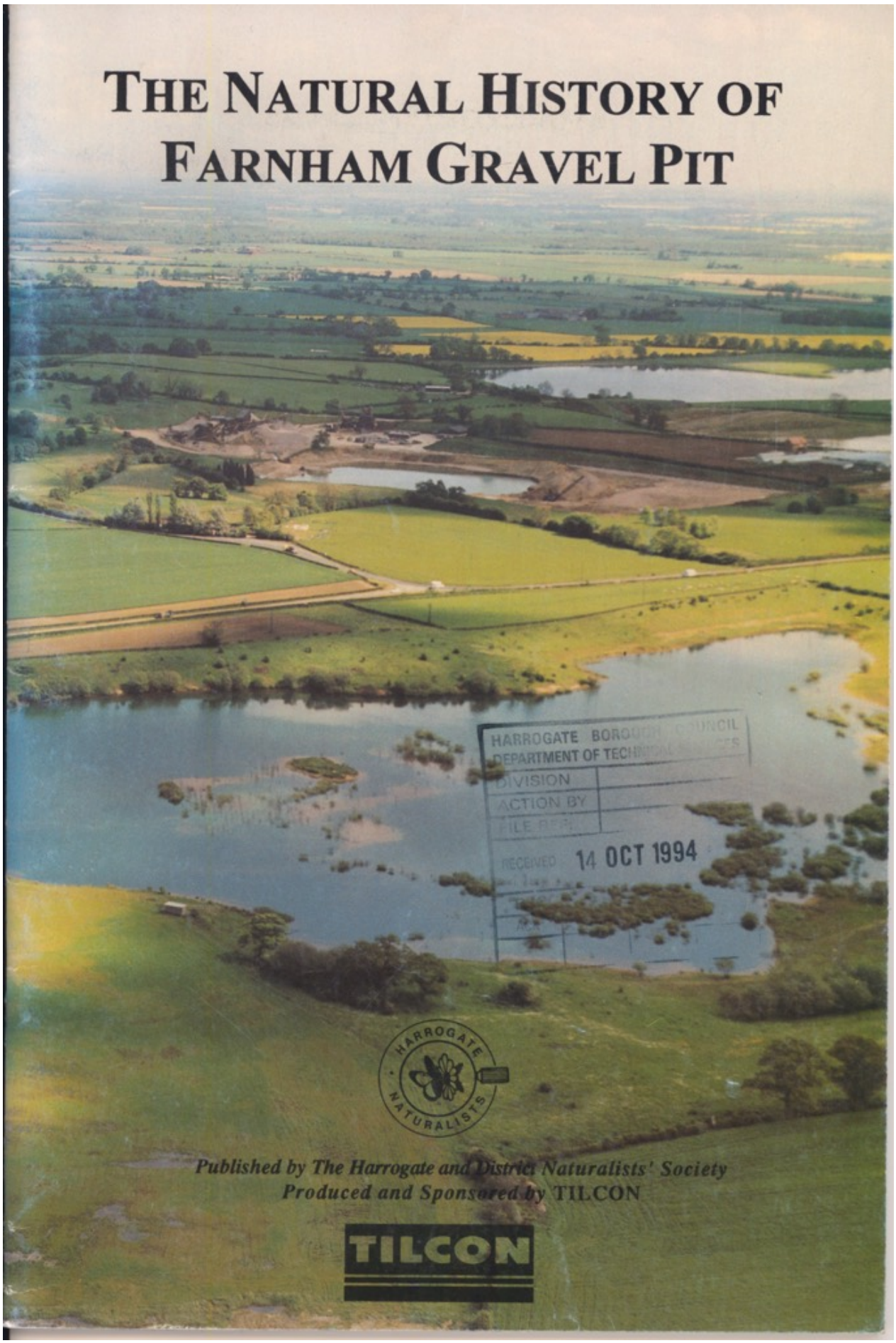
THE NATURAL HISTORY OF FARNHAM GRAVEL PIT



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THE SOCIETY WISHES TO ACKNOWLEDGE THE GENEROUS DONATION BY GORDON OGILVIE IN MEMORY OF HIS WIFE MARION TO WHOM THIS BOOK IS DEDICATED.

'To see a world in a grain of sand
and a heaven in a wild flower'

WILLIAM BLAKE

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This publication would not have been possible without the enthusiasm and involvement of many people and the Society wishes to record its thanks, particularly to the owners of Farnham Gravel Pit and the Trustees of the Slingfold Trust, for allowing us access to the site and for their co-operation and support over the years, which has enabled us to manage the area for its wildlife. Thanks also to their agents, Messrs. Dacre, Son and Hartley through their representative Ian Cox, who has dealt sympathetically with our many requests. Many thanks to Messrs. Tilcon for their practical assistance during the early stages of the site's development and also for their generous sponsorship in producing this booklet.

The whole Farnham project would not have come to fruition without the dedication of Miss June Atkinson who has been its mainstay over the years and who organised the team of authors, without whose contributions the Report could not have been compiled and the co-operation of Dr. M. Barnham, Dr. R.D. Cundall, R. Evison, Mrs. M.A. Mellard and Miss A. Mettam is acknowledged with many thanks. Thanks also to those who contributed records for the classified lists namely Mr. R. Elliott for mammal and amphibian records, Mr. and Mrs. R. Evison for botanical records, Mr. R. Marshall for invertebrate and plant gall records, Mr. L.V. Ratliffe for macrolepidoptera records and also to Mrs. M.A. Mellard and her team for the botanical survey.

Special thanks must also go to Simon and Jill Warwick who undertook the formidable task of typesetting the complete manuscript and who produced the final typeface and layout design, and to John R. Mather who gave patient and valuable advice throughout and edited the entire publication ensuring uniformity of presentation. Their combined input has brought a professional quality to the work.

No less important was the involvement of the following people who assisted in a variety of ways as indicated: Harrogate and Claro Angling Association for their co-operation in our various projects, Ripon Sailing Club who loaned boats for management work on the islands, Mr. A. Bradley who farms the adjacent area, Ann Mettam for the initial typing and Diane Bowes for her typing assistance. A special word of thanks to Simon Warwick for his time and professional assistance towards the pond project and to Steve Worwood who also gave it his support. Thanks to Birdline Northeast and their Yorkshire Bird Race Team for a generous donation towards the purchase of the pond liner, to Yorkshire Water who kindly supplied a rowing boat, to the members of Knaresborough Ringing Station who built the hide and to Derrick Mellard for organising working parties. Finally, many thanks to those members of the Society who have given their time and energy over the years to maintain the site and for their contribution to the records.

We are most grateful to Brian Darbyshire and Mark Whorley for providing the attractive drawings and maps which greatly enhance the publication.

FOREWORD

At a time when conservationists are fighting to preserve remnants of the countryside, it is interesting to find a place where recent development has not only introduced a new habitat to the District but one which is still actively developing.

The Gravel Pits at Farnham have been the subject of a great deal of study and management in accordance with modern principles of conservation, by members of the Harrogate and District Naturalists' Society.

From one angle you could regard the pits as an outdoor laboratory, illustrating the colonisation of plants and animals in the wake of sand and gravel extraction, but this would be to take a narrow view indeed. In any area, standing fresh water in the form of ponds, pools or lakes, is a valuable habitat attracting a very diverse range of life forms and Farnham is an excellent example of this.

I have spent a lot of time in the last ten years bird-watching at Farnham from the comfort of the Society's hide and have been lucky enough to see a few of the good birds which have passed through. But there is more to Farnham than this; it has drawn the attention of naturalists of varied interests and, from their expertise, I have learned a lot and revived some old interests. For a comparatively small acreage, the range of wildlife recorded is impressive and the lists are by no means exhaustive. This is not a habitat in which the last word has been spoken and it is still possible to make new discoveries, both on a personal and on a regionally significant level. This I find an exciting proposition and everybody's interest will, no doubt, be quickened by the publication of base-line data in this document.

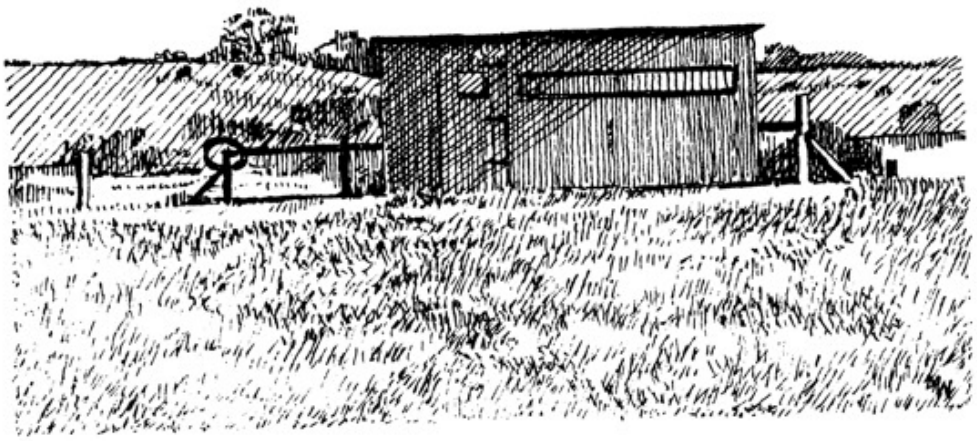
Another facet of Farnham is its use for a variety of recreational purposes such as fishing, sailing and target shooting. In these management-conscious days, such sharing might be considered politically correct, but how often is it successful? At Farnham it does work well and we all rub along together.

If I had no other reason for being a Farnham fan, I would be influenced by the beneficial effects of being able to wander about the area which has its own charm. But, I must admit, spice is added by the prospect of seeing a rare bird, a scarce butterfly, or being shown a wild flower new to my experience.

To date, Farnham has had no formal protection but I would hope that, as the information in this booklet becomes more widely spread, there will be an increased realisation of its importance.

Michael Clegg
July 1993

INTRODUCTION



The collection of documentary evidence confirming the importance of Farnham as a site of special interest began in the late 1970s. Since then, with the presence of an observation hide and its use by members, more and more records have accumulated adding greatly to our knowledge of the area.

In these days of changing land use, such records are extremely valuable and it was decided, therefore, to collate all the available information in one document. Farnham is a county notifiable site of regional importance. It It is a very valuable habitat for a wide range of species and the list is growing with new examples being recorded annually.

The proposed Harrogate/Knaresborough Northern By-pass gives rise for great concern. The route west of the gravel pits would cut Farnham off completely from Coney Garth Wood, thus restricting the movements of mammals such as Roe Deer and Badger. It is possible the road will not be built, but whatever the outcome, documentary evidence on the importance of the site will go a long way in persuading the planners to reach a compromise.

In the meantime, recording continues and as each new season approaches, there is always optimism that another new species will be found. A log book is maintained and almost daily coverage is achieved, providing the records which have formed the basis for this document. *The Natural History of Farnham Gravel Pit* is a tribute to those who have contributed over the years.

JUNE E. ATKINSON

Chairman - Scientific and Conservation Committee

GEOLOGY AND HISTORY OF THE SITE

Robert Evison

Situated a mile to the north of Knaresborough, Farnham Gravel Pits are located in a shallow basin approximately 150 feet above sea level. The pits cover an area of some 200 acres, which is roughly pear-shaped, lying with its greatest distance along the north - south axis.

The pits owe their existence to superficial deposits of fluvial origin laid down during the Quaternary period. These deposits overlay Permian limestone and marls and attain a depth of 50 feet in places. Geologists generally agree that the course of the River Nidd was modified during the Pleistocene glaciation; originally east along the Walkingham Valley, then north-east across Staveley Carrs to join the River Ure near Boroughbridge. During the glacial period, the river was diverted south at Farnham, laying down rich deposits of sandstone and limestone pebbles in approximately equal amounts. Subsequently, the river was again diverted, taking up its present course to the west of Knaresborough. It is these deposits which have been worked at Farnham since the earliest recorded permissions for gravel extraction were given in 1941.

The total area is made up of two lagoons of 60 and 25 acres, 70 acres of scrubland surrounding these lagoons and 46 acres now sown down to pasture and recently returned to agricultural use.

To give some idea of Farnham's size and importance during the main period of operation (1974), the pit produced a good part of the 1.5 million tons of sand and gravel which was supplied to the construction industry from the Harrogate - Ripon Resource Zone. The nature of the site dictated that most of the deposits had to be worked below the water-table by dragline and dredger and as a result, large lagoons were created. The potential for rapid seepage of water through the gravels and magnesian limestones in this area, made the infilling of the site with domestic refuse impractical because of the resultant pollution, as water was already being abstracted at several nearby locations, including a public supply borehole at Knaresborough.

Sequence of Operational Events

Area 'A' (see Maps on p. 3) was the first recorded piece of land to be worked, permission for this quarrying being given in 1941 and it is fair to assume that a start was made soon afterwards. The worked material was transported by overhead buckets to an existing plant at Lingerfield. The old concrete bases of the towers may still be seen in the wood at 'B' and in the adjacent field at 'F'. By 1960, the area at 'C' had been worked or had been simply used for the dumping of clay spoil. Ill-drained, the area quickly became covered with *Juncus* species and was attractive to breeding waders such as Snipe, Curlew and Lapwing. Already, the new plant erected at 'P' had been in operation for some time, processing much of the worked material from area 'D' and the new extensive areas to the south of the plant at 'L'. Much of the waste silt from this activity was deposited at 'G'.

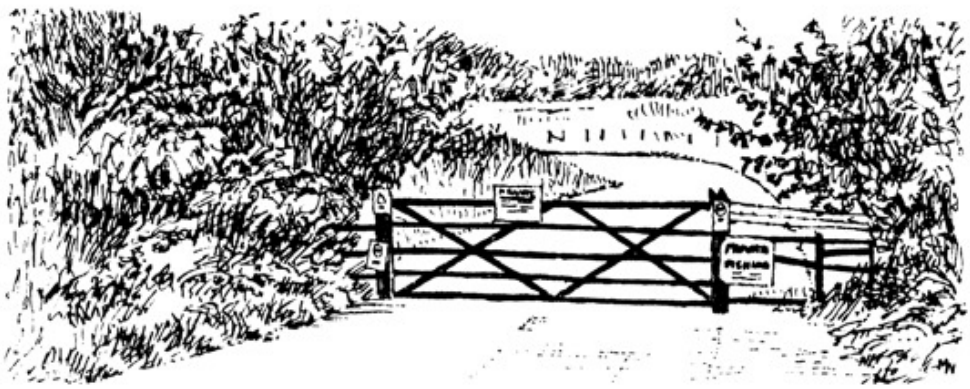
Area 'E' comprises clay spoil heaps, presumably left from the earliest quarrying. These are now overgrown with naturally regenerated ash trees which have reached a height of 30 feet. Area 'B' appears to be a small area of very old wet deciduous woodland which has escaped quarrying. This area together with a small, very wet pasture adjacent to it, would repay an extensive botanical investigation.

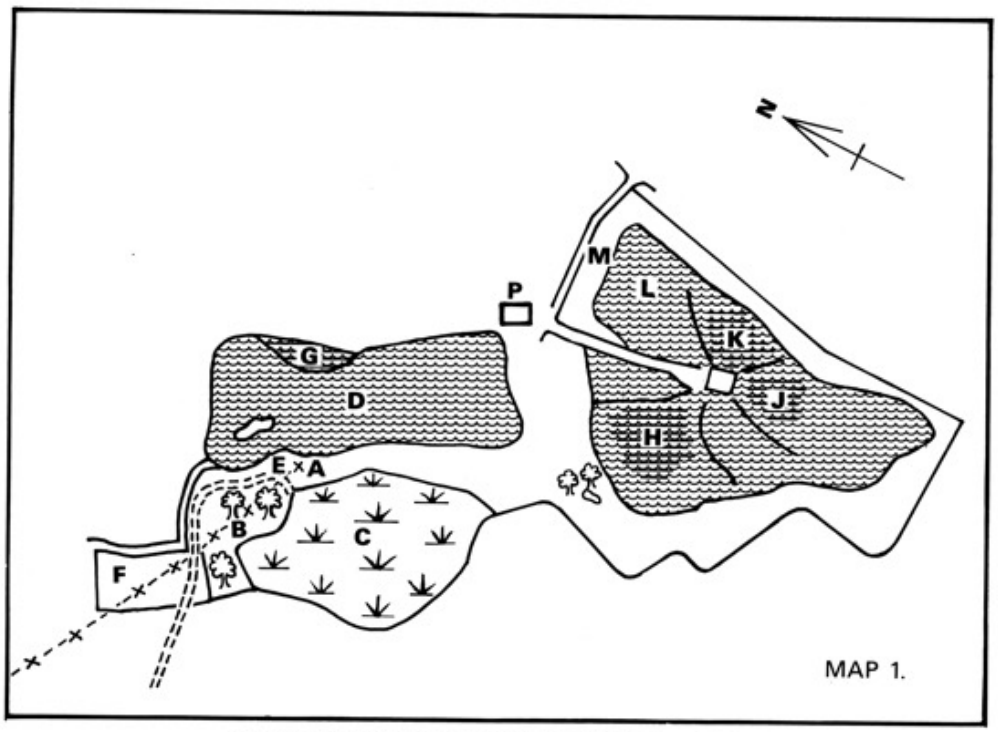
The area to the south of the plant at 'P' was actively worked during the 1950s and early 1960s, the area furthest south being left until last. For a number of years after the aggregate had been removed, smaller material was dredged or sucked from the bottom of the lagoon and processed by a purpose-built plant sited approximately where the main island is at

the present time. Silt beds were deposited in the lagoon at points 'H', 'J' and 'K' surrounding the plant. It was the existence of such silt beds that first attracted birdwatchers to the gravel pits, in their search for migrant wading birds.

