Ranunculus acris*), Hoary Plantain (*Plantago media*) and Yellow Rattle (*Rhinanthus minor*), and which used to be present on the south-eastern area of the park, have all but disap-



Abandoned grassland, from the 1990s. Contrast with the cover photograph, taken in 1979.

peared due to the lack of grazing. (These were noted by myself in 1978, and they have not been overtaken by the phenomenon of the spread of Water Mint (*Mentha*

aquatica) and Horsetail (*Equisetum* sp.) noted above.)

Furthermore, other areas of dry grassland with good growths of Spiny Restharrow (*Ononis spinosa*) on them, seem about to be overtaken by grasses such as Cocksfoot (*Dactylis glomerata*) and False Oat Grass (*Arrhenatherum elatius*) which are typical of species-poor unmanaged grassland.

In other areas of the Park, grassland with Ladies Bedstraw (*Galium verum*) present seem to be similarly affected.

There is thus an urgent need to restore grassland management—in the form of grazing—to the Park. **Leaving the Park much longer without grazing will threaten the survival of some of its most beautiful and uncommon plants.**

We would recommend that re-introduction of grazing is considered via one of the following means:



Hemi-parasites: Red Bartsia ... and Yellow Rattle, of importance in grassland ecology.

i) Horses/Scruffy Ponies

Advantages: They will co-exist quite easily with dogs. Also, their local availability is good—via a riding stables—provided they can gain access to Raleigh Park. They will also create (at low stocking levels) a relatively infertile sward within which quite species-rich communities can occur¹⁵. Gibson¹⁵ notes no long-term damage to grass swards due to light or moderate horse grazing. On heavier grazing, however, he found that relatively species-rich grassland could convert to Perennial Ryegrass (*Lolium perenne*)-dominated pasture.

Disadvantages: They will not readily eat the now well-established rough grassland areas of the Park containing Cocksfoot (*Dactylis glomerata*) and False Oat Grass (*Arrhenatherum elatius*). Depending on the breed, they may be fussy grazers. In particular, if high quality horses are installed on the site then they seem likely to leave much of the Park ungrazed. In normal selective grazing they will create rough grass areas¹⁰. These will gradually expand in area over the years. Also, some “poaching” of the ground may occur. Unfortunately, horses and ponies—these days—may also be subject to criminal attack on them.

ii) Cattle

Advantages: They will co-exist quite easily with dogs. They (beef cows are to be preferred) will readily graze the rough grassland at Raleigh Park and their introduction (or that of sheep) would seem to be essential in the initial stages of control of the rough grassland containing Cocksfoot (*Dactylis glomerata*) and False Oat Grass (*Arrhenatherum elatius*). Either this, or the mowing

and removal of cuttings would be essential at an early stage.

Disadvantages: They may create (even at low stocking levels) a relatively fertile sward within which few species occur and the species-rich communities of Raleigh Park fail to re-establish. Rough grassland might decrease altogether, to the detriment of bird populations.

iii) Sheep

Advantages: They will readily graze the rough grassland at Raleigh Park and their introduction (or that of cattle) would seem to be essential in the initial stages of control of the rough grassland containing Cocksfoot (*Dactylis glomerata*) and False Oat Grass (*Arrhenatherum elatius*). Either this, or the mowing and removal of cuttings would be essential at an early stage. Sheep would, in all likelihood, create a fine-grained species rich grassland



The type of sward which might be re-established by horse-grazing

throughout the site.

Disadvantages: Problems might occur due to sheep worrying by dogs and sheep owners would probably be reluctant to place any in Raleigh Park for this reason. Relatively high stocking levels would be needed to ensure that the areas of rough grass were eaten¹⁰. Unpalatable grass species such as Tufted Hair Grass (*Deschampsia caespitosa*) would be avoided altogether and might expand in abundance due to the presence of sheep. Rough grassland might decrease altogether, to the detriment of bird populations.

Therefore, on grazing I conclude that the best options are either:

- i) flail-cutting the areas of rough grassland (plus removal of the cuttings) followed by the introduction of “scruffy” (non fussy) ponies to graze the site at a low intensity (plus future monitoring of the extent of the spread of rough grassland areas on the site);
- ii) a short period of intensive cattle-grazing to cut down the areas of rough grass followed by the introduction of ponies to graze the site at a low intensity (plus future monitoring of the extent of the spread of rough grassland areas on the site);
- iii) the introduction of cattle-grazing at a low intensity followed by monitoring of the re-establishment of the species-rich swards on the site.

