

Chapter 23

Fauna and Flora before Rutland Water

Mike Griffin

Introduction

The Rutland Natural History Society (RNHS) was formed by a small group of enthusiasts in February 1965 with William (Dusty) Miller as its first Chairman and Roy Hunter as Secretary. Thus, when the construction of Rutland Water was approved by Parliament in 1970, the RNHS realised the importance of undertaking a detailed survey of fauna and flora in that area of the Gwash Valley to be flooded, before it was lost for ever. The original proposal for a survey was made by Dr Erica Hutton who was a founder member of the RNHS and its Chairperson from 1974-77.

It was recognised that the major influences on fauna and flora would be the earth-moving activities, especially in the vicinity of the dam and the main basin, the clearance of trees and hedges, the demolition of houses and other buildings and, finally, the rising water levels as the reservoir filled. The RNHS's aim was to complete at least one full survey in advance of any of these activities. Over much of the reservoir area, this aim was achieved for birds, insects and plants. Further surveys continued where possible during the construction period.

Vegetation clearance commenced in early autumn 1971 in the dam area close to Empingham, before any surveys began. However, this affected only a relatively small part of the total area covered by the reservoir project. The last areas to be cleared, in early 1974, were the east part of Barnsdale Wood and that part of Burley Wood along the diverted A606.



*Looking
downstream
from
Normanton
Bridge at
Normanton
Fishpond
before
clearance.
Note Alder
trees in the
foreground on
both sides
(RNHS, 1981)*

Vegetation Clearance Programme

<i>Date</i>	<i>Area</i>	<i>Extent</i>
Autumn 1971	Dam area by Empingham	Whole
December 1971 to January 1972	Mow Mires Spinney Cocked Hat Spinney	Whole Whole
November 1972 to March 1973	Hambleton Wood	Part
March 1973 to August 1973	Gibbet Lane area Armley Wood Normanton Fishpond Brake Spinney	Whole Part Whole Whole
October 1973	Barnsdale Wood (Main)	Part
November 1973	Armley Wood Rushpit Wood	Part Part along A606 diversion
February 1974	Barnsdale Wood (East) Burley Wood	Part Part along A606 diversion

*Looking
downstream at
Normanton
Fishpond after
clearance
(RNHS, 1981)*



The reservoir took nearly five years to fill. The area flooded rose from ten acres in 1974 to 3,113 acres (1,260 hectares) in April 1979, when it was full for the first time.



*Vegetation
clearance near
Armley Wood
(RNHS, 1981)*



*View
downstream of
Bull Bridge in
1974 showing
an early stage
of flooding
(RNHS, 1981)*



*Eastern end of
Barnsdale
Wood prior to
felling, with
white stakes
showing the
future high
water line
(RNHS, 1981)*

Filling the Reservoir

This table shows the approximate water level, the depth and the area covered at various dates from the start of construction until the reservoir was full. Water levels are given as heights above mean sea level, or more correctly, heights above Ordnance Datum (OD).

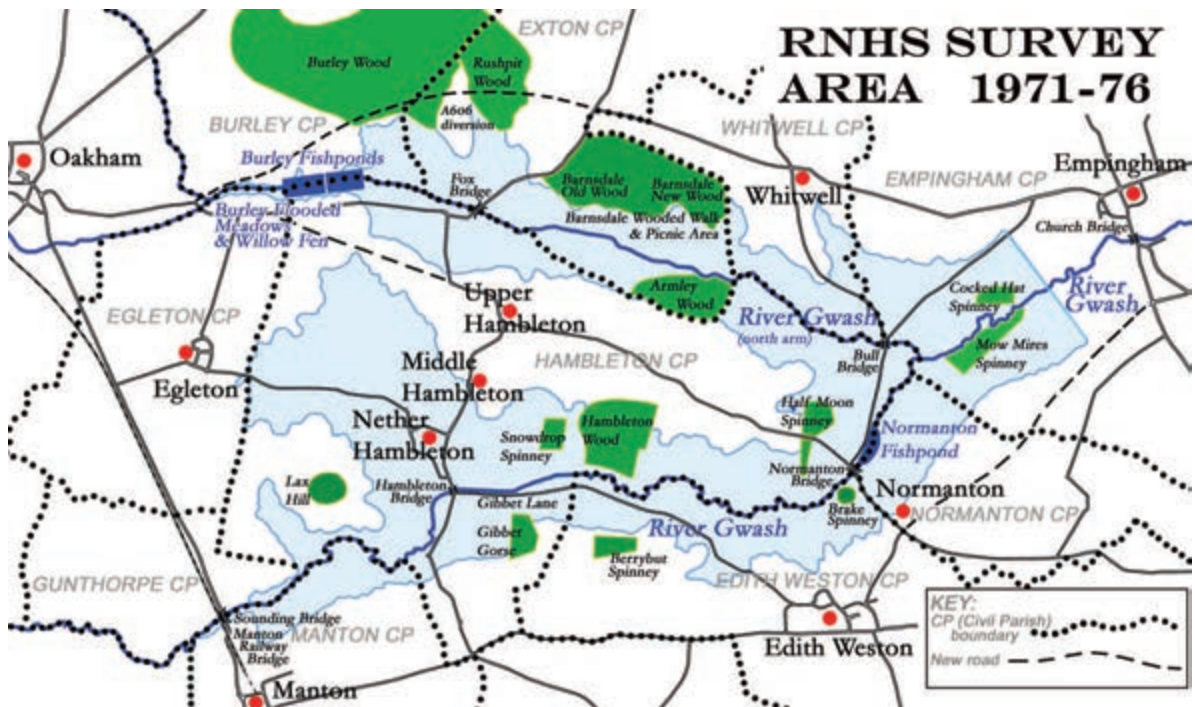
Date	Water level OD (metres)	Water depth (metres)	Area flooded (acres)
1971	(reservoir empty)	0	0
1974	53	1	10
1975	63	11	330
1976	68	16	720
1977	82	30	2,700
1979	84 (reservoir full)	32	3,113