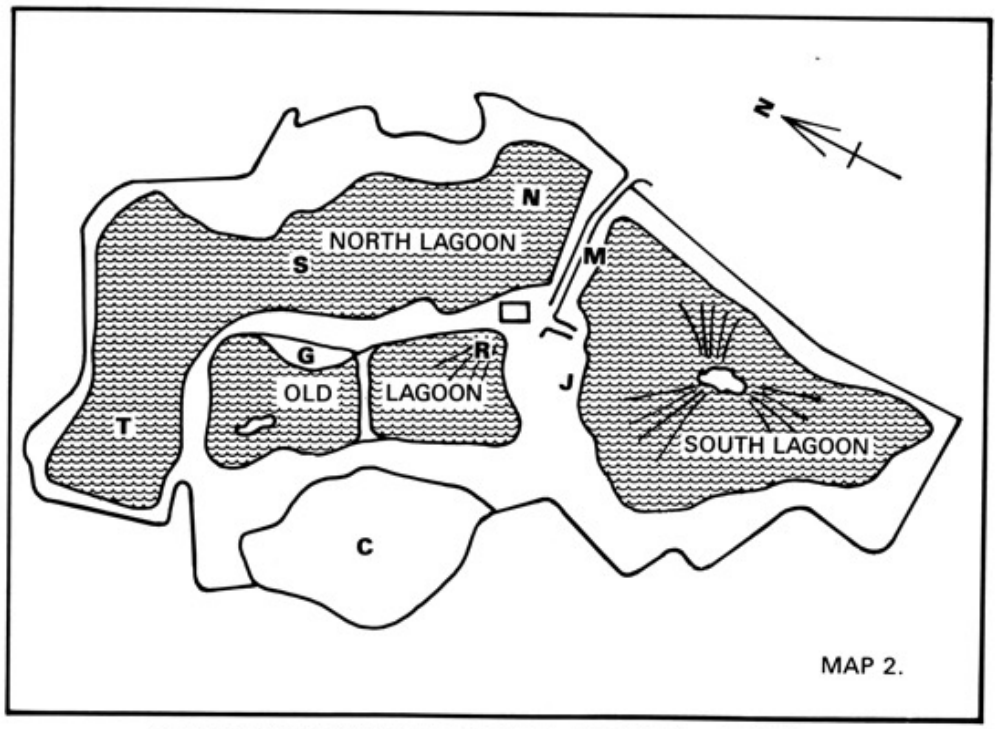
By the mid 1960s, work had commenced at point 'S' and area 'C' had been returned to pasture, after an earlier attempt at growing barley had failed. Spoil from the new workings at 'S' was dumped at 'G' and a bank of spoil was made across the old lagoon. This was done to prevent silt which was entering the lagoon at 'R', from prematurely damaging the fishing interest by spreading too rapidly over the entire floor of the lagoon. For at least a decade, the southern end of this lagoon accepted the waste silt from the entire operation at Farnham. As the North Lagoon continued to grow in size, new permissions were sought for area 'T' and about the mid 1970s, arrangements were made to transfer Farnham Rifle Club to its present position alongside both the Old and North Lagoons. Ripon Sailing Club was also transferred, fortunately only temporarily, onto the South Lagoon. By now, this area had completely been worked out and a small amount of tree planting was included in its restoration. Alder was the predominant species; several clumps were planted around the lagoon on the bank sides and a good number were also planted amongst the already established, self-sown willows that had by now invaded the silt beds. The plant was dismantled and finally the pump house at 'M' was re-sited by the North Lagoon. With the cessation of pumping, the water level quickly rose on the South Lagoon and it attained its present size and shape sometime during the late 1970s. Area 'N' near Gibbet Wood, was the penultimate area to be worked, top soil from here being piled into a huge heap between the Society's hide, erected during the 1978/79 winter at 'J', and the long established silt bed adjacent to the main plant. Silt was now being laid down in the northern end of the Old Lagoon and the huge stockpiles of gravel, which had continued to grow throughout the mid 1970s alongside the approach road, were gradually being reduced.

Finally, the plant was taken down around 1982, removed from the site and the area beneath the plant was then worked and taken for processing to the new site at the Golf Club. Material was brought in to help restore the silted areas of the Old Lagoon before they could be top soiled and seeded. Extensive restoration work was carried out prior to the gravel company's complete withdrawal. This chiefly took the form of grading the bank sides and the planting of several thousand trees of various species. The gravel company vacated the site about 1985.





OPERATIONAL EVENTS 1941 - 1960



OPERATIONAL EVENTS MID 1960'S - 1980

Management of the South Lake

June E. Atkinson

It became obvious in 1985 that the vegetation of the area was changing significantly; the hawthorn scrub was developing, the willows becoming invasive and self-sown seedlings of both species, together with birch, were encroaching into the main areas of botanical interest. Following an approach to the owners, permission was granted to tackle the most serious problems. Several large willows were removed over a three year period from the Great Crested Newt pond in order to create a larger expanse of open water.

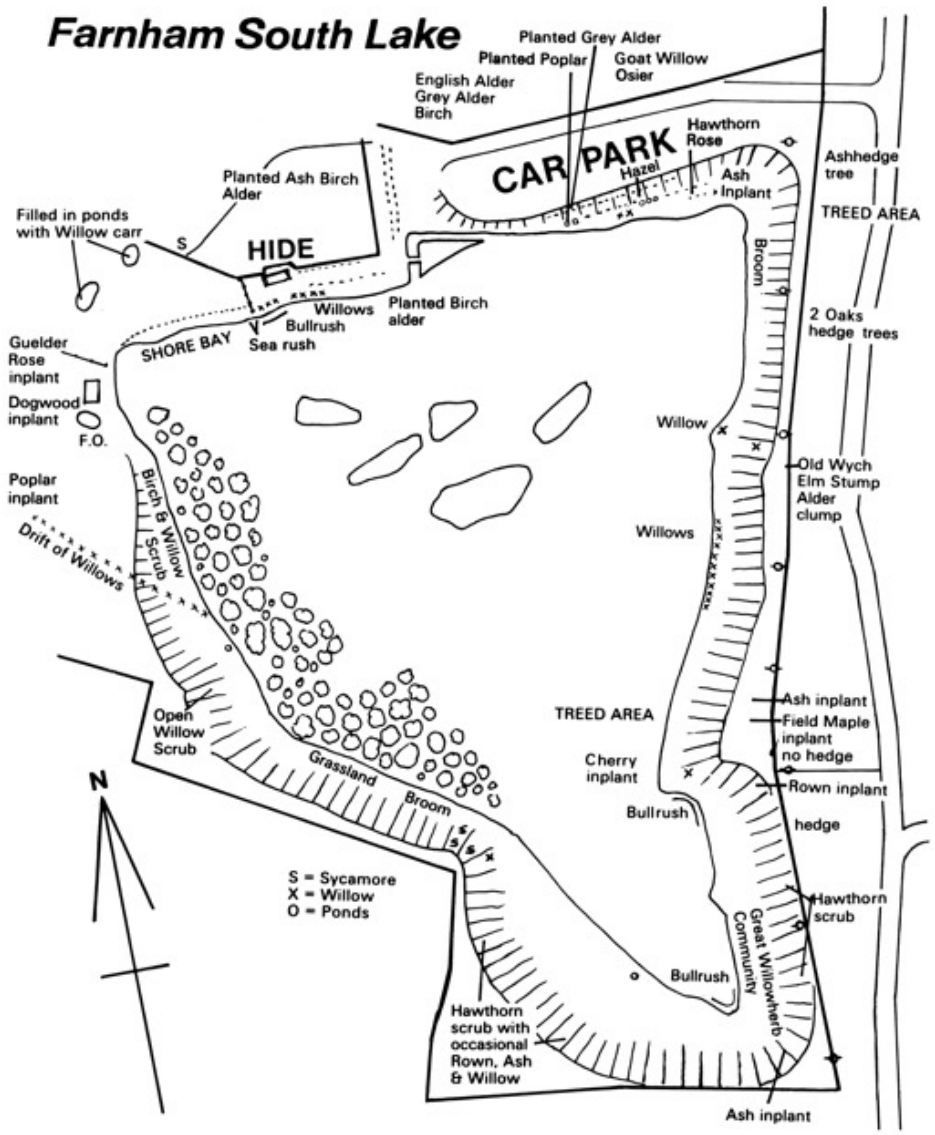
In October 1988, a proposal was submitted to the Society's council to obtain a management agreement from the owners. A plan was drawn up covering all aspects of natural history and the related problems in the area of the South Lake. This management plan was accepted in 1989 and we are extremely grateful to the Slingfold Trust for their cooperation in granting permission to carry out the work.

Since then, various tasks have been undertaken in an attempt to control natural progression. The islands received particular attention as Common Terns had shown an interest in breeding over a number of years. Some of the partly submerged dead willows were removed to clear the flight approach for waders and so that ducks could have access to the islands for feeding and loafing. In the past, only one island remained above water during the winter, the others, being lower lying, appeared only during late spring and summer. The changing climate and consequent low water table over the last three years, have meant that all the islands are now exposed throughout the year. As a result, they do not receive the cleaning which annual submergence had hitherto provided. This has resulted in continuing weed and willow growth taking place, necessitating an annual clean-up operation to encourage the breeding bird species. Common Terns have bred successfully for three years and Ringed Plovers and Oystercatchers also find the islands attractive, with equal success. Management of the islands will now be an annual commitment. The south-western corner, which is largely covered by an expanse of hawthorn scrub at various stages of development, provides an excellent breeding site for the scrub-loving species. Some thinning has taken place in order to prevent the hawthorns from becoming too dense. This will help the ground flora already present and perhaps encourage other species to colonise.

The other major site for attention is the Great Crested Newt pond, another casualty of the low rainfall and hot summers. Three years in succession, the pond has dried out before the newts' breeding cycle was completed. Permission was granted to excavate the pond, which had silted up over the years and put a liner into it. The work began in January 1991 but before the liner was installed, heavy rain filled the pond and work was halted. However, the newts bred successfully that year, although the pond dried up in August. A reassessment of the pond site was made in October 1991 as certain technological features came to light which deemed the old pond unsuitable to take a liner. A further approach was made to the owners to allow the creation of a new pond adjacent to the present one and permission was granted. The work was completed in August 1992 and it is hoped that both Great Crested and Smooth Newts will gradually increase as a result. Apart from a small copse, Farnham lacks mature trees and so several species of birds are absent from the area. As part of their restoration programme, Tilcon planted several hundred saplings, including ash, birch, alder and hazel. It will, however, be many years before these make an impact on the habitat. Several nesting boxes have been erected and used by Great and Blue Tits.

Kestrels, which had previously bred in an old Carrion Crow's nest on a pylon reared five young in a nest box on a telegraph pole the following season.

Raised platforms have been provided for breeding Common Terns in an attempt to prevent unintentional disturbance by Canada Geese whose non-selective grazing habits have also necessitated the erection of protective netting around the Bee Orchid site in order that they should flower and seed. All these measures have been essential in order to ensure the colonisation and survival of several species in this habitat. Management requires manpower and a number of members are recruited each winter to implement the various tasks. Derrick Mellard and his team deserve special mention for their dedication and commitment. As a result of their efforts, members are now able to enjoy the improved habitat and a greater diversity of species which have appeared as a consequence.



MYCOLOGY

Compiled by Dr. R.D. Cundall

Several visits to the site have been made and the following species identified.

In disturbed ground near the parking area, grows the Shaggy Inkcap or Lawyer's Wig. The Blackening Wax Cap is at first, scarlet in colour and scattered conspicuously over the sandy soil. The Poison Pie grows plentifully around some birch bushes. *Lactarious pubescens* in one of the Milk Caps which lives in a mycorrhizal relationship to birch. So does *Cortinarius hemitrichus*, of which there are few Yorkshire records. Clumps of Honey Fungus or Sulphur Tuft, which appear to be growing out of the soil, arise from buried bits of wood. The Beefsteak Fungus grows on the oak tree near the hide. Surprisingly, it is also found in the grass beside the road and nearby are big clumps of the polypore *Heteroporus biennis*; both must be growing from hidden stumps of trees which formerly stood there.

A list of species identified to date, classified according to **S. Buczacki** in his *Fungi of Britain and Europe* (1989) is published below.

AGARICALES

Tricholomataceae

Clitocybe rivulosa	
Lepista nuda	**Wood Blewit**
Armillaria mellea	**Honey Fungus**
Lyophyllum connatum	
Melanoleuca melaleuca	
Collybia peronata	**Wood Woolly Foot**
Mycena oortiana	

Hygrophoraceae

Hygrocybe (Camarophyllus) niveus	**Snowy Wax Cap**
Hygrocybe nigrescens	**Blackening Wax Cap**

Russulaceae

Lactarius pubescens

Cortinariaceae

Hebeloma crustuliniforme	**Poison Pie**
Cortinarius hemitrichus	
Galerina vittaeformis	

Agaricaceae

Agaricus macrosporus

Strophariaceae

Hypholoma fasciculare	**Sulphur Tuft**

Coprinaceae

Coprinus comatus	**Shaggy Ink Cap**
Coprinus atramentarius	
Lacrymaria velutina	**Weeping Widow**
Psathyrella multipedata	

APHYLLOPHORALES

Clavariaceae

Clavaria argillacea	**Moor Club**

Fistulinaceae

Fistulina hepatica	**Beefsteak Fungus**

Polyporaceae

Heteroporus biennis	
Meripilus giganteus	**Giant Polypore**

LYCOPERDALES

Lycoperdaceae

Lycoperdon foetidum
Lycoperdon pyriforme
Vascellum pratense
Calvatia excipuliformis

BOTANY

Introduction by Til Mellard

Natural systems are always on the move; sometimes so slowly that the unobservant are not aware of it, but at other times, it is accelerated, often through man's interference and then it becomes apparent even to the casual observer.

Man's interference on this site in the form of gravel extraction has been profound and the resulting changes often spectacular. As the gravels and sands are of a calcareous nature, which is conducive to floral diversity, this area has always been a happy hunting ground for botanists. The last major disturbance, during landscaping, with its large-scale earth movement, has severely disrupted the natural order of the vegetation; we must therefore expect a period of time to elapse before it re-stabilises.

There have been areas so bared and flooded that they have been colonised only by Creeping Bents and fescues, whilst sedge species have grown to enormous size. One year, a limestone face was exposed and dozens of Bee Orchids sprang to life. The bare earth, which was exposed during the creation of embankments and the car park, was invaded by large numbers of field species from the neighbouring farmland, the lack of competition allowing rare annuals like Fern-grass to appear. The vegetation on the edges of the South Lake, which has been fairly closely monitored, has produced several surprising species; Sea Club-rush and Slender-leaved Pondweed, both plants of saline estuarine waters; Variegated Horsetail, usually a component of high moor vegetation in the north; Red Goosefoot, an annual from the south and east of England and Blunt-flowered Rush, locally abundant in eastern England and rare elsewhere, have been identified. The temporary nature of some colonists has been exemplified by an abundant growth of False Fox-sedge in one season, which had practically disappeared again by the next; Whorled Mint, Golden Dock, Bladder Sedge, Blue Water Forget-me-not and Trailing Tormentil.

Due to the close proximity of the Farmires area, we hope to benefit from a seed-bank potential. Pyramidal and Fragrant Orchids have already appeared. The area is a favourable habitat for members of the pea family, where their ability to fix nitrogen must be an asset in competition. One of the results is a spectacular massing of blooms, particularly of Bird's-foot-trefoil. In general terms, the South Lake vegetation can be described in the following way: the upper banks of what would have been a river-bed carry a Tall Oat rough grassland type of vegetation, essential to the life-styles of many insects and small mammals. Where the gravel beds surface, the typical thin grassland cover of short fine grasses of the Sheep's-fescue/Meadow Oat-grass type of vegetation, offers less competition to the flowering plants and this results in the floriferous mixture supporting many butterflies. In the sunken areas, the presence of temporary or permanent water encourages wetland wildlife. Tree and shrub growth gives diversity and character to the whole.

CLASSIFIED LIST compiled by Ann Mettam

The list of plant species which follows was compiled after an extensive recording programme in 1989, supplemented in 1990. For recording purposes, the land around the South Lake was divided into four sections, each from the water's edge to the boundary fence. The accompanying map indicates the location of each section.

The status of each species is based on five main categories:

Very Rare -	does not occur annually (even in small numbers)
Rare -	one clump or up to three individuals
Occasional -	two or three clumps or four to ten individuals
Frequent -	four to ten clumps or 11 to 30 individuals
Abundant -	more than ten clumps or 30 individuals

Mrs. P. Haley. Miss C. Holmes, Mrs. D. Holmes, Mrs. D. Mellard, Mrs. M. Ogilvie, Mrs. M. Thompson and Mrs. B. Wilson undertook the task of recording and their efforts are greatly appreciated.

In addition, there are records from previous years of species which .may no longer be present since the cessation of gravel extraction and others have been recorded since 1990. These are all marked with an asterisk and were supplied by Mr. and Mrs. R. Evison.

The nomenclature follows **Clapham, A.R., Tutin, T.G. and Moore, D.M.**. 1987. *Flora of the British Isles* (scientific names) and **Dony, J.G., Jury, S.L. and Perrins, F.**. 1986. *English Names of Wild Flowers*.

Variegated Horsetail *Equisetum variegatum* Large area on the west side, 1986.

Water Horsetail *E. fluviatile* Abundant on the west side.

Marsh Horsetail *E. palustre* Rare on the east side.

Field Horsetail *E. arvense* Abundant on the north side, but frequent on the east.

Adder's-tongue *Ophioglossum vulgatum* Frequent on the south and west sides.

Bracken *Pteridium aquilinum* Abundant on the east side.

Male-fern *Dryopteris filix-mas* Rare on the west side.

Meadow Buttercup *Ranunculus acris* Abundant on the east side.

Creeping Buttercup *R. repens* Abundant throughout.

Bulbous Buttercup *R. bulbosus* Rare on the east side.

Lesser Spearwort *R. flammula* Abundant on the west side.

Lesser Celandine *R. ficaria* Occasional to the west of the hide.

Common Poppy *Papaver rhoeas* * A few in 1991.

Opium Poppy *P. somniferum* * Two or three plants.

Common Fumitory *Fumaria officinalis* *

Wild Radish *Raphanus raphanistrum* *

Field Penny-cress *Thlaspi arvense* * One plant on the north side.

Shepherd's-purse *Capsella bursa-pastoris* *

Cuckooflower *Cardamine pratensis* Frequent throughout.

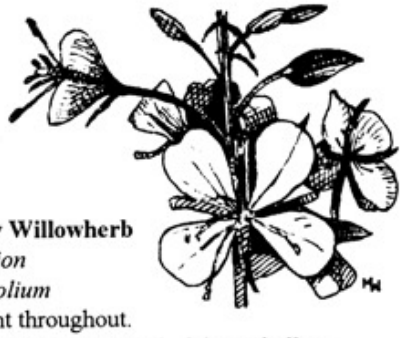
Winter-cress *Barbarea vulgaris* *

Marsh Yellow-cress *Rorippa palustris* Rare on the east side.