Option i) is generally to be preferred. As Gibson¹⁵ says:

“... if the traditional management of a field is known, it should be kept up rather than succumb to the temptation to switch from pasture to hay for the sake of a small increase in diversity”. I would say that the temptation to change from horses to cattle should also be resisted.

2.5 Marsh and Tall Herb Communities

2.5.1 Description

In waterlogged areas of the park some very characteristic marsh and open water communities have grown up over the years. The marsh communities are known as "tall-herb communities" because of the presence of many species among them having such stature. The overall marsh community ranked as National Vegetation Classification (NVC) assemblage S14c, a *Sparganium erectum* (Branched Bur-Reed) swamp, with associated Water Mint (*Mentha aquatica*). (It may be noted that the *Sparganium*, however, is thought to have been introduced!) This is within a range of S1-S28 swamps and tall-herb fens²⁴.

In 1978 —however— when I first surveyed the site there were also some characteristic short-herb communities present.

For example, extensive areas of Brooklime (*Veronica beccabunga*), Cuckoo Flower (*Cardamine pratensis*) and Toad Rush (*Juncus bufonius*) used to occur in a horse-trampled area to the north of the pond.

Elsewhere, to the far north of the pond, there occurs the most extensive area of marsh on the site. Again, this has outlying communities of relatively short herbs: Common Spotted Orchid (*Dactylorhiza fuchsii*), Common Fleabane (*Pulicaria dysenterica*), Greater Bird's-foot Trefoil (*Lotus pedunculatus*) and Square-Stalked St. John's Wort (*Hypericum tetrapterum*). I think that —due to both lack of grazing and the spread of certain marsh species— this community has deteriorated and been



The pond in Raleigh Park which was excavated by the City Council

virtually lost since 1978.

The central area of the marsh, both here, and to the immediate west of the pond, is dominated by "tall-herb communities" which include the



Common Spotted Orchid at Raleigh Park

following species: Meadowsweet (*Filipendula ulmaria*), Hemp Agrimony (*Eupatorium cannabinum*), Horsetail (*Equisetum* sp.), Great Willowherb (*Epilobium hirsutum*) and Water Figwort (*Scrophularia aquatica*).

Common Fleabane (*Pulicaria dysenterica*) is more widely distributed on the site and occurs, for example, in the grassland to the north of the pond.

Small areas of open and flowing water with their associated vegetation occur in parts of Raleigh Park. The most obvious area became established when Oxford City Council decided to "create" a pond at the junction of the stream and the footpath in the centre of the site.

Various species have been introduced (presumably by the City Council) which were never native to the Park, for example Bulrush or Reedmace (*Typha latifolia*), Branched Bur-Reed (*Sparganium erectum*) and Canadian Pondweed (*Elodea canadensis*).

Assumed removed

Prior to "pond-creation" the marsh and tall-herb communities spread almost up to the path, and there were notable species present such as Fool's Water-cress (*Apium nodiflorum*), Water-cress (*Rorippa nasturtium-aquaticum*) and Water-Starwort (*Callitriche* sp.).

The needless excavation of the pond area has created an area which, according to text-book nature conservation principles, now needs "management". The excavation of the original pond can be seen to contradict the natural pattern of the park, and its further management is also largely unnecessary³⁷.

Finally, the importance of the areas of marsh and open water areas to birds must be emphasised. The presence of Marsh Tit (*Parus palustris*), Reed Bunting (*Emberiza schoeniclus*), Pied Wagtail (*Motacilla alba yarrellii*) and of course Mallard (*Anas platyrhynchos*) must be attributable to the extensive marsh areas at Raleigh Park.

2.6 Woodland and Scrub

2.6.1 Description

Woodland and scrub exists throughout the site, particularly at its extreme north-western end. Here, amidst regenerating English Elms (*Ulmus procera*) and other trees and shrubs, there is a path which travels into the grassland area of the site from the junction of Lime Road and Yarnells Hill. The overall woodland community ranked as National Vegetation Classification (NVC) assemblage W21b, a variant of blackthorn - bramble scrub, within a range of W1-W25 woodlands and scrub, including bramble underscrub²⁴.



Another view of the pond ...