The dam was closed on 6th February 1975 and the first time that water flooded over the spillway was in April 1979. The exact level at which water starts to flood over the spillway is 83.82m OD.

(RNHS 1981, Map 2 & information provided by David Moore, Recreation & Access Manager, Anglian Water).

The RNHS Survey started in autumn 1971 and continued until autumn 1976, focussing on mammals, birds, insects and plants. However, before the survey started, maps and record cards had to be prepared and permission had to be obtained from farmers for access to their land. Surveys were conducted over nine main areas of land based on parish boundaries. These extended from Normanton and Empingham parishes in the east to the Gunthorpe and Burley parishes in the west. Individual fields were identified and numbered, for example N22 (Normanton) and G9 (Gunthorpe). As work on the clearance of vegetation progressed, inevitably, individual field boundaries became obscured.

The Gwash Valley survey area showing parish boundaries and other key features (RO)



NAMES :- PHILIP RUDKIN,
MAX WINSLOW, HEAVY PARKER,
JIM EATON, CHIMERON READ

WEATHER :- CLOUDY, 7/8 LAYER OF
THIN CLOUDS. WARM,
DRY.

TIME COMMENCING :- 7-0 AM.

DATE	PARISH	FIELD No.	SPECIES	COMMENTS
22 AUG 1974	HAMBLETON	15 AND 16	YELLOW WATRAL + 4 YOUNG WALL REED BUNTING 1 GREEN SANDPAPER 1 COMMON SANDPAPER 1 DUNLIN, 10 SHIRE, 8-15 PM. 1 SHORT EARED OWL 50+ SWallows - HEADING OVER THE WATER 1 SWIFT OVER 3 RABBITS, PLUS ONE YOUNG 1 HARE, ON CORN FIELD 4 TUFTED DUCKS. 30+ TITM, 3 MOORHEN 2 LITTLE OWLS	SHORT EARED OWL QUARTERING THE FIELDS JUST NEAR THE DAM AND THEN FLEW OVER BULL BRIDGE THE LITTLE OWLS WERE HEARD CALLING FROM THE OTHER SIDE OF BULL BRIDGE

*Record card
from the bird
survey for two
fields just
upstream of
Bull Bridge
(Philip Rudkin)*

The urgency to start the survey, the limited number of recorders and the enormity of the task meant that survey areas had to be prioritised. The main focus was on the rivers and river banks and ten yards into the fields bordering the rivers, on fishponds and any marshy areas, on woods and spinneys, and on any undisturbed grassy banks. The Carnegie UK Trust gave a grant of £175 towards the cost of the RNHS Survey.

Although not part of the RNHS Survey, a detailed record was made of the resident fish species when they were removed from fishponds, rivers and streams during 1974 (Moore 1982, 179-89). Thus, fish species will be covered in this chapter, along with mammals, birds, insects and plants. Other species not included in the RNHS Survey were reptiles, amphibians, spiders, soil invertebrates, fungi, lichens, mosses and liverworts.