Garlic Mustard *Alliaria petiolata* *
Hedge Mustard *Sisymbrium officinale* * In 1991.
Weld *Reseda luteola* Rare on the east side but abundant on the north.
Field Pansy *Viola arvensis* *
Perforate St John's-wort *Hypericum perforatum* * In 1991.
Square-stalked St John's-wort *H. tetrapterum* * In 1991.
Hairy St John's-wort *H. hirsutum* Abundant on the west side but rare on the east.
Red Campion *Silene dioica* *
White Campion *S. alba* Rare throughout.
Bladder Campion *S. vulgaris* *
Ragged-Robin *Lychnis flos-cuculi* Rare along the north side.
Common Mouse-ear *Cerastium fontanum* ssp. *glabrescens* Rare on the east side and to the west of the hide.
Common Chickweed *Stellaria media* *
Greater Stitchwort *S. holostea* Rare on the east side, otherwise abundant.
Lesser Stitchwort *S. graminea* Rare on the east side, otherwise abundant.
Annual Pearlwort *Sagina apetala* *
Procumbent Pearlwort *S. procumbens* * In 1991.
Corn Spurry *Spergula arvensis* *
Fat-hen *Chenopodium album* *
Red Goosefoot *C. rubrum* Abundant to the west of the hide but rare on the east side.
Common Orache *Atriplex patula* Rare to the west of the hide.
Fairy Flax *Linum catharticum* Generally abundant throughout.
Meadow Crane's-bill *Geranium pratense* *
Cut-leaved Crane's-bill *G. dissectum* Abundant on the north side but rare to the west of the hide.
Dove's-foot Crane's-bill *G. molle* Rare on the east side.
Sycamore *Acer pseudoplatanus* Only a few in the area.
Field Maple *A. campestre* A few throughout, except on the east side.
Horse-chestnut *Aesculus hippocastanum* Very rare on the east side.
Holly *Ilex aquifolium* Occurs in the hedge.
Gorse *Ulex europaeus* Frequent to the west of the hide.
Broom *Cytisus scoparius* ssp. *scoparius* Rare on the north and west sides, very rare on the east.
Lucerne *Medicago sativa* * One plant on the north side in 1983.
Black Medick *M. lupulina* Generally abundant, except to the west of the hide.
Tall Melilot *Melilotus altissima* Frequent on the west side, but rare on the east.
Ribbed Melilot *M. officinalis* Abundant on the west side but rare on the north.
Lesser Trefoil *Trifolium dubium* Occasional on the east side.
Hop Trefoil *T. campestre* Abundant throughout.
Alsike Clover *T. hybridum* Rare on the east side.
White Clover *T. repens* Generally frequent but only occasional on the east side.
Zigzag Clover *T. medium* Rare to the west of the hide.
Red Clover *T. pratense* Generally abundant.
Kidney Vetch *Anthyllis vulneraria* Rare on the east and west sides.
Common Bird's-foot-trefoil *Lotus corniculatus* Generally abundant but only occasional on the east side.

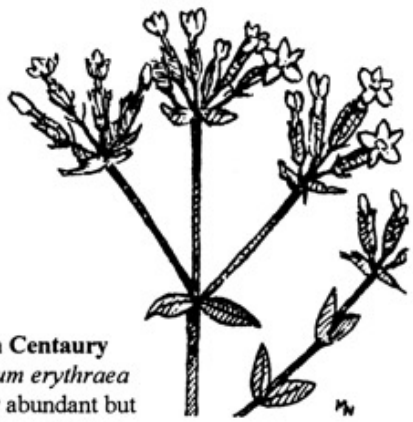
Greater Bird's-foot-trefoil *L. uliginosus* Abundant on the west side and frequent to the west of the hide.
Hairy Tare *Vicia hirsuta* Abundant on the west side, occasional elsewhere.

Tufted Vetch *V. cracca* Abundant throughout.
Bush Vetch *V. sepium* Frequent to the west of the hide, occasional on the east side.
Common Vetch *Vicia sativa* ssp. *sativa* *
Narrow-leaved Vetch *V. sativa* ssp. *nigra* Rare on the east side.
Meadow Vetchling *Lathyrus pratensis* Abundant on the west side to the hide, occasional on the east.
Meadowsweet *Filipendula ulmaria* Frequent on the west side.
Raspberry *Rubus idaeus* Very rare on the east side
Bramble *R. fruticosus* Abundant on the east and west sides.
Barren Strawberry *Potentilla sterilis* Rare on the east side.
Silverweed *P. anserina* Generally abundant, but rare on the east side.
Trailing Tormentil *P. anglica* * Few near the entrance in 1983 and 1991.
Creeping Cinquefoil *P. reptans* Frequent on the north side but only occasional on the east.
Wild Strawberry *Fragaria vesca* * At the southwest end in 1986 and 1991.
Wood Avens *Geum urbanum* Rare on the north and east sides.
Agrimony *Agrimonia eupatoria* Abundant on the west side but rare on the east.
Lady's-mantle *Alchemilla vulgaris* agg. Rare on the north and west sides.
Hairy Lady's-mantle *Alchemilla filicaulis* ssp. *vestita* * Few in the car park in 1991.
Parsley-piert *Aphanes arvensis* * In 1986 and again in the car park in 1991.
Salad Burnet *Sanguisorba minor* ssp. *minor* Frequent on the north side.
Burnet Rose *Rosa pimpinellifolia* Rare on the east side.
Dog-rose *R. canina* Occasional to the west of the hide but rare on the west side.
Blackthorn *Prunus spinosa* Abundant to the west of the hide and on the east side.
Cherry *Prunus* sp. Abundant on the west side, rare on the east.
Hawthorn *Crataegus monogyna* Generally abundant throughout.
Rowan *Sorbus.aucuparia* Occasional on the east side.
Crab Apple *Malus sylvestris* Very rare on the east side.
Great Willowherb *Epilobium hirsutum* Abundant on the north side.
Hoary Willowherb *E. parviflorum* Abundant on the west side but rare on the east.
Broad-leaved Willowherb *E. montanum* Abundant on the west side, frequent to the west of the hide but rare on the east side.
Marsh Willowherb *E. palustre* Abundant to the west of the hide.



Rosebay Willowherb *Chamerion angustifolium* Abundant throughout.
Alternate Water-milfoil *Myriophyllum alterniflorum* Abundant on the west side.
Dogwood *Cornus sanguinea* Abundant on the west side.
Ivy *Hedera helix* Abundant to the west of the hide, occasional on the east side.
Rough Chervil *Chaerophyllum temulentum* Rare on the east side
Cow Parsley *Anthriscus sylvestris* Abundant to the west of the hide, occasional on the east side.
Pignut *Conopodium majus* Rare to the west of the hide and on the north side.
Ground-elder *Aegopodium podagraria* Frequent to the west of the hide and on the north side.
Pepper-saxifrage *Silaum silaus* * One plant at the southern end in 1986.
Wild Angelica *Angelica sylvestris* Abundant on the west side.
Hogweed *Heracleum sphondylium* Generally abundant throughout.
Upright Hedge-parsley *Torilis japonica* Frequent to the west of the hide, rare on the east side.

Dog's Mercury *Mercurialis perennis* Abundant to the west of the hide.
Annual Mercury *M. annua* Rare on the east side.
Sun Spurge *Euphorbia helioscopia* *
Petty Spurge *E. peplus* *
Knotgrass *Polygonum aviculare* *
Amphibious Bistort *P. amphibium* Abundant on the east side, frequent on the west.
Redshank *P. persicaria* Abundant on the east side, occasional on the west and frequent to the west of the hide.
Pale Persicaria *P. lapathifolium* Abundant on the west side.
Black-bindweed *Fallopia convolvulus* * A few plants in 1986.
Sheep's Sorrel *Rumex acetosella* Abundant on the west side, frequent to the west of the hide.
Common Sorrel *R. acetosa* Rare on the east side.
Curled Dock *R. crispus* Rare to the west of the hide.
Broad-leaved Dock *R. obtusifolius* Occasional on the east side.
Clustered Dock *R. conglomeratus* Rare on the west side.
Golden Dock *R. maritimus* Very rare on the east side.
Common Nettle *Urtica dioica* Abundant on the north and east sides.
Wych Elm *Ulmus glabra* Rare on the east side.
Silver Birch *Betula pendula* Abundant on the east and west sides.
Alder *Alnus glutinosa* Abundant on the west side, occasional on the east.
Hazel *Corylus avellana* Occasional on the east side.
Pedunculate Oak *Quercus robur* Rare on the north side and to the west of the hide.
Black Poplar *Populus nigra* Rare on the west side.
Willow *Salix* sp. Abundant on the west side, rare on the north.
Cowslip *Primula veris* Frequent on the west side, rare to the west of the hide.
Primrose *P. vulgaris* Rare on the north side.
Scarlet Pimpernel *Anagalis arvensis* ssp. *arvensis* Rare throughout.
Ash *Fraxinus excelsior* Rare on the east side.
Wild Privet *Ligustrum vulgare* Occasional on the west side.



Common Centaury *Centaurium erythraea* Generally abundant but only occasional on the east side.
Yellow-wort *Blackstonia perfoliata* 12 plants on the north-west side in 1992.
Russian Comfrey *Symphytum x uplandicum* * One clump only.
Lungwort *Pulmonaria officinalis* Rare on the north side.
Water Forget-me-not *Myosotis scorpioides* Rare on the east side.
Wood Forget-me-not *M. sylvatica* Rare on the east side.
Field Forget-me-not *M. arvensis* Frequent on the west side.
Changing Forget-me-not *M. discolor* Abundant to the west of the hide.
Field Bindweed *Convolvulus arvensis* Abundant throughout.
Hedge Bindweed *Calystegia sepium* ssp. *sepium* Occasional to the west of the hide.
Great Mullein *Verbascum thapsus* * One plant in 1986.
Purple Toadflax *Linaria purpurea* Rare on the north side.
Common Figwort *Scrophularia nodosa* Rare on the west side.
Foxglove *Digitalis purpurea* Rare on the north side and to the west of the hide.
Pink Water-speedwell *Veronica catenata* Abundant on the west side.

Heath Speedwell *V. officinalis* Abundant to the west of the hide.
Germander Speedwell *V. chamaedrys* Rare on the east side.
Thyme-leaved Speedwell *V. serpyllifolia* * Abundant in the car park in 1991.
Common Field-speedwell *V. persica* * In 1983.

Yellow-rattle *Rhinanthus minor* Abundant throughout.
Eyebright *Euphrasia officinalis* Abundant throughout.
Red Bartsia *Odontites verna* Generally abundant but rare on the east side.
Water Mint *Mentha aquatica* Abundant on the west side and to the west of the hide, frequent on the east side.
Spear Mint *M. spicata* * In 1986.
Selfheal *Prunella vulgaris* Abundant on the north side and to the west of the hide, occasional on the east side.
Marsh Woundwort *Stachys palustris* Rare on the east side.
Hedge Woundwort *S. sylvatica* Frequent to the west of the hide, rare elsewhere.
Betony *S. officinalis* Frequent on the west side, occasional to the west of the hide.
Red Dead-nettle *Lamium purpureum* * In 1987.
White Dead-nettle *L. album* Rare on the north side.
Ground-ivy *Glechoma hederacea* Occasional on the east side.
Bugle *Ajuga reptans* * In 1986.
Greater Plantain *Plantago major* Abundant on the east side.
Ribwort Plantain *P. lanceolata* Generally abundant but frequent on the east side.
Giant Bellflower *Campanula latifolia* Rare on the west side.
Field Madder *Sherardia arvensis* * In 1983.
Crosswort *Galium cruciata* Generally abundant but rare on the east side.
Cleavers *G. aparine* Abundant to the west of the hide and frequent on the east side.
Elder *Sambucus nigra* Rare on the east and west sides.
Guelder-rose *Viburnum opulus* Frequent on the west side.
Field Scabious *Knautia arvensis* Rare on the east side.
Devil's-bit Scabious *Succisa pratensis* Large clumps in south-west corner in 1992.
Common Ragwort *Senecio jacobaea* Abundant on the north and west sides but rare on the east.
Hoary Ragwort *S. erucifolius* Abundant on the west side, occasional on the east.
Groundsel *S. vulgaris* Abundant on the north and west sides, rare on the east and occasional to the west of the hide.
Colt's-foot *Tussilago farfara* Generally abundant but rare on the east side.
Common Cudweed *Filago vulgaris* Abundant to the west of the hide.
Marsh Cudweed *Gnaphalium uliginosum* Rare on the east and west sides.
Goldenrod *Solidago virgaurea* * In 1986 and a large clump in 1991.
Canadian Goldenrod *S. canadensis* * In 1986.
Michaelmas-daisy *Aster novi-belgii* * In 1986.
Blue Fleabane *Erigeron acer* Rare in a few scattered localities; 40 plants found on north side in 1992.
Daisy *Bellis perennis* Generally abundant but rare on the east side.
Yarrow *Achillea millefolium* Abundant to the west of the hide, frequent on the north side but rare on the east.
Scentless Mayweed *Tripleurospermum inodorum* Abundant to the west of the hide but rare on the east side.
Scented Mayweed *Matricaria recutita* Abundant to the west of the hide.

Pineappleweed *M. matricarioides* Abundant to the west of the hide.

Oxeye Daisy *Leucanthemum vulgare* Generally abundant but only occasional on the east side.

Feverfew *Tanacetum parthenium* Frequent on the north side.

Mugwort *Artemisia vulgaris* * In 1986, near the entrance to the car park.

Lesser Burdock *Arctium minus* Rare on the east side.

Welted Thistle *Carduus acanthoides* Rare on the north side.

Spear Thistle *Cirsium vulgare* Abundant to the west of the hide and on the west side, frequent on the north side and occasional on the east.

Marsh Thistle *C. palustre* Abundant on the west side.

Creeping Thistle *C. arvense* Generally abundant but frequent on the east side.

Common Knapweed *Centaurea nigra* Generally abundant but frequent on the east side.

Nipplewort *Lapsana communis* * In 1986 in the car park area.

Cat's-ear *Hypochoeris radicata* Abundant on the north side, frequent on the west but rare on the east.

Autumn Hawkbit *Leontodon autumnalis* Frequent to the west of the hide but rare on the east side.

Rough Hawkbit *L. hispidus* Abundant on the west side, occasional on the east.

Lesser Hawkbit *L. taraxacoides* * In 1986.

Goat's-beard *Tragopogon pratensis* Rare on the north, east and west sides.

Perennial Sow-thistle *Sonchus arvensis* Abundant on the west side, frequent on the north, occasional on the east.

Smooth Sow-thistle *S. oleraceus* Frequent on the north side.

Prickly Sow-thistle *S. asper* Abundant to the west of the hide, occasional on the east side.

Common Hawkweed *Hieracium vulgatum* Abundant on the west side.

Mouse-ear Hawkweed *H. pilosella* * In 1986 and frequent again in 1991 on the west side.

Fox-and-cubs *H. aurantiacum* * One plant near the car park in 1986. Recorded again in 1992 on the northern bank.

Smooth Hawk's-beard *Crepis capillaris* Rare on the east side.

Common Dandelion *Taraxacum officinale* Generally abundant but only occasional on the east side.

Water-plantain *Alisma plantago-aquatica* Frequent on the west side, occasional to the west of the hide.

Bluebell *Hyacinthoides non-scripta* Abundant to the west of the hide, rare on the east side.

Toad Rush *Juncus bufonius* Abundant on the west side and to the west of the hide.

Hard Rush *J. inflexus* Abundant on the west side and to the west of the hide, frequent on the east side.

Soft-rush *Juncus effusus* Abundant to the west of the hide, frequent on the east side.

Compact Rush *J. conglomeratus* * In 1986 and a few again in 1991.

Jointed Rush *J. articulatus* Abundant on the west side, frequent on the east.

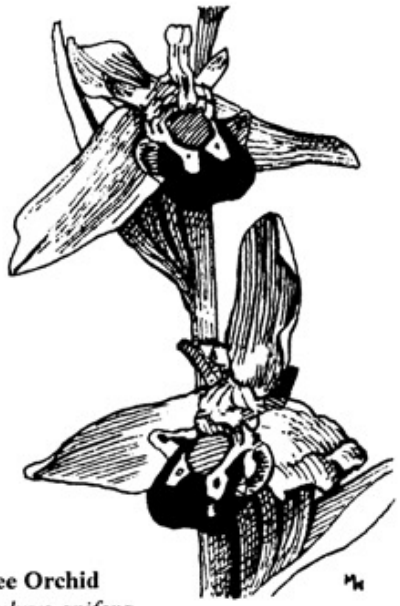
Field Wood-rush *Luzula campestris* * In 1987.

Yellow Iris *Iris pseudacorus* Frequent to the west of the hide, occasional on the west side.

Black Bryony *Tamus communis* * In 1986.

Common Twayblade *Listera ovata* Abundant on the west side.

Fragrant Orchid *Gymnadenia conopsea* Very rare on the west side.



Bee Orchid
Ophrys apifera
Annual fluctuations between very rare and frequent.

Common Spotted-orchid *Dactylorhiza fuchsii* Abundant on the west side, occasional to the west of the hide and on the north side and rare on the east.

Pyramidal Orchid *Anacamptis pyramidalis* Rare on the west side.

Lords-and-Ladies *Arum maculatum* * In 1987.

Branched Bur-reed *Sparganium erectum* * Few on the west side in 1991.

Bulrush *Typha latifolia* Abundant, except to the west of the hide.

Common Spike-rush *Eleocharis palustris* Occasional on the west side.

Sea Club-rush *Scirpus maritimus* * Large area near the hide in 1991.

Bladder-sedge *Carex vesicaria* * A clump near the pond on the west side.

Greater Pond-sedge *C. riparia* Rare on the west side.

Lesser Pond-sedge *C. acutiformis* * Frequent on the west side in 1991.

Glaucous Sedge *C. flacca* * Frequent in the south-west in 1991.

Hairy Sedge *C. hirta* * Few at the southern end.

Common Sedge *C. nigra* Rare on the east side.

False Fox-sedge *C. otrubae* Frequent to the west of the hide, occasional on the east side.

Oval Sedge *C. ovalis* * One clump at the southern end in 1990.

Tall Fescue *Festuca arundinacea* Very rare on the east side.

Red Fescue *F. rubra* Frequent on the east side.

Perennial Rye-grass *Lolium perenne* ssp. *perenne* Rare on the east side.

Fern-grass *Desmazeria rigida* * Abundant in the car park in 1991.

Annual Meadow-grass *Poa annua* Abundant on the east side.

Smooth Meadow-grass *P. pratensis* Frequent on the east side.

Cock's-foot *Dactylis glomerata* Generally abundant but frequent on the east side

Crested Dog's-tail *Cynosurus cristatus* Abundant to the west of the hide and on the west side, frequent on the east.

Hairy-brome *Bromus ramosus* * In 1983.

Soft-brome *B. hordeaceus* * In 1986.

Bearded Couch *Elymus caninus* * In 1986.

Common Couch *E. repens* * In 1986.