The ground flora in this woodland area consists largely of Ivy (*Hedera helix*) but it is interspersed with typical woodland herbs such as Lords and Ladies or Cuckoo Pint (*Arum maculatum*) and Yellow Archangel (*Lamium* *Archangel* (*Lamiastrum*

outside Park?

galeobdolon). There is also a notable woodland grass in this "copse", Wood False Brome (*Brachypodium sylvaticum*). Wood False Brome also occurs in other areas of Raleigh Park, such as along the shaded stream-sides at the extreme eastern end.



Woodland and scrub at Raleigh Park

Some of the more ephemeral woodland/hedgerow plants are found scattered throughout the site. A typical example of this is Upright Hedge Parsley (*Torilis japonica*) an annual—which grows adjacent to scrub in the eastern end of the park.

It is worth noting in passing that the Yellow Archangel appears to be the only species on the site which is strongly indicative of ancient woodland. (This is a "Group 2" plant as defined by Peterken³⁶.)

In all this "copse area" gives a fine impression of an old woodland and scrub area. Dead wood and decaying trees are present on site too, and this is probably responsible for the presence of certain notable birds on the site such as the extremely rare Wryneck (*Jynx torquilla*), the Green Woodpecker (*Picus viridis*) and the Great Spotted Woodpecker (*Dendrocopos major*). Whether or not these birds are attracted to this woodland area because of the presence of dead wood and dead plus decaying trees, the whole wood gives a very fine aesthetic impression to the visitor.

Scrub and "outlier" trees are found throughout Raleigh Park in a seemingly wild distribution. Of course, there have been some recent additions (i.e. planted trees) but the whole presents a very pleasing and wild appearance to the visitor.

The presence of this scrub interspersed with grassland is probably also responsible for the presence of some notable "scrub-associated" bird species at the site—for example Black Cap (*Sylvia atricapilla*), Long-Tailed Tit (*Aegithalos caudatus*), Tree-Pipit (*Anthus trivialis*) and Willow Warbler (*Phylloscopus trochilus*).

Right: Table 4. Woodland species of W21b noted at the Park

Woodland and Outliers -trees

<i>Acer campestre</i>	Field Maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Aesculus hippocastanum</i>	Horse Chestnut
<i>Crataegus monogyna</i>	Hawthorn
<i>Fraxinus excelsior</i>	Ash
<i>Malus sylvestris</i>	Crab Apple
<i>Prunus spinosa</i>	Blackthorn
<i>Quercus robur</i>	Pedunculate Oak
<i>Rosa canina</i>	Dog Rose
<i>Rubus fruticosus</i>	Bramble
<i>Salix alba</i>	White Willow ? where
<i>Salix cinerea</i>	Sallow
<i>Sambucus nigra</i>	Elder
<i>Ulmus procera</i>	English Elm
<i>Populus sp.</i>	Poplar

Half-shade herbs

<i>Alliaria petiolata</i>	Garlic Mustard
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Arctium minus</i>	Lesser Burdock
<i>Ballota nigra</i>	Black Horehound
<i>Geum urbanum</i>	Wood Avens
<i>Glechoma hederacea</i>	Ground Ivy
<i>Lapsana communis</i>	Nipplewort
<i>Stachys sylvatica</i>	Hedge Woundwort
<i>Stellaria holostea</i>	Greater Stitchwort ? Outside Park
<i>Torilis japonica</i>	Upright Hedge Parsley
<i>Lamium album</i>	White Dead-nettle

Deep shade herbs

<i>Arum maculatum</i>	Lords-and-Ladies/Cuckoo Pint
<i>Brachypodium sylvaticum</i>	Wood False-Brome
<i>Geranium robertianum</i>	Herb Robert
<i>Hedera helix</i>	Ivy
<i>Lamium galeobdolon</i>	Yellow Archangel ? Outside Park
<i>Ranunculus ficaria</i>	Lesser Celandine
<i>Rumex sanguineus</i>	Wood Dock
<i>Mercurialis perennis</i>	Dog's Mercury

Climbers/Scramblers

<i>Bryonia dioica</i>	White Bryony
<i>Calystegia sepium</i>	Hedge Bindweed
<i>Galium aparine</i>	Cleavers
<i>Solanum dulcamara</i>	Bittersweet/Woody Nightshade
<i>Tamus communis</i>	Black Bryony
<i>Vicia cracca</i>	Tufted Vetch

2.6.2 Current Status and Management Recommendations:

The woodland needs to be left as it is, without the implementation of coppicing, harvesting or other currently fashionable techniques.