False Oat-grass *Arrhenatherum elatius* Abundant, except to the west of the hide.

Yellow Oat-grass *Trisetum flavescens* * Frequent to the west of the hide in 1991.

Tufted Hair-grass *Deschampsia cespitosa* Occasional to the west of the hide.

Sweet Vernal-grass *Anthoxanthum odoratum* Frequent on the west side, occasional on the east.

Yorkshire-fog *Holcus lanatus* Generally abundant, occasional on the east side.

Creeping Bent *Agrostis stolonifera* Rare on the east side.

Timothy *Phleum pratense* ssp. *pratense* Rare on the east side.

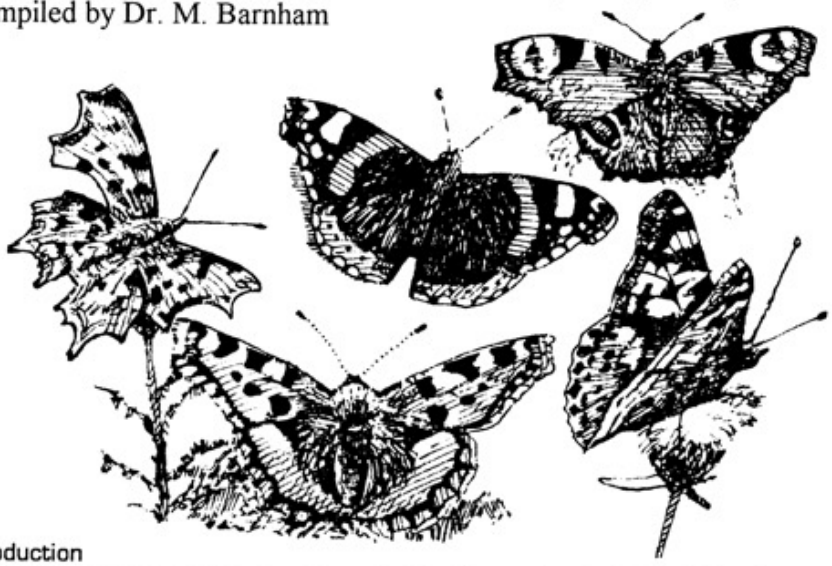
Meadow Foxtail *Alopecurus pratensis* Abundant to the west of the hide.

Marsh Foxtail *A. geniculatus* * Several plants.

Common Reed *Phragmites australis* Rare on the north side.

ENTOMOLOGY - *damselflies, dragonflies, butterflies and moths (macrolepidoptera)*

Compiled by Dr. M. Barnham



Introduction

A particular interest in recording the natural history of Farnham Gravel Pit has emerged over the last few years as the site matured and the diversity of resident fauna and flora developed. Along with the hope that the site will remain undisturbed for many years to come, arises the need to take stock of the records already made there; this has value both as a statement of the natural evolution of the site so far and as a starting point for further detailed study. Odonata and Lepidoptera records for the site and held by the Society were made mainly within the last ten years, with very few available from the 1970s or before. A good part of the list which follows is made up from casual observations throughout the seasons kindly reported to the Recorders by members.

The larger part of the list is made possible by the special efforts of Miss J.E. Atkinson and L.V. Ratliffe who operated ultra-violet and mercury vapour moth traps at the site with very productive results. A trap was run on single occasions in July 1981 and 1984 but more intensively in the 1988 and 1989 seasons (17 nights, total 41 hours operation between late May and early October) in order to achieve a species baseline for this report. The seasons of the year have still not been fully tested by trapping and other approaches, such as 'sugaring' have not yet been attempted. The status of species shown in the list and the length of the list itself, must therefore be seen as provisional. Thanks are extended to all who submitted records, particularly to those who operated the moth trap.

The list of damsel and dragonflies is short and emphasises the different ecological requirements that the various species have. The Common Blue Damselfly is often profuse but larger species have rarely been found. The gravel pit is deep, with only narrow margins of shelved banks; warmer, shallow water with a better quantity of marginal vegetation may be required for many of the species to thrive.

The situation and climate at Farnham seems favourable to a good variety of butterflies. The arrival of early summer migrants in extensive rough ground such as this may be followed by a good showing later in the year, such as occurred with the Clouded Yellow in 1983 and 1992 and Painted Lady in 1980 and 1988. The strong growth of Bird's-foot-trefoil on

previously disturbed ground supports a very healthy colony of the Common Blue, particularly on the slopes beyond the hide, at the southern end and in sheltered parts on the east and west banks. The autumn broods of Common Blue and Wall may linger in sheltered parts into the first week of October; in the late season of 1986 they persisted here until the extraordinary date of 26 October, surviving sharp frosts. The site is also home to a good colony of the Small Heath, a species which is very local in the lower ground of our district.

In the late 1980s, the White-letter Hairstreak *Satyrium w-album* was found on roadside elms only a few hundred yards to the east of the area.

The moths of Farnham Gravel Pit include a good variety of day-flying species such as the Burnets, Small Yellow Underwing, Mother Shipton and Silver Y; there are individual records of others such as Cinnabar, Chimney Sweeper, Latticed Heath and Burnet Companion but they do not yet appear to be firmly resident at the site. There is a strong colony of the Elephant Hawk-moth and a good number of notable local species has also been found to occur, including the Puss Moth, Sallow Kitten, Eyed Hawk-moth, Pale Eggar (which has been recorded in the Knaresborough area over many years), Drinker (which is also clearly established in grassy farming lanes around Scotton, to the west of the site), Barred Rivulet (which feeds on the Red Bartsia) and Sloe Pug. The resident colony of Bulrush Wainscot could be a significant source for the wandering insects which have been trapped from time to time around Knaresborough and Scotton. Ruby Tiger appears to be resident at the site, as it is in similar terrain in other parts of the district such as at Ripon (Quarry Moor) and Ellington Banks; otherwise this species seems largely confined to our higher moorlands. Other moths most regularly found on moors and heaths and now turning up at Farnham include the Heath Rustic, Antler and Chevron; it is not yet known if they are resident at the gravel pit.

Given careful management the prospects for further insect diversity at Farnham must be good. Recent tree planting is likely to result in some reduction in the numbers of butterflies and it will be important to preserve generous open areas in sheltered parts of the site for them. Common Blue butterflies and Burnet moths depend upon a flourishing growth of Bird's-foot-trefoil and it is not clear how long the plant will remain vigorous at the site. Encroachment of hawthorn scrub at the southern end will need some control but a good growth of maturing trees and bushes should help the dragonflies; recently excavated separate shallow ponds at the site may also enhance the prospects for this group of insects. A recent planned introduction of Dingy Skipper butterflies may eventually be successful. A carefully studied site such as this is very suitable for planned introduction experiments but permission should be sought from officers of the Society and the details fully recorded.

With careful management, preservation and development, there is a good chance that Farnham Gravel Pit will become a steadily richer oasis and refuge for our local wildlife.

ODONATA

The nomenclature and order follows **Hammond, C.O.**. 1983. *The Dragonflies of Great Britain and Ireland*

Coenagriidae

Azure Damselfly *Coenagrion puella* Occurs in small numbers.

Common Blue Damselfly *Enallagma cyathigerum* Usually very common.

Blue-tailed Damselfly *Ischnura elegans* Regular in small to moderate numbers.

Lestidae

Emerald Damselfly *Lestes sponsa* Four males and a female on 31 August 1991, the female observed ovipositing on 1 September.

Calopterygidae

Banded Demoiselle *Calopteryx splendens* One seen on 13 June 1992 flying across the South Lake which was subsequently taken by a Sand Martin.

Aeshnidae

Southern Hawker *Aeshna cyanea* One in July/August 1982, one on 26 August 1991 with a male on 1 and 7 September, a pair on 8/9 September (the female ovipositing) 1991 and three in August/September 1992.

Brown Hawker *Aeshna grandis* A male on 18 August 1991, with three on 20 August and a female ovipositing on 26 August 1991.

Common Hawker *Aeshna juncea* One observed ovipositing on 8 September 1991.

Emperor Dragonfly *Anax imperator* One closely observed on 25 July 1984.

Four-spotted Chaser *Libellula quadrimaculata* A male on 11 June 1989 and a female ovipositing on 27 June 1992.

Libellulidae

Black Darter *Sympetrum danae* A pair seen on 15 August 1992 (the female later ovipositing) and a male on 23 August 1992.

Common Darter *Sympetrum striolatum* Regular in small numbers; up to 100 were sighted in 1982 and 20 noted on 20 August 1991.

MACROLEPIDOPTERA

The nomenclature and order (showing species list number) follows **Bradley, J.D. and Fletcher, D.S.**, 1979. *British Butterflies and Moths (A Recorder's Log Book or Label List).*

Hepialidae

Ghost Swift *Hepialus humuli* (14) Seven trapped June/July 1989.

Common Swift *Hepialus lupulinus* (17) Four trapped in June 1989.

Zygaenidae

Six-spot Burnet *Zygaena filipendulae* (169) First recorded in 1987 (two), three in July 1988 and 50 in July 1989.

Narrow-bordered Five-spot Burnet *Zygaena lonicerae* (171) First recorded in 1976; regular and usually very common, subsequently thousands in July 1981.

Hesperiidae

Small Skipper *Thymelicus sylvestris* (1526) Very common in recent years.

Large Skipper *Ochlodes venata* (1531) Often common.

Dingy Skipper
Erynnis tages (1532)
19 adults were released in May 1991 and small numbers were observed in May 1992.

Pieridae

Clouded Yellow *Colias croceus* (1545) Several in August/September 1983, including the pale female form helice. More recently, on 26 May and three during July and August 1992.

Brimstone *Gonepteryx rhamni* (1546) One wandering male captured whilst feeding on clover, 16 June 1983.

Large White *Pieris brassicae* (1549) Small to moderate numbers.

Small White *Pieris rapae* (1550) Small numbers, increased when there are attractive crops in adjacent fields.

Green-veined White *Pieris napi* (1551) Small numbers.

Orange Tip *Anthocharis cardamines* (1553) Regular in small numbers.

Lycaenidae

Green Hairstreak *Callophrys rubi* (1555) One on 6 May 1990.

White-letter Hairstreak *Satyrium w-album* (1558) One seen on the east side on 16 July 1992.

Small Copper *Lycaena phleas* (1561) One of our stronger colonies but much reduced in the late 1980s.

Common Blue *Polyommatus icarus* (1574) One of our strongest colonies, often numbering hundreds (maximum recorded 370 on 25 June 1988); a small second brood regularly occurs in September.
Holly Blue *Celastrina argiolus* (1580) One seen on 25 August 1991 and singles on 19 May, 27 July, 3 and 28 August and 6 September 1992.

Nymphalidae
Red Admiral *Vanessa atalanta* (1590) Occasional in most years.
Painted Lady *Cynthia cardui* (1591) Regularly found in the 'good years' for migrant species.
Small Tortoiseshell *Aglais urticae* (1593) Regular, sometimes plentiful around thistles.
The Peacock *Inachis io* (1597) Regular, occasionally plentiful; up to 60 in August 1992.
The Comma *Polygonia c-album* (1598) A single on 19 July 1992 was the first with a maximum of four seen up to October 1992.

Satyridae
The Wall *Lasiommata megera* (1615) Two broods; moderate numbers, sometimes plentiful.
The Gatekeeper *Pyronia tithonus* (1625) Four seen in August 1991 and a maximum of 20 on 27 July 1992.
Meadow Brown *Maniola jurtina* (1626) Very common.
Small Heath *Coenonympha pamphilus* (1627) A strong colony, sometimes numbering hundreds.
The Ringlet *Aphantopus hyperantus* (1629) First recorded in 1987; maintaining itself in small to moderate numbers during 1988 and 1989, increasing in 1991 with numbers exceeding 100 on 19 July 1992.

Lasiocampidae
Pale Eggar *Trichiura crataegi* (1632) One trapped on 19 August 1989.
The Drinker *Philudoria potatoria* (1640) Adults in July/August 1986, 1988 and 1989 (when 17 were trapped); a larva found in the grass in May 1989.

Drepanidae
Oak Hook-tip *Drepana binaria* (1646) One trapped on 23 August 1988.
Chinese Character *Cilix glaucata* (1651) Trapped June - August: 1984, 1988 (two) and 1989 (three).

Thyatiridae
Buff Arches *Habrosyne pyritoides* (1653) Singles in June and July 1989.

Geometridae
Common Emerald *Hemithea aestivaria* (1669) One on 12 July 1989.
Riband Wave *Idaea aversata* (1713) Regular in July and August.
Flame Carpet *Xanthorhoe designata* (1722) Two taken on 23 May 1989.
Dark-barred Twin-spot Carpet *Xanthorhoe ferrugata* (1725) One on 6 August 1989.
Silver-ground Carpet *Xanthorhoe montanata* (1727) Regular in June.
Garden Carpet *Xanthorhoe fluctuata* (1728) Four taken in July, September 1989.
Shaded Broad-bar *Scotopteryx chenopodiata* (1732) Regular in July/August 1988 (five) and 1989 (nine).
Common Carpet *Epirrhoe alternata* (1738) Good numbers collected in July/August 1988 and 1989.
Yellow Shell *Camptogramma bilineata* (1742) Occasionally disturbed from the grass by day.
The Phoenix *Eulithis prunata* (1754) One trapped in July 1984.
The Chevron *Eulithis testata* (1755) Singles in September 1988 and August 1989.
Northern Spinach *Eulithis populata* (1756) One on 7 August 1988.
Barred Straw *Eulithis pyraliata* (1758) Noted on 31 July 1981.
Small Phoenix *Ecliptopera silaceata* (1759) Two taken in August 1989.
Dark Marbled Carpet *Chloroclysta citrata* (1762) One on 6 August 1988.
Common Marbled Carpet *Chloroclysta truncata* (1764) Noted in September 1988 and June 1989.
Barred Yellow *Cidaria fulvata* (1765) Taken in July 1984 and 1989.

Green Carpet *Colostygia pectinataria* (1776) One on 7 August 1988.
July Highflier *Hydriomena furcata* (1777) Captured in July/August: 1988 (seven) and 1989 (five).
November Moth *Epirrita dilutata* (1795) One on 16 October 1988.
Small Rivulet *Perizoma alchemillata* (1803) August 1988 (two) and July 1989 (two).
Barred Rivulet *Perizoma bifaciata* (1804) Noted on 17 August 1988 (three) and singles taken on 19 July and 6 August 1989.
Tawny-speckled Pug *Eupithecia icterata* (1838) One taken in August 1989.
Sloe Pug *Chloroclystis chloerata* (1859) One trapped on 6 August 1989 (identification confirmed at Rothamsted).
Treble-bar *Aplocera plagiata* (1867) One on 6 August 1989.
Chimney Sweeper *Odezia atrata* (1870) A few noted on 10 June 1982.
The Magpie *Abraxas grossulariata* (1884) On the wing in July and August: 1984, 1988 and 1989.
Clouded Border *Lomaspilis marginata* (1887) Regularly taken in June and July.
Latticed Heath *Semiothisa clathrata* (1894) One noted in the grassland on 2 July 1985.
Brimstone Moth *Opisthograptis luteolata* (1906) Taken in July/August: 1988 and 1989.
Canary-shouldered Thorn *Ennomos alniaria* (1913) One in September 1988; six taken in July/August 1989.
Dusky Thorn *Ennomos fuscantaria* (1914) Two on 23 September 1988 and two on 6 August 1989.
Early Thorn *Selenia dentaria* (1917) Two on 24 July 1984.
Scalloped Oak *Crocallis elinguaria* (1921) One taken on 24 July 1984.
Peppered Moth *Biston betularia* (1931) Singles in July 1984 and June 1989.
Willow Beauty *Peribatodes rhomboidaria* (1937) Singles in July 1984 and August 1988.
Mottled Beauty *Alcis repandata* (1941) Taken on 31 July 1981.
Bordered White *Bupalus piniaria* (1954) Two were trapped in July 1989.
Common White Wave *Cabera pusaria* (1955) Taken in June/July 1989 and earlier years.
Barred Red *Hylaea fasciaria* (1962) One taken on 24 July 1984.

Sphingidae

Eyed Hawk-moth *Smerinthus ocellata* (1980) Ova found on sallow 23 June 1977; one adult trapped on 17 June 1989.
Poplar Hawk-moth *Laothoe populi* (1981) Adults trapped June to August 1988 and 1989.
Elephant Hawk-moth *Deilephila elpenor* (1991) Larvae sometimes found on willowherb in August and September; 14 adults trapped in mid-June 1989.

Notodontidae

Puss Moth *Cerura vinula* (1995) Eggs found on sallow and poplar mid-June 1977 (and subsequently), larvae in July/August; adults occasionally found in mid-June.

Sallow Kitten *Furcula furcula* (1997) Singles taken on 14 and 17 June 1989.
Iron Prominent *Notodonta dromedarius* (2000) One on 17 August 1989.
Pebble Prominent *Eligmodonta ziczac* (2003) Trapped in July/August: 1988 (one) and 1989 (two).
Lesser Swallow Prominent *Pheosia gnoma* (2006) One on 23 August 1988.
Swallow Prominent *Pheosia tremula* (2007) One on 17 June 1989.
Coxcomb Prominent *Ptilodon capucina* (2008) Taken from late May to mid-August: 1984 (one), 1988 (two) and 1989 (four).
Pale Prominent *Pterostoma palpina* (2011) Three captured in May and June 1989.

Lymantriidae

The Vapourer *Orgyia antiqua* (2026) In several recent years an occasional male has been noted in late summer.

Pale Tussock *Calliteara pudibunda* (2028) Singles trapped on 19 May and 14 June 1989.

Yellow Tail *Euproctis similis* (2030) Regular: four taken in July 1989.

Arctiidae

Common Footman *Eilema lurideola* (2050) One on 19 July 1989.

Garden Tiger *Arctia caja* (2057) One trapped on 24 July 1984.

White Ermine *Spilosoma lubricipeda* (2060) Eighteen collected between 23 May and 17 June 1989.

Buff Ermine *Spilosoma luteum* (2061) Four taken in May and June 1989.

Ruby Tiger *Phragmatobia fuliginosa* (2064) Four trapped in August 1988 and seven between 12 July and 6 August 1989.

The Cinnabar *Tyria jacobaeae* (2069) Two adult moths recorded on 22 June 1983 and 20+ caterpillars noted on 19 July 1992.

Noctuidae

Turnip Moth *Agrotis segetum* (2087) One on 14 June 1989.

Heart and Club *Agrotis clavis* (2088) One taken on 23 May 1989.

Heart and Dart *Agrotis exclamationis* (2089) Four trapped in July 1984 and 13 in May to July 1989.

The Flame *Axylia putris* (2098) Taken in June and July: 1984 (one) and 1989 (three).

Flame Shoulder *Ochropleura plecta* (2102) Taken June to September: 1984 (one), 1988 (two) and 1989 (nine).

Dotted Rustic *Rhyacia simulans* (2105) One on 23 August 1988.

Large Yellow Underwing *Noctua pronuba* (2107) Very common June to September: 327 caught in 1988.

Lesser Yellow Underwing *Noctua comes* (2109) Taken July to September: 1988 (16) and 1989 (six).

Lesser Broad-bordered Yellow Underwing *Noctua janthina* (2111) On the wing in July and August: 1988 (seven) and 1989 (three).

Least Yellow Underwing *Noctua interjecta* (2112) Nine taken in August 1988 and five in July/August 1989.

Double Dart *Graphiphora augur* (2114) Singles on 17 June and 12 July 1989.

True Lover's Knot *Lycophotia porphyria* (2118) One on 7 August 1988.

Ingrailed Clay *Diarsia mendica* (2120) Taken June to August: 1988 (one) and 1989 (four).

Small Square-spot *Diarsia rubi* (2123) Common May to September: 1988 (40) and 1989 (47).

Six-striped Rustic *Xestia sexstrigata* (2133) Common in July/August: 1988 (67) and 1989 (nine).

Square-spot Rustic *Xestia xanthographa* (2134) Common July to September: 1988 (63) and 1989 (105).

Heath Rustic *Xestia agathina* (2135) One taken on 29 August 1988.

The Gothic *Naenia typica* (2136) One on 17 August 1988.

Dot Moth *Melanchra persicariae* (2155) Occasional in July.

Pale-shouldered Brocade *Lacanobia thalassina* (2158) Four taken in May/June 1989.

Bright-line Brown-eye *Lacanobia oleraceae* (2160) Moderate numbers June and July (five in 1989).

Broom Moth *Ceramica pisi* (2163) Seventeen were trapped from mid-May to mid-June 1989.

Broad-barred White *Hecatera bicolorata* (2164) One on 23 May 1989.

The Lychnis *Hadena bicruris* (2173) One on 17 June 1989.

The Antler *Cerapteryx graminis* (2176) Two on 6 August 1989.

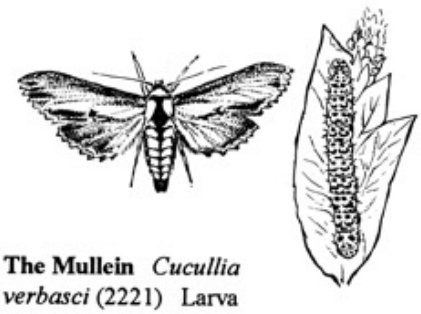
Feathered Gothic *Tholera decimalis* (2178) One on 19 August 1989.

Hebrew Character *Orthosia gothica* (2190) One on 19 May 1989.

Brown-line Bright-eye *Mythimna conigera* (2192) Occasional in July.

The Clay *Mythimna ferrago* (2193) Fairly common June to August: 13 taken in 1989.

Smoky Wainscot *Mythimna impura* (2198) Numerous in July and August: 75 taken in 1989.
Common Wainscot *Mythimna pallens* (2199) July to September: 1984 (five), 1988 (one) and 1989 (eight).
Shoulder-striped Wainscot *Mythimna comma* (2205) Nine collected in June 1989.



The Mullein *Cucullia verbasci* (2221) Larva found on Figwort in 1977.
Grey Chi *Antitype chi* (2254) One on 23 August 1988.
Red-line Quaker *Agrochola lota* (2263) One on 21 September 1989.
Brown-spot Pinion *Agrochola litura* (2266) One on 29 August 1989.
Beaded Chestnut *Agrochola lychnidis* (2267) On the wing in September: 1988 (three) and 1989 (three).
Centre-barred Sallow *Atethmia centrago* (2269) One on 23 August 1988.
Lunar Underwing *Omphaloscelis lunosa* (2270) One on 21 September 1989.
Barred Sallow *Xanthia aurago* (2272) One on 21 September 1989.
The Sallow *Xanthia icteritia* (2274) Found in August/September: 1988 (four) and 1989 (five).
Alder Moth *Acronicta alni* (2281) One taken on 23 May 1989.
Mouse Moth *Amphipyra tragopoginis* (2299) Two on 29 August 1989.
Straw Underwing *Thalpophila matura* (2303) One trapped on 24 July 1984.
Small Angle Shades *Euplexia lucipara* (2305) One on 17 June 1989.
Angle Shades *Phlogophora meticulosa* (2306) Regularly found in variable numbers from June to September.
The Dun-bar *Cosmia trapezina* (2318) Singles in July 1984 and August 1988.
Dark Arches *Apamea monoglypha* (2321) Rather common: 1984 (20), 1988 (15) and 1989 (15).
Light Arches *Apamea lithoxylaea* (2322) Seen in June and July: 1984 (one) and 1989 (three).
Clouded-bordered Brindle *Apamea crenata* (2326) Sixteen collected in May and June 1989.
Dusky Brocade *Apamea remissa* (2330) July 1984 (one) and June 1989 (two).
Small Clouded Brindle *Apamea unanimis* (2331) Three taken in mid-June 1989.
Rustic Shoulder-knot *Apamea sordens* (2334) Nine taken in mid-June 1989.
Marbled Minor *Oligia strigilis* (2337) Four on 17 June 1989.
Middle-barred Minor *Oligia fasciuncula* (2340) Common: 50 trapped in mid-June 1989.
Rosy Minor *Mesoligia literosa* (2342) Two taken in August 1988 and one in July 1989.
Common Rustic *Mesapamea secalis* (2343) Fairly common in July/August: 1984 (seven), 1988 (31) and 1989 (15).
Small Dotted Buff *Photedes minima* (2345) Recorded in July 1984 (one) and 1989 (three).
Dusky Sallow *Eremobia ochroleuca* (2352) Noted in July and August: 1983 (one), 1984 (six) and 1988 (five).
Flounced Rustic *Luperina testacea* (2353) August records in 1988 (one) and 1989 (seven).
Rosy Rustic *Hydraecia micacea* (2361) Trapped August to October: 1988 (11) and 1989 (11).
Frosted Orange *Gortyna flavago* (2364) September records in 1988 (two) and 1989 (one).
Bulrush Wainscot *Nonagria typhae* (2369) Dr. C. Rutherford (1965) reported larvae and pupae in bulrushes in gravel pits in this area; single adults trapped in August/ September 1988 and August 1989.
The Rustic *Hoplodrina blanda* (2382) One on 7 August 1988.
Small Mottled Willow *Spodoptera exigua* (2385) One on 12 July 1989.

Mottled Rustic *Caradrina morpheus* (2387) Taken in July 1984 (eight) and July 1989 (three).
Small Yellow Underwing *Panemeria tenebrata* (2397) Sometimes seen visiting flowers by day in May.
Burnished Brass *Diachrysia chrysitis* (2434) Trapped in June and August 1989 (three).
Lempke's Gold Spot *Plusia putnami* (2440) One taken on 19 July 1989.
Silver Y *Autographa gamma* (2441) Regular, sometimes common in autumn: visiting flowers by day or trapped at night.
Beautiful Golden Y *Autographa pulchrina* (2442) Six trapped in May/June 1989.
Gold Spangle *Autographa bractea* (2444) Six taken in August 1988 and one in July 1989.
Mother Shipton *Callistege mi* (2462) Singles flying by day in 1983, 1986 and seven on 29 May 1989.
Burnet Companion *Euclidia glyphica* (2463) Noted on 9 July 1986.
The Herald *Scoliopteryx libatrix* (2469) One trapped on 17 June 1989.
The Snout *Hypena proboscidalis* (2477) Three taken in July/August 1989.

INSECTS, INVERTEBRATES AND PLANT GALLS

Compiled by John R. Mather from records supplied by R. Marshall

Some investigations into these groups have been carried out during the last few years and a list of those species which have been identified is appended below. This list makes no attempt to indicate the preferred habitats or the relative abundance of any of the lifeforms and is published here for interest and to act as a baseline for any future and more detailed studies. Quite obviously, there are many more species to be located and identified, particularly the beetles and the flies.

INSECTS

ORTHOPTERA
Common Field Grasshopper *Chorthippus brunneus*

DERMAPTERA
Common Earwig *Forficula auricularia*

HOMOPTERA
Black and Red Froghopper *Cercopis vulnerata*

MEGALOPTERA
Alder Fly sp. *Sialis sp.*

MECOPTERA
Scorpion Fly sp. *Panorpa sp.*

TRICHOPTERA
Caddisfly sp. *Phryganea sp.*

DIPTERA
Spotted Cranefly *Nephrotoma appendiculata*
St. Mark's Fly sp. *Bibio sp.*
Hoverfly *Platycheirus albimanus*
Hoverfly *Platycheirus manicatus*
Hoverfly *Platycheirus peltatus*
Hoverfly *Pyrophaena granditarsa*
Hoverfly *Chrysotoxum bicinctum*
Hoverfly *Episyrphus balteatus* (Marmalade Fly)
Hoverfly *Sphaerdphoria menthastri (group)*
Hoverfly *Sphaerdphoria scripta*
Hoverfly *Syrphus ribesii*
Hoverfly *Cheilosia illustrata*
Hoverfly *Rhingia campestris* ("Heineken Fly")
Hoverfly *Eristalis arbustorum*
Hoverfly *Eristalis horticola*
Hoverfly *Eristalis tenax*
Hoverfly *Syritta pipiens*

HYMENOPTERA
Birch Sawfly (larvae) *Croesus septentrionalis*
Ruby tailed Wasp *Chrysis ignita*
Early Mining Bee *Andrena haemorrhoa*
Homeless or Nomad Bee sp. *Nomada sp.* (parasite on mining bees)
Bumble Bee, White-tailed *Bombus lucorum*
Bumble Bee, Buff-tailed *Bombus terrestris*
Bumble Bee, Red-tailed *Bombus lapidarius*

COLEOPTERA
Sexton Beetle *Nicrophorus humator*
Devil's coach horse *Staphylinus olens*
Beetle *Malachius bipustulatus*
Small coccinellid *Coccidula rufa*
Kidney spot ladybird *Chilocorus renipustulatus*
Pine ladybird *Exochomus 4-pustulatus*
Water ladybird *Anisosticta 19-punctata*
2 spot ladybird *Adalia 2-punctata*
10 spot ladybird *Adalia 10-punctata*
7 spot ladybird *Coccinella 7-punctata*
Cream spot ladybird *Calvia 14-guttata*
22 spot ladybird *Psyllobora 22-punctata*
14 spot ladybird *Propylea 14-punctata*
Cardinal beetle *Pyrochroa serraticornis*
Wasp beetle *Clytus arietis*
Weevil *Liophloeus tessulatus (?)*

FRESHWATER LIFE
Green Hydra *Hydra viridissima*
Fish Leech *Piscicola geometra*
Leech *Glossiphonia complanata*
Leech *Helobdella stagnalis*
Horse Leech *Haemopis sanguisuga*
Ear Snail *Lymnaea auricularia*
Great Pond Snail *Lymnaea stagnalis*
Seed Shrimps spp. *Ostracoda spp.*
Water Fleas spp. *Cyclops spp.*
Water hog Louse sp. *Asellus sp.*
Mayfly (nymph) sp. *Caenis sp.*
Mayfly (nymph) sp. *Cloeon sp.*
Pond Skater sp. *Gerris sp.*
Lesser Water boatman sp. *Corixa sp.*
Great Water boatman *Notonecta glauca*
Phantom Midge (larvae) sp. *Chaeoborus sp.*
Non-biting Midge (larvae) sp. *Chironomid sp.*
Water Beetle sp. *Haliplus sp.*
Great Diving Beetle (female) sp. *Dytiscus sp.*

OTHER INVERTEBRATES
Great Black Slug *Arion ater*
Spider *Nuctenea cornuta*
Garden cross Spider *Aranea diadematа*
Common shiny Woodlouse *Oniscus asellus*

PLANT GALLS
Marble Gall on oak *Andricus kollari*
Cola nut Gall on oak *Andricus lignicola*
Knopper Gall on oak *Andricus quercuscalicis*
Robin's Pincushion on rose *Diplolepis rosae*
Leaf edge Roll on hawthorn *Eriophyes goniothoras*
Postule Gall on sycamore *Eriophyes macrorhyncha macrorhyncha*
Common spangle Gall on oak *Neuroterus quercusbaccarum*
Oval leaf Gall on willow *Pontania viminalis*
Jumping plant Louse on ash *Psyllopsis fraxini*

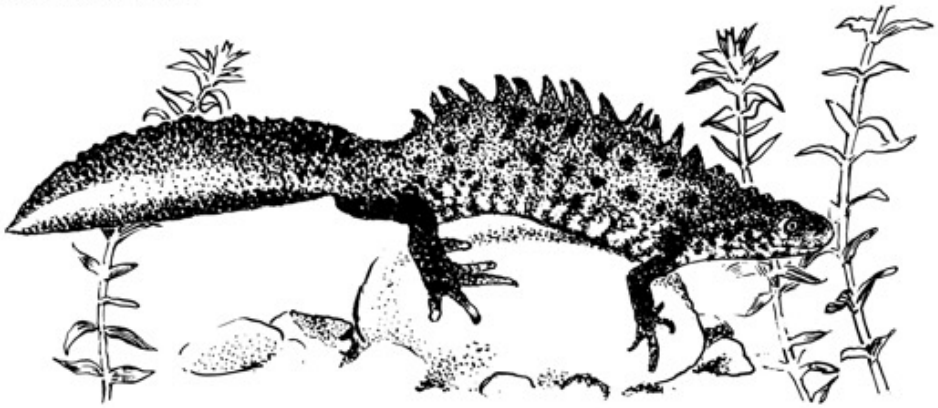
FISHES

Written from information supplied by M. Cook of the Harrogate and Claro Anglers' Association.

Nomenclature follows **Wheeler, A.**, 1969. *Fishes of the British Isles and North-west Europe*. Macmillan.

The two lakes have a total surface area of 85 acres and have been regularly stocked with fish by the angling association since the mid-1960s. The north lake was initially stocked with **Perch**, *Perca fluviatilis* (some now weighing up to three pounds) and **Roach**, *Rutilus rutilus*, followed by **Common Bream**, *Abramis brama*, **Chubb**, *Leuciscus cephalus* and **Gudgeon**, *Gobio gobio*. **Pike**, *Esox lucius* has not been introduced.

The south lake has both **Brown** and **Rainbow Trout**, *Salmo trutta dario* and *Salmo gairdneri* and is re-stocked annually. Some **Tench**, *Tinca tinca* have been found in this lake and are being transferred to the northern lake whenever possible. Large numbers of **Three-spined Sticklebacks**, *Gasterosteus aculeatus* occur in both lakes and are an important food supply for grebes, Common Terns and Kingfishers.



AMPHIBIANS

Compiled by John R. Mather from records supplied by R. Elliott

Farnham is fortunate to have an established colony of Great Crested Newts in an old pond on the western side, where Smooth Newts occur also. Both Common Toads and Common Frogs are numerous and breed successfully in most suitable habitats.

A newly created pond should attract all the recorded amphibians in due course.

Great Crested Newt *Triturus cristatus* A thriving colony exists and counts at night by torchlight have revealed up to 65 individuals.

Smooth Newt *Triturus vulgaris* Fairly common in the newt pond.

Common Toad *Bufo bufo* Counts of spawning animals around the main south lake and also in the newt pond have shown several hundreds to be present during April each year.

Common Frog *Rana temporaria* Common in all suitable shallow water habitat.

ORNITHOLOGY

Introduction by June E. Atkinson

Since record-keeping at Farnham Gravel Pit began during the 1950s, a total of 184 species has been recorded. In the early days, passage migrants would use the area for resting and feeding and several species started breeding there. Sand Martins colonised the freshly excavated banksides, both Little and Great Crested Grebes nested amongst the newly emerging aquatic vegetation and Mallards, Tufted Ducks, Moorhens and Coots soon hatched their broods around the lakeshore. Breeding passerines were relatively scarce in the bare, newly disturbed habitat but a few pairs of Willow Warblers, Reed Buntings and Yellowhammers nested around the perimeter. As the scrub layer developed, species such as Common Whitethroat, Lesser Whitethroat and Sedge Warbler moved in and the commoner resident species such as Blackbird, Robin and Dunnock were soon to follow.

The sandy washing area to the rear of where the hide now stands provided an excellent habitat for passage waders but this was restored to grassland during the early 1980s. It is now used mainly for hay-cropping and also for sheep and cattle grazing. It does, however, have its compensations in that it provides suitable nesting ground for Lapwings, Meadow Pipits and Skylarks. During the winter months it is favoured by feeding flocks of Greylag and Canada Geese which occasionally attract small numbers of other grey geese such as White-fronted and also the odd Barnacle or Brent. The south lake with its islands and surrounding vegetation, has more in the way of breeding birds. The larger adjacent yachting lake has little emergent vegetation or scrub cover around its margins and is used for sailing on most weekends. Nevertheless, this large area of open water is favoured by vagrant waterbirds and both Red-throated and Great Northern Divers and also Slavonian Grebes have visited here in recent years. During the winter months, it hosts a large gull roost consisting mainly of Black-headed with fewer Common, Herring and Great Black-backed, the combined assemblies of which sometimes attract an occasional Iceland or Glaucous Gull.

Both lakes are fished, the south lake being stocked with both rainbow and brown trout and the yachting lake being used for coarse fishing. The close proximity of Hay-a-Park Gravel Pit and the Staveley lagoon, results in a certain amount of interchange between waters, particularly noticeable being the movements of wintering Coots and the few Common Terns which can be observed during the breeding season as they fly to and from Hay-a-Park where they prefer to fish.

The islands in the south lake are an important feature, providing suitable habitat for breeding geese, ducks, terns and some waders. They are also used as loafing areas and the open edges are frequented by passage waders. These small islands were present in the 1970s when the water was pumped out for gravel washing. When this ceased in the early 1980s, the water level gradually rose until only the largest island was visible, the others appearing merely as shallow spits during the late summer. Since the late 1980s, there has been a noticeable fall in the water level which has provided some benefit in that the islands are now much larger and provide a substantial breeding area for several species. With the stabilisation of the sand banks around the edges of the water, which are now overgrown, and also the disappearance of the sand-heaps which were so much a feature of the working gravel pit, Sand Martins have been lost as a breeding species but the recent colonisation by a few pairs of Common Terns, aided by the provision of raised platforms to protect their eggs from trampling by Canada Geese and also, to a lesser extent, from ground predators, indicates how habitat management can be beneficial to some species.