These are driven by the need for "activity" and possible health and safety aspects and they present dangers to Raleigh Park. The nature of the conflict is elegantly summed up by Gilbert¹⁶:

"Foresters commonly speak of the problems of old age, the dangers of insects and fungal diseases, and persist in referring to trees as 'the crop'.

They believe that no trees should be allowed to grow till they fall naturally and have suggested a rotation for amenity woodland about a third longer than for a commercial crop [100-150 years] ... They particularly favour the taking out of decrepit trees and those in decline. Much is made of a point that natural regeneration often fails because it does not get the care and maintenance essential for survival. The neat, tidy and predictable woodland which results from this approach appeals to the local authority members because they have a legal responsibility to keep the woods safe for the public and are liable to be sued if an accident occurs."

"Ecologically trained members see woodland differently, particularly the larger blocks ... Being aware that the degenerate stages of woodland, such as large old trees and glades, are extremely rare nationally they would prefer to see parts of the woodland grow through to senility and decay. ... The key to the ecologists' approach is to let natural processes shape the wood."

This comment is also reinforced by that of Handley (John Handley is Groundwork Professor of Urban Regeneration at the University of Manchester) referring to Brotherton Park SSSI on Merseyside which contains valley woodlands²⁰:

"... if their character is to be retained, careful management will be needed to accommodate recreational use by visitors from surrounding residential areas. Perhaps more insidious than this physical pressure will be the demand to make such areas 'safe and tidy'. This should be resisted; these primary habitats contain an assemblage of plants and animals which has evolved over a long time-scale and, once lost or modified, they are difficult if not impossible to replace."

Finally, should the small woodland area at Raleigh Park ever become threatened by the introduction of a management regime, then surveys of lichens and woodland invertebrates should be carried out first to assess their status in relation to the woodland.

Nick Hodgetts of the Joint Nature Conservation Committee (JNCC—a body allied to English Nature) has recently become critical of the adoption of felling or coppicing within ancient woodlands, prior to ecological surveys taking place²⁶. It seems that even in recent woodlands, and in Elder (*Sambucus nigra*) thickets, quite rich lichen floras (including rare species) can be present. Coppice activity without surveying for these species can threaten valued habitats for these species.

Secondly, English Nature has long-identified the value of dead-wood to invertebrates. Some very important species may reside in dead-wood on the ground or in the dead limbs of standing trees²⁸.

Hence, on English Nature's terms there is a presumption against felling dead trees and removing dead-wood from the ground. Even if felling is decided on there is a clear policy implication (arising from English Nature's work) for a local authority to undertake a survey for rare or unusual invertebrates within a woodland, prior to any felling taking place.

Allied to nature conservation matters, the social effects of felling trees are also significant. As one American text book on urban forestry puts it "large old trees have a greater value (utility) to residents by their presence than the value of their products. Many people would view the sight of large live trees being cut as offensive and some would consider it intolerable"¹⁹.

Finally, the spread of scrub in Raleigh Park is not yet encroaching onto the marsh areas or the species-rich grassland areas and would probably be suppressed if grazing were to be re-introduced. Scrub does not, therefore, present a problem at present.

3.0 Animal Records From The Park

3.1 Mammals and Amphibia

A few species of mammals occur and Ian Marriott has provided records of Rabbit (*Oryctolagus cuniculus*), Hare (*Lepus capensis*), Fox (*Vulpes vulpes*), Badger (*Meles meles*), Field Mouse (*Apodemus* sp.), Vole (*Clethrionomys/Microtus* sp.), Hedgehog (*Erinaceus europaeus*), Mole (*Talpa europaea*) and Muntjac Deer (*Muntiacus reevesi*) from Raleigh Park.

Amphibia consist of Frogs (*Rana temporaria*) and Toads (*Bufo bufo*) inhabiting the marsh and pond area —there used also to be newts (*Triturus* sp.) deliberately introduced to the pond but the colony is now apparently defunct.

3.2 Birds

Observations of Ian Marriott have revealed the presence of 45 species of birds at Raleigh Park (see Appendices 3 and 4).

There are some very notable species amongst those found.

The following is a summary of Marriott's conclusions regarding encouraging birds at Raleigh Park.