The number of breeding species recorded at the site now numbers 50 and others may be tempted to stay and nest by careful habitat

management which will be on-going to ensure that Farnham Gravel Pit continues to be a site of local as well as County importance.

Some Habitat and Bird Changes

by Robert Evison

Working gravel pits are very much dynamic environments and Farnham was no exception. In many respects they could be described as hostile, barren and constantly changing landscapes but often they provide the perfect conditions for a number of species.

It was just such a species, the Little Ringed Plover, that chose Farnham Gravel Pits as its first breeding side in the Society's area and by 1970 up to three pairs had settled down to nest, attracted by the extensive areas of disturbed stony ground. Another early feature of the gravel pits was the existence of a number of suitable sandbanks for nesting Sand Martins and by 1965 there were several colonies. The largest was situated on the south-west bank and contained around 300 pairs. The site now exists as an area of flooded willows. From time to time banks would collapse and become unsuitable but others were always being created as new areas were being worked. When sheer bank sides were scarce, Sand Martins would nest in the huge stock piles of grit-sand around the plant. Now, after the restoration and grading of the bank sides, there are no longer any suitable sites.

Silt beds, much favoured by gulls and waders, particularly for bathing and loafing, is another type of habitat which changes dramatically as soon as gravel extraction and treatment ceases. Water, bearing silt from the washing plant, which is constantly flowing over already existing silt deposits, prevents the establishment of any substantial vegetation. Once this flow of water stops, willow and rush species are quick to colonise. In the early 1960s, up to 200 Curlews would assemble to bathe and rest on the extensive silt beds at Farnham each spring. March was the month of peak passage and many birds were netted and ringed whilst flighting into the pits at dusk.

Another familiar sight, both in spring and autumn, was a daily concentration of Lesser Black-backed Gulls. In late spring the majority would be immatures, but a good many adults could be seen in autumn, particularly in September. After gorging themselves with food from the nearby refuse tips the birds would collect, often in large numbers, to bathe and preen in the shallow waters at the edge of the silt beds.

There were a few species which could always be located not far from the plant in suitable buildings. The odd pair of Pied Wagtails come to mind and regularly, in the late summer evenings, a family party of Little Owls would call to each other from high up amongst the framework of the washing plant. Kestrels would use the same plant from time to time, as a place to roost; Swallows would nest occasionally and one could always find the untidy nests of House Sparrows lodged beneath loose corrugated tin roofs, never far from buildings occupied by people.

Topsoil had to be removed whenever a new area was to be worked and the constant re-locations of this meant that there were always the right conditions somewhere for plants such as Redshank *Polygonum persicaria* and Fat Hen *Chenopodium album*. These areas were a constant attraction to finches, particularly Linnets and Greenfinches in the late summer and autumn, when flocks numbering several hundred birds were not uncommmon.

All the changes in habitat/birds have not been bad news, however. One obvious gain has been the number of pairs of nesting Little Grebes. This species has been very successful in recent years and finds the area of flooded willows to its liking. Coots have also done extremely well and up to a dozen pairs now breed annually. The flooded willows are no doubt responsible for the huge increase in the number of wintering Mallard, from a mere handful in the early 1960s to the several hundreds which congregate each November and December. Most of these birds flight out of the gravel pits during the hours of darkness to feed elsewhere, returning during mid-morning to wash and rest-up during the day amongst the flooded willows.

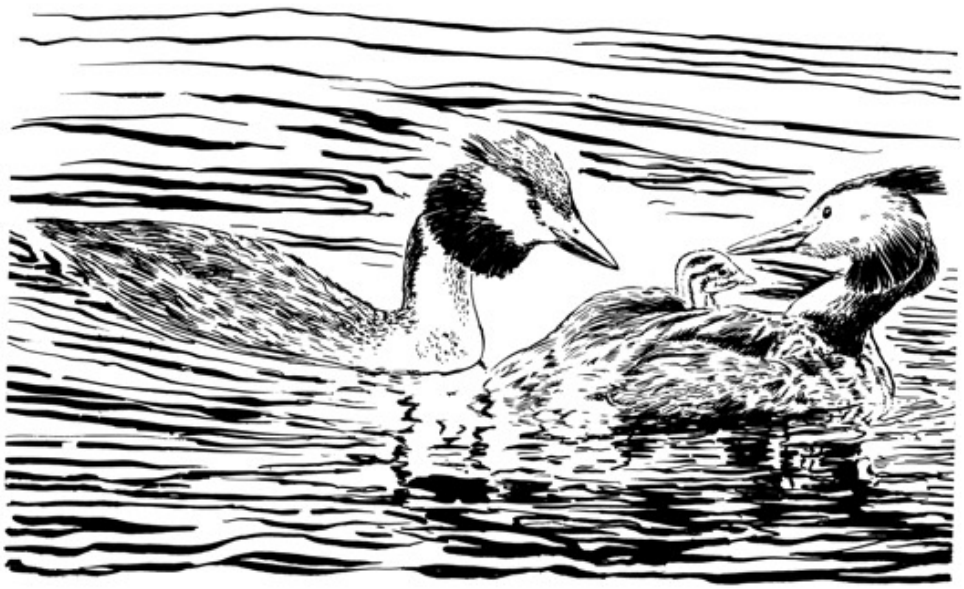
CLASSIFIED LIST compiled by June E. Atkinson

The sequence and nomenclature is that of **Voous, K.H.**, *List of Recent Holarctic Bird Species* (1973 and 1977), B.O.U. 1977, as amended.

Red-throated Diver *Gavia stellata* Rare winter visitor: one from 26 February to 1 March 1976, one on 10 February 1985 and one from 3 December 1991 to 4 January 1992.

Great Northern Diver *Gavia immer* Rare winter visitor: a first-winter bird from 4 to 14 February 1967 and another, also first-winter, from 21 January to 3 February 1990.

Little Grebe *Tachybaptus ruficollis* Common breeder: a pair bred for the first time in 1973 with a subsequent maximum of four pairs in any one year. Highest post-breeding numbers were 23 in August 1980 and 22 in September 1985.



Great Crested Grebe *Podiceps cristatus* Common breeder: first recorded in 1960 when one pair hatched three young. Five pairs bred in 1989. Maximum of 16 in April before dispersal to other areas.

Black-necked Grebe *Podiceps nigricollis* Rare visitor: one in summer plumage on 15 May 1988 and one on 10 April 1993.

Gannet *Sula bassana* Vagrant: a juvenile on 22 October 1972.

Cormorant *Phalacrocorax carbo* Scarce winter visitor: single birds recorded during the period 1982 to 1987. Numbers have increased subsequently with nine on 30 March 1988 and eight on 3 February 1990.

Shag *Phalacrocorax aristotelis* Vagrant: one on 13 September 1970 and another on 20 May 1975.

Bittern *Botaurus stellaris* Rare visitor: one on 4 November 1989.

Grey Heron *Ardea cinerea* Scarce visitor: seen mainly in late summer, usually singly but four on 22 June 1989.

Mute Swan *Cygnus olor* Regular visitor throughout the year: single pairs bred in 1971, 1981 and 1982, in which year six young were reared. Three birds present in spring and winter with a maximum of nine on 17 December 1989.

Bewick's Swan *Cygnus columbianus* Scarce winter visitor: seven flew over on 12 December 1975; three adults and one immature from 9 to 13 January 1977; two on 1 November 1985; two on 9 January and a single on 11 February 1986; five adults flew over on 25 January and five were present on 11 November 1987.

Whooper Swan *Cygnus cygnus* Scarce winter visitor: the first record was of six on 13 October 1965; with four on 7 January and two on 24 March 1967; three on 23 March 1969. Not recorded again until 1974 when five were seen on 30 November; one on 21 May 1975; one on 14 October 1976; two on 27 May and also from 7 to 11 August 1981; five flew over on 3 November 1985; one on 17 April 1987 and five on 27 October 1992.

Bean Goose *Anser fabalis* Rare winter visitor: two on 6 January 1980.

Pink-footed Goose *Anser brachyrhynchus* Regular passage migrant: seen mainly in winter and spring. Several records of singles or small numbers, usually consorting with Canada Geese. A skein of 46 flew over on 29 January 1983; eight on 23 November 1985 and 30 on 2 March 1986.

White-fronted Goose *Anser albifrons* Scarce winter visitor: an immature on 18 February 1973; one during the autumn of 1974; three on 6 January 1980; singles on 13 March 1983 and between January and February 1985. A skein of 23 flew over on 6 December 1987; an adult and two juveniles present on 8 January 1989. One from 25 to 28 January, three from 3 to 7 February and one on 9 and 10 Febrauary 1991.

Greylag Goose *Anser anser* A regular visitor and numbers increasing: birds released by WAGBI which are now breeding in good numbers make it difficult to detect truly wild individuals. 15 were feeding on 20 June 1970 and 12 during January 1971. Birds seen flying over include skeins of 52 in March 1978 and 60 on 17 December 1988. In November 1989 116 were present on 20th and 176 flew in on 24th, remaining until 26th.

Snow Goose *Anser caerulescens* Regular winter visitor (feral): an adult on 17 June 1971 was the first record for the Harrogate area. An increase since the late 1970s probably involves birds from Ripley, where one or two pairs breed annually. Maximum of ten in October 1989.

Canada Goose *Branta canadensis* Common resident: breeding has occurred since 1971, with a maximum of six pairs in 1989. Up to 600 can be seen during autumn and winter prior to their flighting out to feed at dusk.

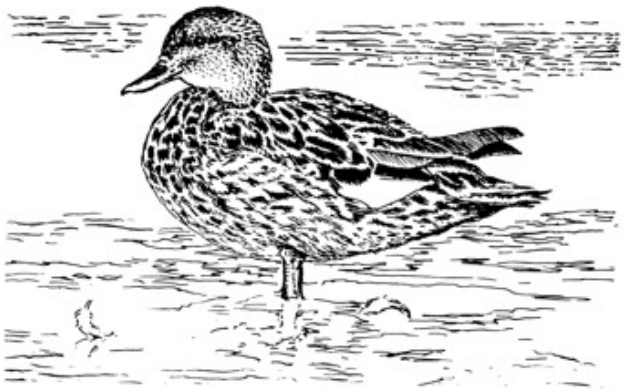
Barnacle Goose *Branta leucopsis* Regular autumn and winter visitor: small numbers only with maxima of nine in January and September 1987. Most, if not all, are likely to be feral.

Brent Goose *Branta bernicla* Vagrant: a dark-bellied bird occurred from 10 to 12 February 1989; one on 1 February 1991 and a juvenile from 29 November 1991 to 7 March 1992.

Shelduck *Tadorna tadorna* Regular passage visitor: more common in some years than others; four juveniles in August 1979; three in September 1980; three records in 1985; recorded from January to November 1986, with three on 14 May; four on 18 November 1989 and six on 30 January 1991.

Wigeon *Anas penelope* Regular winter visitor: small numbers, usually not exceeding 20 but 66 on 25 October 1988 and 69 on 18 January 1992.

Gadwall *Anas strepera* Winter visitor: formerly scarce with singles recorded most years. An increase in numbers since 1990 with a maximum of 38 in February 1993. One pair summered the same year but breeding was not confirmed.



Teal *Anas crecca* Regular visitor in autumn and winter: small numbers usually involved, with a maximum of 13 on 15 September 1988.

Mallard *Anas platyrhynchos* Common resident: a few pairs breed. Large concentrations assemble in autumn and winter with a maximum of 500 in January 1988.

Pintail *Anas acuta* Scarce winter visitor: two pairs on 17 March, a pair in August and three birds in December 1988; in 1989, a duck during January and February and two drakes and a duck on 23 December; two drakes and a duck on five dates between 23 January and 17 February 1990.

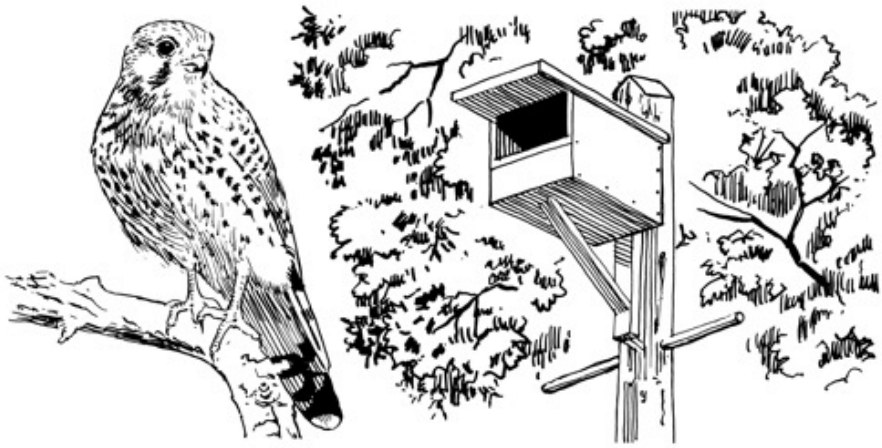
Garganey *Anas querquedula* Rare visitor: a pair on 26 May 1985; two pairs on 1 April 1991, one pair staying until 9 April.

Shoveler *Anas clypeata* Regularly recorded in autumn and winter: usually in small numbers with a maximum of 20 on 24 September 1987.

Red-crested Pochard *Netta rufina* Vagrant: a duck on 11 August 1984.

Pochard *Aythya ferina* Common visitor: mainly in winter when up to 200 may be present .

Osprey *Pandion haliaetus* Scarce passage migrant: single birds on 6 May 1984 and 17 August 1985; one was being mobbed by *Corvids* on 11 June 1985; one flew over on 13 April 1987; one was seen to fly in on 5 September 1988, when it bathed and preened for half an hour before flying off. Single birds on 17 March, 3 April and 8 June 1991; single birds on 29 April, 13 May and 29 August 1992.



Kestrel *Falco tinnunculus* Resident breeder: a pair regularly seen hunting over the area. A pair bred in a nesting box in 1991 and reared five young.

Merlin *Falco columbarius* Rare visitor: one flew over on 17 January 1988; a male was seen on 22 April 1989 and one on 3 and 11 October 1992, with two on 17 January 1993.

Hobby *Falco subbuteo* Rare visitor: one on 6 September 1976; one on 28 June 1983 and single birds on 28 June and 26 July 1992.

Peregrine *Falco peregrinus* Rare visitor: one over the eastern boundary on 30 December 1988 and a male on three dates in February 1993.

Red-legged Partridge *Alectoris rufa* Scarce resident: a pair in March 1979 with several records of birds seen or heard on adjacent land.

Grey Partridge *Perdix perdix* Scarce breeder: one or two pairs usually seen. A covey on ten on 6 September 1986 with two coveys of seven and eight on 3 December 1988; maximum of 27 on 9 November 1989.

Pheasant *Phasianus colchicus* Scarce resident: occasional records of single birds with a maximum of seven on 15 October 1989.

Water Rail *Rallus aquaticus* Rare winter visitor: one on 8 November 1981; the remains of one were found on 6 November 1985; one on 6 November 1989.

Moorhen *Gallinula chloropus* Scarce breeder: up to two pairs breed annually; numbers increase in winter with a maximum of 20 on 9 December 1987.

Coot *Fulica atra* Common breeding resident and winter visitor: six pairs bred in 1988; numbers fluctuate in winter with birds commuting from nearby Hay-a-Park; maximum of 300 in January 1986.

Oystercatcher *Haematopus ostralegus* Scarce breeder and passage visitor: one pair bred in 1977 and in most years since; maximum of 16 in February 1990.

Avocet *Recurvirostra avosetta* Vagrant: one flew over on 15 June 1984.

Little Ringed Plover *Charadrius dubius* Scarce summer visitor: one pair bred in 1963 and subsequently, with three pairs in 1970. Since the restoration of the pits, only one pair breeds most years; maximum of 11 in July 1979.

Ringed Plover *Charadrius hiaticula* Scarce breeder and passage visitor: recorded from March to September with a maximum of seven in July 1988. One pair has bred annually since 1986, with four pairs attempting to do so in 1989 encouraged by the low water level but only one pair was successful.

Golden Plover *Pluvialis apricaria* Occasional winter visitor and passage migrant: usually recorded singly; an exceptional flock of 400 on the island on 10 December 1989.

Grey Plover *Pluvialis squatarola*
Scarce passage migrant: one on 7 April 1991 and one on 10 August 1992.

Lapwing *Vanellus vanellus* Common resident and passage migrant: breeds in small numbers with four pairs in 1989; numbers increase in winter, when up to 1,000 may be present on the islands.

Knot *Calidris canutus* Scarce passage migrant: seven on 22 September 1957; singles on 4 October 1967, 11 December 1971 and 20 to 21 May 1972; four in summer plumage on 25 August 1973; one on 23 March 1986 and one on 15 August 1990.

Sanderling *Calidris alba* Scarce passage migrant: one on 9 May and another on 2 June, with two on 26 and 28 July and one on 30 July 1965; two on 4 May and one on 28 July 1968; singles in May 1973, 1976 and 1977; one from 20 to 21 August 1979; single birds on 20 July 1980 and 11 May 1989; three on 12 May 1992.

Little Stint *Calidris minuta* Scarce passage migrant: one on 12 September 1965; one on 14 July and two on 19 September 1967; singles on 20 September 1970, 1 July 1971 and 28 September 1980, two on 1 September 1993.

Temminck's Stint *Calidris temminckii* Rare passage migrant: one from 20 to 21 May 1973; single birds on three dates from 8 to 21 May 1989.

Curlew Sandpiper *Calidris ferruginea* Scarce passage migrant: one on 12 September 1959; two on 20 September 1970; two on 19 September 1978; one from 28 to 31 August 1979 and singles on 4 and 9 September 1990.

Dunlin *Calidris alpina* Common passage migrant: recorded between April and October in small numbers with a maximum of six on 15 July 1980. Late records of singles on 17 October 1985, 5 October 1988 and between 25 November and 9 December 1989.

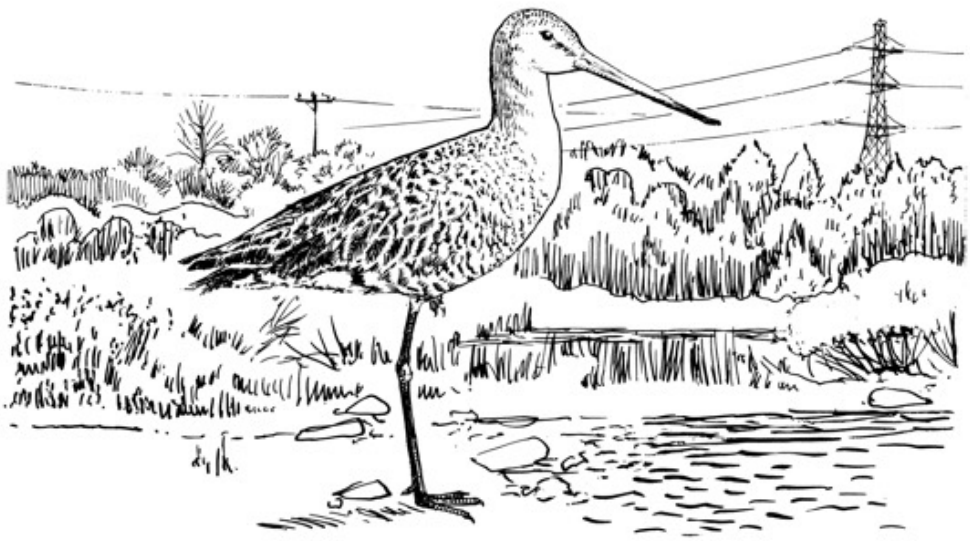
Ruff *Philomachus pugnax* Scarce passage migrant: formerly more numerous, with 12 on 19 August 1979 and seven on 8 August 1980. Now usually recorded singly with three records in September 1988; a female on 9 and 10 May with a male in breeding plumage on the latter date; one from 24 to 30 August 1989; two on 29 July 1990; 16 on 4 September 1990 and single birds on four dates between 18 and 21 May 1992.

Jack Snipe *Lymnocryptes minimus* Scarce winter visitor: singles in February and November 1972; one present from October to December 1979; singles on 14 March 1981, 13 February 1983, 26 March 1988 and on three dates in January 1992.

Snipe *Gallinago gallinago* Common autumn and winter visitor: up to 20 birds may be seen usually round the islands, with an exceptional 89 on 1 December 1988.

Long-billed Dowitcher *Limnodromus scolopaceus* Vagrant: an example of this rare American wader was present from 23 October to 7 November 1976.

Woodcock *Scolopax rusticola* Scarce visitor: breeds nearby and can occasionally be seen roding in spring and feeding round the margins of the pools.



Black-tailed Godwit *Limosa limosa* Scarce passage migrant: one flew over on 21 May 1973; ten flew over on 8 September 1987; single birds on 7 and 28 July 1989; three on 22 April, one on 28 July 1992 and one on 30 March 1993.

Bar-tailed Godwit *Limosa lapponica* Scarce passage migrant: two on 30 July 1988; single birds flew over on 6 January 1990 and 20 September 1992.

Whimbrel *Numenius phaeopus* Scarce passage migrant: one or two records in most years, mainly of birds flying over; four on 8 July 1979; single birds on 7 September 1985, 17 August 1987, 27 April and 12 July 1989; nine on 20 August 1989; single birds on 26 July and 26 August 1992.

Curlew *Numenius arquata* Passage migrant: now in small numbers but formerly common on spring passage during 1960s, with up to 200 on the mud at dusk. Numbers have subsequently declined due to habitat changes. One or two pairs frequent the adjacent area during the summer months.

Spotted Redshank *Tringa erythropus* Scarce passage migrant: singles on 1 September 1964, 4 September 1967, 31 August 1970, 7 August 1976, 23 August 1980 and 1 October 1985; six on 26 August and one on 30 August 1988; one on 8 August 1990 and two on 22 August 1992.

Redshank *Tringa totanus* Regular passage migrant: several records each year from March to November, numbers varying between one and four with a maximum of ten on 23 July 1979.

Greenshank *Tringa nebularia* Regular passage migrant: recorded in small numbers during spring and autumn. Four on 7 August 1981 and three on 6 June 1986; seen on 19 days in 1988 from 8 March to 24 September, with a maximum of four on 7 September; recorded from 24 April to 16 September 1989, with a maximum of three in autumn; maximum of four on 27 July 1990 and two in 1991.

Green Sandpiper *Tringa ochropus* Scarce passage migrant: two on 2 July 1956; three on 18 August 1980; two on 26 August 1981; singles in August 1986 and July and September 1987; three records in August and September 1988; single birds on several dates between 6 July and 27 August 1989; three on 30 July with singles in August 1991; one to two seen on several dates during June and August with three on 28 August 1992.

Wood Sandpiper *Tringa glareola* Scarce passage migrant: one on 31 July 1963; five records in August 1980 with two on 28; singles on 9 August 1981 and 17 August 1985.

Common Sandpiper *Actitis hypoleucos* Passage migrant and scarce summer visitor: one or two pairs breed annually; nine on 8 August 1988 was the maximum on passage.

Spotted Sandpiper *Actitis macularia* Vagrant: an example of this North American wader, in breeding plumage, was present from 7 to 10 May 1976.

Turnstone *Arenaria interpres* Scarce passage migrant: three on 14 May 1967; one on 5 May 1986; two on 29 July and one on 1 August 1987; one on 6, two on 27 and one on 29 August 1989 and one on 3 May 1990.

Great Skua *Stercorarius skua* Vagrant: one flew over on 3 November 1989.

Mediterranean Gull *Larus melanocephalus* Vagrant: a first-summer bird on 21 May 1989.

Little Gull *Larus minutus* Scarce visitor in spring and autumn: a juvenile on 11 September 1976; an adult and four juveniles on 8 August 1979; a second-year bird on 1 May 1988; an adult on 10 July 1992.

Black-headed Gull *Larus ridibundus* Common passage migrant and winter visitor: present in varying numbers, with 4,000 roosting in December 1986; one pair bred in 1985 and a pair attempted to do so in 1988 but failed.

Ring-billed Gull *Larus delawarensis* Vagrant: an adult on 15 February 1992.

Common Gull *Larus canus* Regular passage migrant and winter visitor: small numbers during the winter months and a maximum of 200 during passage in March 1988.

Lesser Black-backed Gull *Larus fuscus* Common passage migrant: usually present during the passage periods in varying numbers, with a maximum of 300 in July 1979; small numbers present during winter months, with a maximum of six in December 1987.

Herring Gull *Larus argentatus* Common winter visitor: present in varying numbers with maxima of 500 on 27 December 1980, 350 on 10 January 1981 and 393 on 12 March 1988.

Iceland Gull *Larus glaucoides* Vagrant: an adult on 6 January 1978, a first winter bird from 2 to 26 February 1991 and another on three dates in February 1993.

Glaucous Gull *Larus hyperboreus* Scarce winter visitor: an immature from 15 to 21 January 1967; one on 2 February 1985; a first-winter bird from 17 to 26 March and a second- winter bird on 17 March 1988; an adult on 5 January 1990 and a first-winter on 18 February 1991.

Great Black-backed Gull *Larus marinus* Common winter visitor: maxima of 500 in December 1980 at roost, 105 in February 1986 and 20 in March 1988.

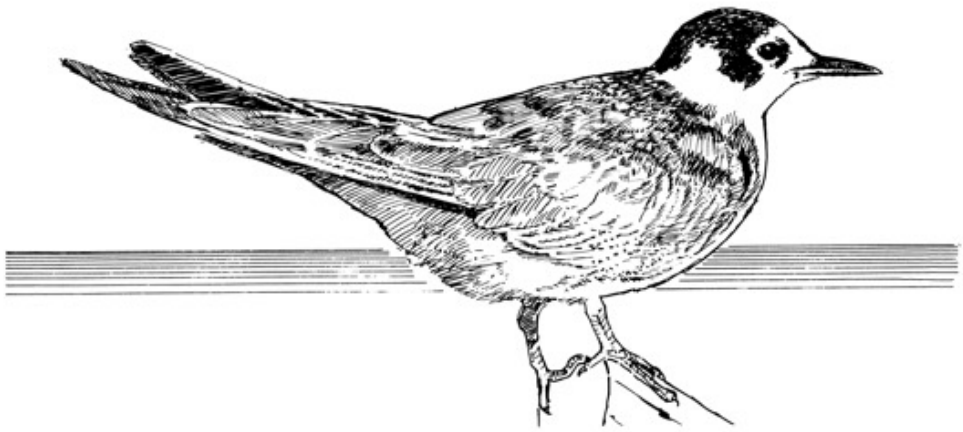
Kittiwake *Rissa tridactyla* Scarce visitor, usually seen during stormy weather: an immature on 4 March 1985; an adult on 28 January 1987; another on 4 January and two adults on 27 August 1989; one on 5 May, one in December 1990 and seven on 23 February 1991.

Common Tern *Sterna hirundo* Regular passage migrant in spring and autumn: singles recorded in most years; attempted to breed in 1985 and 1988; one pair was successful in 1989, rearing three young; two pairs bred in 1991; four pairs bred in 1992, raising ten young. Unidentified terns of either this species or the next, and known colloquially as 'commic' terns are sometimes recorded; two on 30 August 1980; 18 on 2 May 1983; three on 17 June 1985; three on 1 May and eight on 9 May 1988; ten through on 26 August 1989.

Arctic Tern *Sterna paradisaea* Scarce passage migrant: two on 17 May 1979; a juvenile on 6 and 7 September 1985.

Little Tern *Sterna albifrons* Scarce passage migrant: one in June 1968 was the first record for the Harrogate area; one in May 1978; two on 5 June 1982; one on 11 May 1989.

Black Tern *Chlidonias niger* Scarce passage migrant: singles on 28 April and 17 July 1979 and on 8 July 1984; seven came in on 3 May and two juveniles were seen in September 1986; four passed through during the day and seven were present in the evening on 3 May and a juvenile was seen on 2 September 1988; three on 20 May 1989 and ten on 2 May 1990; seen on three dates in May 1992 with ten on 18th. Six were present on 14 May 1993.



Little Auk *Alle alle* Vagrant: one on 10 October 1984 coincided with large numbers along the Yorkshire coast.

Stock Dove *Columba oenas* Regular visitor: two to three pairs in the area. Birds are usually seen flying over singly; maximum of 20 on 24 December 1988.

Wood Pigeon *Columba palumbus* Common resident: seen flying over on many dates throughout the year and feeding in adjacent fields. A few pairs now breed and winter flocks can exceed 200.

Collared Dove *Streptopelia decaocto* Scarce visitor: single birds often recorded flying over. One pair recorded near the boundary during the breeding season in 1989.

Turtle Dove *Streptopelia turtur* Scarce summer visitor: one or two birds usually seen flying over in most years. In July 1989 up to two birds frequented the hawthorn bushes.

Cuckoo *Cuculus canorus* Regular summer visitor: recorded between 17 April and 13 July; one or two usually seen each year; a juvenile in July 1980 was being fed by a Reed Bunting.

Barn Owl *Tyto alba* A pair formerly bred but not recorded since 1976, when two were seen in September.

Little Owl *Athene noctua* Resident: one pair breeds nearby and can usually be seen throughout the year.

Tawny Owl *Strix aluco* Resident: one or two pairs in the area, more often heard than seen.

Long-eared Owl *Asio otus* Rare visitor: two birds in the conifer belt on 27 March 1989 and two roosted in hawthorns from 26 December 1991 to 22 March 1992.

Short-eared Owl *Asio flammeus* Scarce visitor: singles on 13 March 1976, 10 January 1982, in February 1985, between 9 January and 6 April 1986 and on 13 May 1989.

Swift *Apus apus* Common summer visitor and passage migrant: recorded between 26 April and 7 September; 150 on 3 August 1985 was the highest number seen in the last ten years.

Kingfisher *Alcedo atthis* Autumn and winter visitor: up to two birds regularly frequent the area.

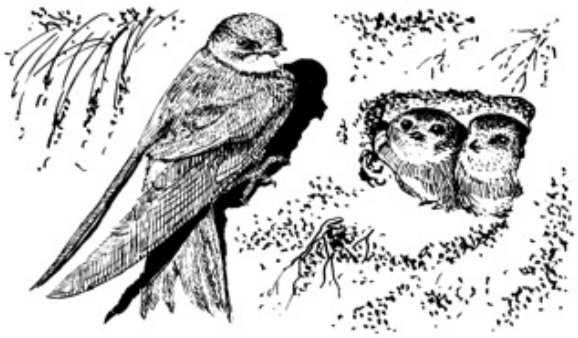
Green Woodpecker *Picus viridis* Scarce visitor: as it breeds nearby single birds are seen in most years, usually feeding on the bank sides.

Great Spotted Woodpecker *Dendrocopos major* Scarce visitor: occasionally seen and heard during most years.

Lesser Spotted Woodpecker *Dendrocopos minor* Rare visitor: one seen on 26 September 1985 is the only record.

Skylark *Alauda arvensis* Fairly common breeding species and passage visitor: up to six pairs present in 1989; winter maxima are 50 on 10 January 1981 and 32 on 8 March 1987.

Sand Martin *Riparia riparia* Common summer visitor: recorded between 17 March and 21 September. Formerly bred in large numbers when the gravel pits were in operation, with up to 3,000 regularly seen in late summer. Present day maxima of 150 on 4 May 1987 and 100 on 30 July 1988.



Swallow *Hirundo rustica* Common summer vistor and passage migrant: recorded between 29 March and 16 October. Maxima of 200 on 24 May 1986, 150 on 13 September 1989 and 100 on 7 August 1990.

House Martin *Delichon urbica* Common summer visitor: recorded between 3 April and 10 October. Maxima of 60 on 14 August 1986, 40 on 17 May, 250 on 14 June and 50 on 8 September 1987.

Tree Pipit *Anthus trivialis* Scarce passage migrant: singles on 15 April, 20 June, 4 July and 19 August 1979; one singing between 16 April and 4 May 1980; one on 1 October 1985; one singing on 5 May 1986.

Meadow Pipit *Anthus pratensis* Common summer resident and passage migrant: breeds in small numbers with a maximum of four pairs. Birds pass through mainly during April and October, with maxima of 50 on 5 October 1985 and 100 on 16 April 1989.

Rock Pipit *Anthus petrosus* Rare visitor: one on 27 September 1970 is the only record.

Water Pipit *Anthus spinoletta* Rare visitor: one on 5 May 1992.

Yellow Wagtail *Motacilla flava* Scarce summer visitor and passage migrant: one pair usually breeds annually. Small numbers occur on passage from early April; spring maxima of ten on 5 May 1986 with six on 22 August 1985. A bird showing characteristics of the Blue-headed race *M.f. flava* was seen on 30 July 1972.

Grey Wagtail *Motacilla cinerea* Scarce visitor: recorded each year, usually singly but two on 23 March and 6 November 1988.

Pied Wagtail *Motacilla alba* Summer resident and passage migrant: one pair usually breeds annually. Birds occur on passage in spring and autumn, with a maximum of 30 on 21 September 1988. Single birds showing characteristics of the White Wagtail *M.a. alba* were seen on 26 April 1986 and 9 April 1989.

Dipper *Cinclus cinclus* Rare visitor: single birds on 16 June 1977 and 23 March 1978.

Wren *Troglodytes troglodytes* Scarce resident: one or two pairs frequent the area.

Dunnock *Prunella modularis* Scarce breeding resident: up to four pairs present in 1986.

Robin *Erithacus rubecula* Scarce breeding resident: recorded during the summer only since 1988 when one pair was present during the breeding season.

Redstart *Phoenicurus phoenicurus* Scarce passage migrant: one seen on 8 September 1987; one on 27 April 1992 with one to three birds on several dates during July and August.

Whinchat *Saxicola rubetra* Regular passage migrant in spring and autumn: four records from 24 April to 19 May 1988; singles from 11 July to 1 September 1988; maximum of six on 3 September 1989; singles on three dates in May, and one on 31 August 1992.

Stonechat *Saxicola torquata* Scarce visitor: a male on 22 and 23 March 1969; single birds on 10 October 1976 and 23 March 1978; a female on 22 February and 22 October 1989; one on 28 February 1991 and one on 3 March 1992.

Wheatear *Oenanthe oenanthe* Common passage migrant in spring and autumn: a good passage in 1988 with 15 birds recorded between 5 April and 29 August; seven on 27 August 1989 was the maximum recorded; two on 18 March and one on 24 March 1990 are the earliest records.

Blackbird *Turdus merula* Scarce breeding resident: two or three pairs present in the boundary hedges.

Fieldfare *Turdus pilaris* Winter visitor and passage migrant: usually recorded flying over in spring and autumn, with maxima of 80 in March 1979 and 70 on 8 November 1988.

Song Thrush *Turdus philomelos* Scarce breeder: one pair is usually present during the breeding season.

Redwing *Turdus iliacus* Common winter visitor and passage migrant: usually recorded flying over in autumn; ten feeding in hawthorns on 10 December 1989.

Mistle Thrush *Turdus viscivorous* Scarce visitor and breeder: one pair frequents the area during the breeding season; four on 1 March 1989.

Grasshopper Warbler *Locustella naevia* Irregular breeder and passage migrant: recorded between 17 April and 20 July; one reeling in July 1972; two reeling on 15 July 1988; one reeling from 26 April to 23 July 1989.

Sedge Warbler
Acrocephalus schoenobaenus
Formerly a passage migrant only, now a breeding species: recorded between 26 April and 29 August; first breeding record was of one pair in 1986. There were four singing males from May to July 1987, and juveniles were seen in August; five males were singing in 1988; three males were singing in 1989, with two pairs feeding young in June.

Reed Warbler *Arcocephalus scirpaceus* Scarce passage migrant: one between 8 and 15 July 1979; one singing on 22 June 1986; one from 26 April to 4 May and on 13 July 1987; one on 16 July 1989; one on 14 August 1991 and singing birds on 3 June and 7 October 1992.

Lesser Whitethroat *Sylvia curruca* Scarce summer visitor: recorded between 16 April and 4 September; one pair has bred annually since 1980 with family parties seen in July.

Whitethroat *Sylvia communis* Common summer visitor and breeder: recorded between 26 April and 28 August. Six singing males in 1987 and 1989.

Garden Warbler *Sylvia borin* Scarce summer visitor and passage migrant: recorded from 10 May. one pair holding territory during May 1988 and 1989, in a suitable breeding habitat.

Blackcap *Sylvia atricapilla* Scarce summer visitor and passage migrant: two males on 16 April 1989 with one singing on 11 May and 11 June and a juvenile on 22 July; a passage bird on 6 September 1987.

Chiffchaff *Phylloscopus collybita* Scarce passage migrant: recorded in autumn between 11 September and 4 October; one or two spring records of birds singing near the boundary from 17 March. As the site matures this species will probably stay to breed.

Willow Warbler *Phylloscopus trochilus* Common summer breeder and passage migrant: recorded between 6 April and 12 September; five singing males in May 1988; singles regularly recorded during September on passage.

Goldcrest *Regulus regulus* Scarce visitor: recorded for the first time in 1988 when one was seen in November and December; in 1989 there were two records in January, a bird singing on 19 March, one seen in May, two in September and one in October.