- The wild area around the pond should be left as undisturbed as much as possible.
- The spine of scrubby trees through the centre of the park should be encouraged with (if possible) an overgrown area along either side to discourage human interference.
- Reduction in grass height by more intensive grazing would encourage the return of ground-feeding birds which at present feed outside of the park.
- A reduced area of ungrazed grass could be left along the south west hedge on the higher ground to provide food for the seed-eaters
- The Park will improve in quality for birds as the young trees mature and provide suitable roosts for the larger birds (this is not critical, however, since there are mature trees just outside the park)
- The scrub in the Park needs controlling.
- Any reduction in areas of rough grassland will encourage more recreational use to the detriment of the bird populations



Water Mint ... habitat of the very beautiful beetle *Chrysolina menthastri*

- A zoning scheme is suggested to reduce the above problem

There is no conflict between these findings and the management recommendations (based primarily on vegetation) made elsewhere in this report.

Finally, the recommendation for zoning is, however, a specifically bird-orientated measure given added impetus by recent findings from an urban context¹⁸. In this study it was found that human disturbance can deleteriously affect populations of birds in urban areas, and that something as simple as a fence around a thicket will protect them and increase numbers. We would recommend that the introduction of such a simple measure as this is considered for one area of scrub at the Park. But, any introduction of fencing material or planting of scrub must be done as subtly as possible.

3.3 Invertebrates

The leaf-beetle *Chrysolina menthastri* has been recorded on

water Mint (*Mentha aquatica*) in the park (determined by T.C.E. Eccles). Although apparently this species is not apparently sufficiently rare to appear in a recent account of scarce beetles in Britain²⁷, T.C.E. Eccles considers it to be extremely locally abundant. The words "extremely locally" are important here. He considers that, because of its rarity, in his field experience, it is a very strong candidate for being given high conservation status —and Raleigh Park should certainly be managed to preserve its foodplant. (On the continent¹⁴ *menthastri* is regarded as a subspecies of *C. herbacea* and it seems that, in the past, some confusion has occurred in Britain between *C. graminis* and *menthastri*.)

If this species is indicative, there is no doubt that further invertebrate surveys of the Park would yield much useful information about its status. Undoubtedly there are good butterfly populations present and it would be useful to compile lists of these and other invertebrates in future years.

4.0 Landscape Context of Raleigh Park

4.1 General

This section of the report briefly mentions the surrounding landscape context and notable natural features surrounding Raleigh Park.

4.2 Semi-natural Areas Surrounding The Site

Nearby limestone grasslands occur at Wytham Woods (although these appear to have a different species composition to those at the park) and (in rough scrubland) to the immediate south-west of the site where the local plants Woolly Thistle (*Cirsium eriophorum*) and Wild Liquorice (*Astragalus glycyphyllos*) occur. In general, however, it is demonstrably the case that different plant species compositions occur in these localities, compared to those found in Raleigh Park.

The western edge of the park is bordered by additional bog (marsh) and woodland areas which benefit bird populations.

To the east across the Southern Bypass, further marsh and water meadow communities occur, including such species as Pepper Saxifrage (*Silaum silaus*) and Great Burnet (*Sanguisorba officinalis*) on alluvium.

Thus it can be seen that, very locally speaking, it is the limestone and neutral grassland plant assemblages which are of the greatest nature conservation value in the park.



The wider landscape context of Raleigh Park is of importance ...

4.3 The A34 Southern Bypass

4.3.1 General

This report cannot be concluded without —reluctant— reference to the Southern Bypass which adjoins the eastern part of Raleigh Park, in as much as there are plans for the widening of this road in the not-too-distant future.

My comments come from a quite straightforward and uncontroversial environmental perspective: that is, the protection of the environment for future generations rather than favouring a relatively very narrow range of road-lobbying companies. (These are mainly companies in the British Road Federation (BRF).³)

Fortunately, within the UK now, there is increasingly objective evidence of the often irreversible environmental damage which the road-building programme is doing, and increasing lack of evidence as to

the economic “benefits”⁴⁸ of road-building.

4.3.2 Conflicts With Nationally Adopted Policies

The widening of the Southern Bypass would potentially conflict with the following policies, all of which have been formally adopted at a national level, although not necessarily —and this is critical— as statutory matters for local authorities to deal with:

i) The “Convention on Biodiversity”⁴³

Reason for the conflict: “biodiversity” is defined within the UK’s response to the Convention as “... the variety of life forms we see around us. It encompasses the whole range of mammals, birds, reptiles, fish, insects and other invertebrates, plants, fungi and micro-organisms

6.0 Conclusion

I sum up below the key findings of this report:

1. The Need For Minimal Intervention

Raleigh Park needs minimal intervention from any authority (i.e. local authority, (practical) volunteer group, naturalists' trust, etc.) in order to maintain its fullest possible "naturalness" and landscape quality. In particular, it does represent, on the western edge of Oxford City, a uniquely "wild" area with a rich limestone and neutral grassland flora, with (seemingly) the original topography of the land in place, where it has (possibly) remained so for thousands of years. I have argued in this report that maintenance of the fullest possible "naturalness" is important to the site, both for reasons of public enjoyment of the Park and for reasons of nature conservation (and, landscape conservation).

2. Incursions To Be Avoided

Thus, in Raleigh Park, I feel that there should be the strongest possible resistance to:

- i) Tree-planting.
- ii) Pond creation.
- iii) Excavation (e.g. by British Gas)
- iv) Land-take to highways development.
- v) Other drastic changes or interventions in management.

The sole exception to the above (i.e. v)) is "grazing management" and a possible "zoning for birds" as identified below:

3. Grazing Management

Grazing urgently needs to be re-introduced to the Park to counter

the occurrence of large areas of species-poor grassland and to re-establish the areas of relatively species-rich neutral and limestone grassland. Gibson¹⁵, states that: "... opposite to the effect of overgrazing and latrine areas, but equally damaging, is the effect of abandonment. there was a massive build up of [leaf] litter ... this 'damage' may differ in other aspects such as its reversibility".

Grazing may be introduced via:

- i) A simple cutting regime plus:
- ii) Horses/scruffy ponies.
- iii) Cattle.
- iv) Sheep.

The need for doing so is very urgent.

4. Zoning For Birds

Consideration should be given to the careful "zoning" of the park to encourage bird life. This could consist simply of leaving some areas of grassland ungrazed, or putting barriers to humans around an area of scrub. This could be in the form of brambles, or in the form of fencing. We suggest that this should be done as unobtrusively as possible. It may even be that such areas will develop naturally.

5. Other Management Measures

There are two other management measures, which, if introduced to the Park, would make a very useful contribution to its management. Importantly, these are "passive" measures which, whilst they might consume budgets (to a lesser or greater extent), **would not entail any major physical intervention in the park**, and would contribute very greatly to: i) people's usage of the park; and ii) our (collective) ecological understanding of it.

These are:

- i) The presence of a countryside ranger or warden on site, from time to time, to give people increased feeling of security whilst there;
- ii) Ecological monitoring of grassland and other plant communities plus animal communities and the effects which the re-introduction of grazing would have on these.

7. Overall Philosophy

Finally, the overall philosophy which this report seeks to justify is that there is no need (at the current time) for Raleigh Park to have "textbook conservation management" in the form of coppicing, pond creation, tree-planting, vegetation chopping, etc. imposed on it, **other than in the case those few simple measures which have been proposed in this report**. Furthermore, there is no need to draw up a compartmentalised "management plan map" of the site. Such maps detract from *the mystery* of the site and encourage activity, which might be justifiably regarded as unnecessary. On the contrary, there is every need to respect the Park's gentle wildness for the sake of maximising its value both to visitors and wildlife alike. Any intervention in the Park, other than those few simple measures identified in this report, needs to be avoided absolutely. This policy is ecologically and (more importantly, perhaps) socially justifiable at the present time.

6. Reporting

Finally it would be useful and appreciated if all measures could to be notified to North Hinksey Parish Council (NHPC), prior to their implementation.

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- 50 WHITELEGG, J., GATTRELL, T. and NAUMANN, P.(1993). Traffic and Health. Environmental Epidemiology Department, University of Lancaster. pp. 38 plus Appendices and Figures.
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About The Report Author

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“The periodical Urban Nature provides an excellent platform from which to begin integrating the biological, physical, and social sciences as each discipline relates to quality of life issues in urban areas and to issues associated with the environmental effects of urbanisation ... The magazine’s main advantage is that it contains information on the urban environment not easily accessible elsewhere ... This magazine is highly recommended to those individuals or groups that advocate for urban environmental management.”

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