Spotted Flycatcher *Muscicapa striata* Formerly a breeding species with one pair on the site: not recorded during the last ten years owing to the absence of mature timber, until one on 3 August 1991.

Long-tailed Tit *Aegithalos caudatus* Scarce breeder and winter visitor: one pair usually breeds and parties of up to 20 can be seen in autumn and winter.

Marsh Tit *Parus palustris* Rare visitor: singles on 8 January and 26 October 1987; one on 11 September 1989 and up to three in July 1991.

Willow Tit *Parus montanus* Scarce visitor: two on 28 October 1979; a family party on 13 July 1980; one heard on 8 February 1981; one on 7 November 1988 and singles in July and August 1991.

Coal Tit *Parus ater* Rare visitor: one on 5 October 1989.

Blue Tit *Parus caeruleus* Regular visitor and scarce breeder: one pair bred in a nest box in 1988 and 1989; small parties of up to 18 can be seen in autumn.

Great Tit *Parus major* Scarce visitor: usually seen in small parties, 14 on 27 July 1986; records of single birds in winter in 1988 and 1989.

Nuthatch *Sitta europaea*
Uncommon visitor: single birds on 6 May 1991 and 12 April 1992.

Treecreeper *Certhia familiaris* Rare visitor: one on 14 January 1979; one on 16 December 1989; one on 21 May 1991 and one on 12 January 1992.

Jay *Garrulus glandarius* Scarce visitor: one or two records annually, mainly of single birds flying over.

Magpie *Pica pica* Common resident: seen throughout the year with parties of up to 14.

Jackdaw *Corvus monedula* Common resident: seen throughout the year; 800 in January 1981; flocks of up to 100 gather in the nearby fields during the autumn.

Rook *Corvus frugilegus* Common resident: can be seen in the adjacent fields throughout the year; maximum of 400 in January 1981.

Carrion Crow *Corvus corone* Common resident: regularly seen, with up to six foraging in winter.

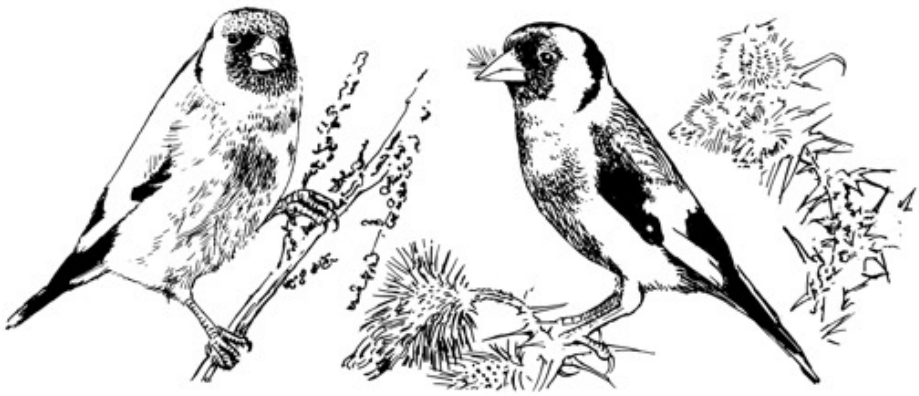
Starling *Sturnus vulgaris* Common resident: a roost between the years 1984 and 1987, in the emergent willows held 20,000 birds on 23 June 1985; smaller numbers in 1987 with a maximum of 3,000 in September.

House Sparrow *Passer domesticus* Scarce visitor: formerly bred in the quarry buildings; now only seen in winter, with a flock of 100 on 3 September 1989.

Tree Sparrow *Passer montanus* Regular visitor: fairly common with 1,000 seen in the winter of 1967; 200 on 4 December 1988; one or two birds present during the summer in 1989; a pair bred in a nest box in 1990.

Chaffinch *Fringilla coelebs* Regular winter visitor and scarce breeder: small numbers, up to 15, during the winter of 1987; two breeding pairs in 1987.

Greenfinch *Carduelis chloris* Regular winter visitor and scarce breeder: 38 on 19 November 1987; 20 on 3 December 1988; one pair seen during the breeding season in 1989. Several visit the bird table during the winter months.



Goldfinch *Carduelis carduelis* Regular autumn and winter visitor and scarce breeder: parties of up to 25 recorded during August and September; one pair present in spring 1988 and juveniles seen in July.

Siskin *Carduelis spinus* Scarce winter visitor: first recorded in 1985 when up to three birds were seen in November; one in October 1986; one in November 1988; up to 33 birds feeding in alders in December 1991 and a maximum of 33 in February 1992.

Linnet *Carduelis cannabina* Rare winter visitor and scarce breeder: autumn and winter flocks of up to 250 were recorded from 1979 to 1987; only 30 were seen in March 1988 and 15 in September 1989; two pairs were seen during the breeding season in 1987 and one pair in 1989.

Twite *Carduelis flavirostris* Scarce winter visitor: recorded for the first time in 1988 when up to seven birds frequented the car park area from 24 April to 2 May; up to 20 in the same area on 22 April 1989.

Redpoll *Carduelis flammea* Scarce visitor: one singing on 24 May 1986; two seen in July and two feeding in alders in November 1988; 30 were seen on 8 December 1992.

Bullfinch *Pyrrhula pyrrhula* Scarce breeding resident: one pair usually breeds annually; a party of nine was seen in July 1988.

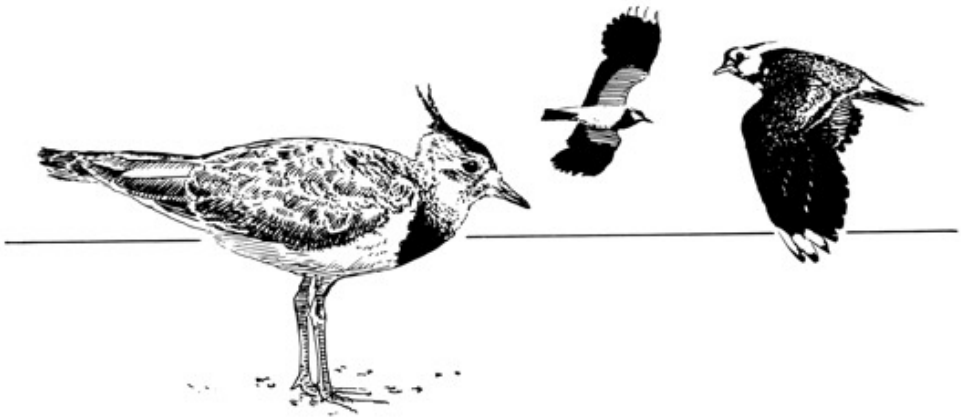
Hawfinch *Coccothraustes coccothraustes* Rare visitor: one on 13 April 1975; one flying over in March 1987; another in February 1988.

Snow Bunting *Pletrophenax nivalis* Rare winter visitor: two males on 25 September 1977; one immature in February 1986; one immature on 25 November 1987.

Yellowhammer *Emberiza citrinella* Common resident and winter visitor: breeds in the boundary hedgerows; four singing males in 1989; a flock of 80 in December 1988.

Reed Bunting *Emberiza shoeniclus* Common resident: up to five pairs breed in some years; a flock of 40 was present in January 1967; present-day maximum of 12 in December 1988.

Corn Bunting *Miliaria calandra* Formerly common: a flock of 100 was present in the winter of 1967; now rarely seen, three in December 1988 is the only recent record.



A Preliminary Assessment of the Breeding Land Birds Around the South Lake

by Robert Evison

Since the cessation of gravel extraction and the completion of the restoration at Farnham Gravel Pits, the time was right for an assessment to be made of the birds which breed at the site. The area surrounding the South Lake was chosen as it had recently been planted with an assortment of tree species, which in time would obviously have a profound effect on the bird species breeding there.

Topographic/Vegetational Description

The South Lake is surrounded by a steep bank 30 feet high in places. Along the northern and eastern edges the steep bank approaches the water, but to the south and west, at the base of the slope, there is a low flat area of varying widths. Generally speaking the limits of the water are well defined and do not alter significantly with changing levels. Very little emergent vegetation exists but there is an extensive area of flooded willows. There is one substantial island present at all times in the centre of the lake and in addition to this, there are a number of smaller islands varying in size according to the water levels. The map on page 5 shows where the main vegetational features lie.

An area alongside the entrance road, approximately an acre in extent, has been designated as a car park. The gravelled covering on the compacted land has proved attractive to both Little Ringed Plovers and subsequently to Ringed Plovers.

Methods and Summary

During May and June in 1986 and 1987 several visits were made to the site to plot singing males and other types of behaviour which suggested breeding. From the field maps, it was possible to produce the accompanying master maps, which give a good indication on the absolute minimum number of territories held by various species. Additional to these, both Cuckoo and Wood Pigeon were regularly present and undoubtedly bred.

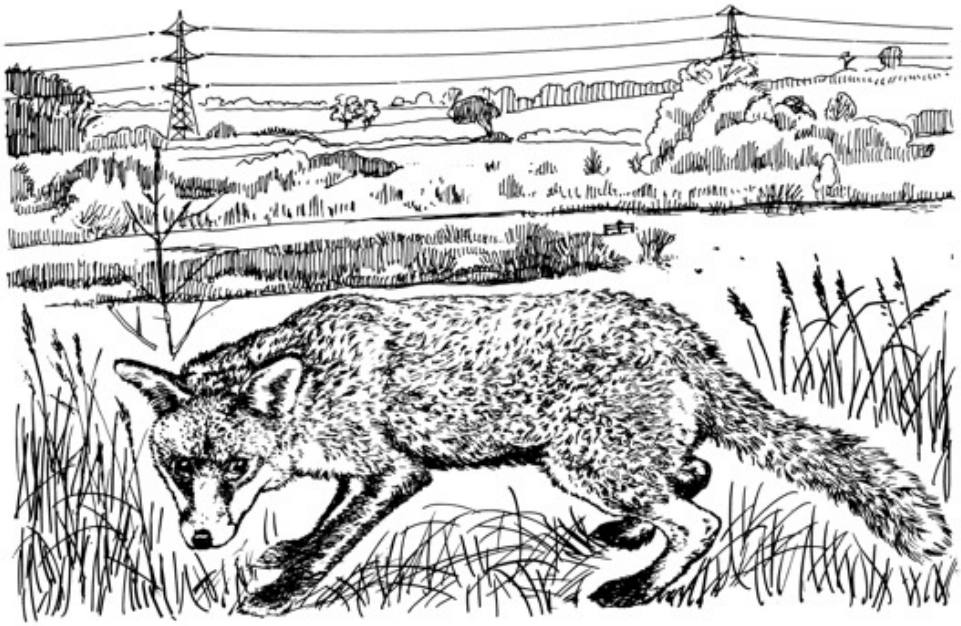
It will be interesting to monitor the changes in species and their numbers as the vegetation matures.

SPECIES	1986 NO. PAIRS	1987 NO. PAIRS
Skylark	3	4
Blue Tit	1	2
Willow Warbler	5	5
Whitethroat	5	5
Dunnock	4	3
Reed Bunting	3	5
Yellowhammer	2	3
Sedge Warbler	1	2
Chaffinch	1	2
Yellow Wagtail	1	-
Great Tit	1	-
Lesser Whitethroat	1	-
Ringed Plover	1	-
Little Ringed Plover	1	1
Lapwing	-	1
Blackbird	-	2
Grasshopper Warbler	-	1
Linnet	-	2
Wren	-	1
	30 PAIRS 14 species	**39 PAIRS 15 species**

Table 1 -
LIST OF SPECIES RECORDED BREEDING IN THE STUDY AREA IN 1986 and 1987

Mammals

Compiled by John R. Mather from records supplied by R. Elliott, with additional notes by June E. Atkinson



In the absence of a prolonged and intensive study using live-trapping techniques, the status of small mammals is difficult to assess with confidence. The information available from sample trapping and casual observations however, gives some indication of the relative abundance of certain species. Most mammals are strictly nocturnal and records of the larger species come mainly from chance sightings during the day time. The presence of several species is evident only from their tracks or droppings and such indicators should be recorded.

There is scope for detailed observations of bats which would give a better picture of the species which occur in the area and their status. Although very difficult to identify on the wing, in fact, impossible in some groups, a few species can be recognised with experience. All sightings should be entered in the log book, giving details of size and most importantly, behaviour.

In the list that follows, order and nomenclature are that of **Van den Brink F.H.**, *A Field Guide to the Mammals of Britain and Europe*, Collins, 1967.

Hedgehog *Erinaceus europaeus* Seen on several occasions but doubtless under-recorded.

Pygmy Shrew *Sorex minutus* A few chance records have established the presence of this species.

Common Shrew *Sorex araneus* Eight animals caught from ten traps in the spring of 1988 and its subsequent presence whenever live-trapping has been undertaken, proves the species to be common.

Mole *Talpa europaea* Numerous molehills show the species to be plentiful and widespread.

Bats *Chiroptera sp.* Several bats are regularly seen over the area without being specifically identified. The two species most likely to be involved are **Pipistrelle** *Pipistrellus pipistrellus* and **Noctule** *Nyctalus noctula.* The latter species can be identified in flight by its size, shape and call by those with experience but great caution should be exercised.

Rabbit *Oryctolagus cuniculus* Very common all over the area, encouraged by the light sandy ground.

Brown Hare *Lepus (capensis) europaeus* Regularly reported, mainly in the adjacent fields.

Grey Squirrel *Sciurus carolinensis* Records of single animals reported in recent years.

Bank Vole *Clethrionomys glareolus* Live-trapping indicates that this species is the most abundant small mammal, inhabiting rank grass and piles of cut branches.

Water Vole *Arvicola amphibius* Very few records of this declining species, the last one being in 1990.

Short-tailed Vole *Microtus agrestis* Rarely seen but signs of activity indicate that it is common in areas of rank grass.

Harvest Mouse *Micromys minutus* Nests of this secretive species have been found in long grass near the hedgerow on the eastern side of the area.

Wood Mouse *Apodemus sylvaticus* Regularly recorded over much of the area in rank grass, wood piles and under hedgerows.

Red Fox *Vulpes vulpes* Several animals have been recorded including a vixen and cubs on one occasion.

Badger *Meles meles* Tracks have been seen around the south lake and the species may breed nearby.

Stoat *Mustela erminea* Recorded singly on few occasions during most years.

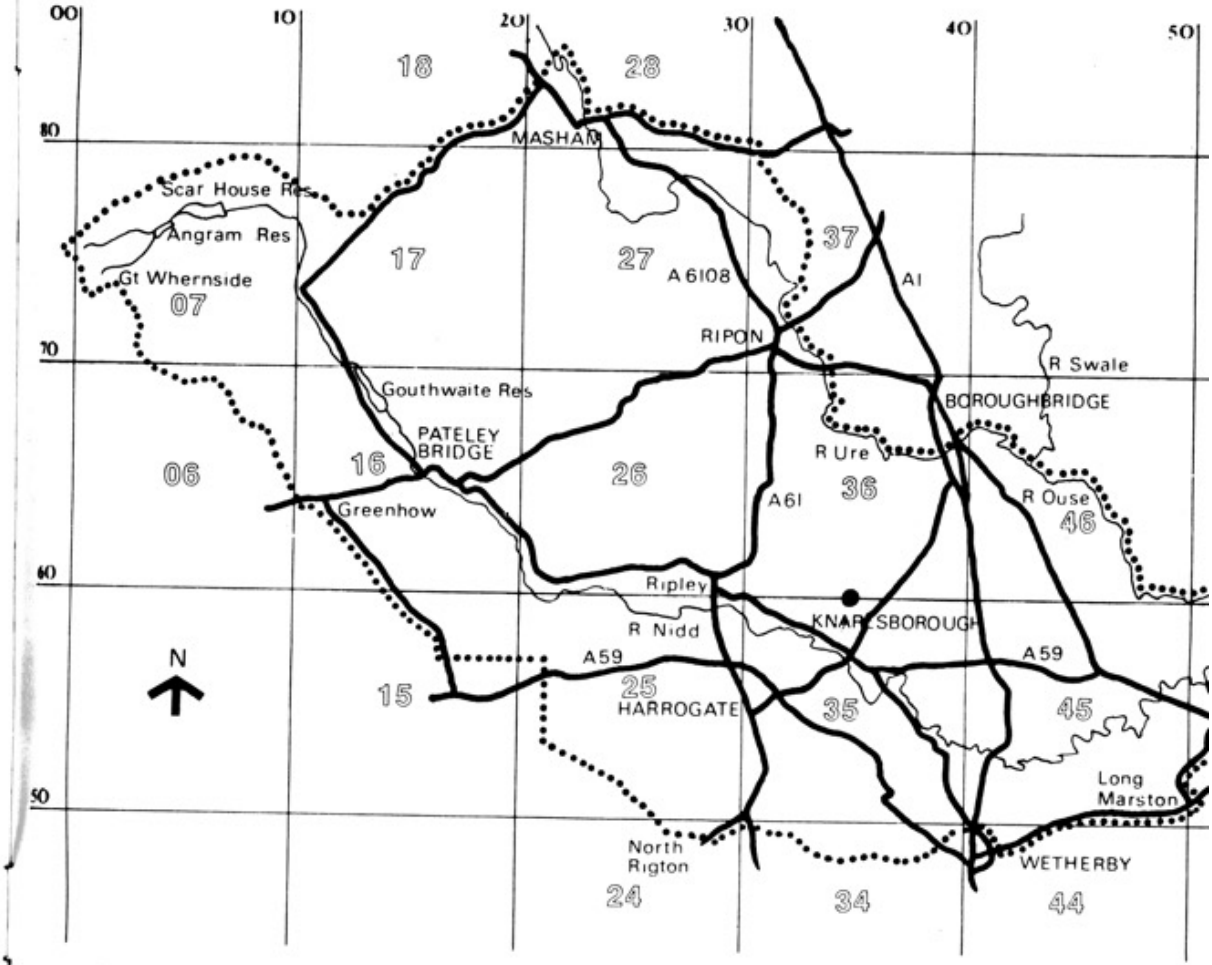
Weasel *Mustela nivalis* Recorded singly on few occasions during most years.

American Mink *Mustela vison* A few unconfirmed reports of this destructive alien.

Red Deer *Cervus elaphus* An immature animal seen at the south end of the lakeside in May 1992.

Roe Deer *Capreolus capreolus* One or two animals are seen each year. Two were chased by cattle in June 1989.

Notes



0 5 10 15 kilometres

0 5 10 miles

HARROGATE AND DISTRICT NATURALISTS' SOCIET

STUDY AREA