The nomenclature used for some animal and plant species in the RNHS Survey Report (RNHS, 1981) has been superseded. Up-to-date nomenclature is used throughout this chapter.



*RNHS survey
party standing
on a footbridge
over the River
Gwash south-
west of Brake
Spinney,
looking
upstream. From
left to right,
Betty Eaton,
Joan Levisohn
and Dr Erica
Hutton (Jim
Levisohn
ARPS)*

Mammals

Mammals were recorded at fortnightly intervals from September 1972 to August 1976 along the River Gwash and in the fields bordering the river. However, a year earlier in September 1971, the RNHS was contacted by the Water Board and asked to help with Badger setts in Normanton Park due to be destroyed by earth-moving machinery. Using various Badger-friendly methods, the Badgers were persuaded to vacate their setts before the machinery was moved in.

In 1971, RNHS members persuaded Badgers in Normanton Park to vacate their setts before they were destroyed by heavy machinery (Jim Eaton)



During the five years of the survey led by George Sellars, 22 different species of mammal were recorded (RNHS 1981, 63-66). Rabbits, Brown Hares, Fallow Deer and Foxes were regularly recorded but not so frequently as the Water Vole, sighted on 269 occasions. There were no striking increases or decreases in sightings over the survey period, with the exception of the Water Vole. Sightings dropped from 161 in 1972, to 28 in 1974, and to a mere 12 in 1976. The majority of the 269 sightings were along the main course of the River Gwash; only 16% were along the north arm of the river. The abundance of Water Voles along the River Gwash in 1972 is of particular interest given the dramatic decline of this species since the 1970s. National surveys have shown that Water Voles have been lost from some 90% of the sites they inhabited 60 years ago. The decline has accelerated in the past 20 years and predation by the American Mink is thought to have eradicated many small populations of Water Vole, which is now listed in the UK Action Plan on Biodiversity. They have also been legally protected since 1998 when they were included on Schedule 5, Section 9 (4) a & b of the Wildlife and Countryside Act 1981 (as amended). Clearly, before the site was flooded, the River Gwash between Empingham and Gunthorpe provided an excellent habitat for Water Voles. Tim Appleton, manager of Rutland Water Nature Reserve, has confirmed that the current population of Water Voles in the Rutland Water Nature Reserve is at a very low level with only one or two sightings per year. Also, Linda Biddle, the RNHS mammal recorder, has confirmed occasional recent sightings along the North Brook which runs into the River Gwash at Empingham, about half a mile downstream from the Rutland Water dam.

Mammals recorded during the Survey

<i>Species</i>	<i>Total number of sightings</i>
Hedgehog	2
Mole	72
Common Shrew	4
Pygmy Shrew	4
Water Shrew	1
Noctule Bat	7
Pipistrelle Bat	13
Long-eared Bat	2
Fox	115
Stoat	19
Weasel	26
Badger	72
Fallow Deer	128
Brown Hare	179
Rabbit	189
Grey Squirrel	79
Harvest Mouse	1
Wood Mouse	55
Common Rat	12
Bank Vole	21
Water Vole	269
Field Vole	31

*The Water Vole
was the most
commonly
sighted
mammal in the
RNHS Survey
(Wikipedia)*



Muntjac were not sighted during the five-year survey from September 1972 to August 1976. This species has now become relatively common (Biddle 1990, 33-36) and is regularly spotted around Rutland Water. Similarly, there was no record of Otters from the Survey but this species has remained absent or very scarce. However, in February 2007, a large male Otter was unfortunately killed crossing the A6003 where the River Gwash flows into Rutland Water by Sounding Bridge near Manton. This was only the second

Otter seen around Rutland Water in 31 years. Other recent reports of Otter activity in Rutland (*Fieldfare* May 2007, 18 & 19) are encouraging and consequently there is some hope that breeding pairs might return in the near future.



*Tim Appleton with a dead male
Otter killed on 17th February 2007
crossing the A6003 road where the
River Gwash flows into Rutland
Water at Sounding Bridge
(Rutland & Stamford Mercury)*

Birds

During the five years from 1971/72 to 1975/76, bird surveys, led by Jim Eaton, were undertaken at fortnightly intervals by RNHS members. All sightings were recorded by field number and date, and monthly summaries produced. Data were grouped into winter and summer seasons for the whole area to enable meaningful comparisons for migrant species. The detailed results, for summers and winters, for each of the five survey years, were published in the *Before Rutland Water* report (RNHS 1981, 55-61).

Sightings of Bird Species during the Survey

<i>Species</i>	<i>Total number of sightings</i>	<i>Species</i>	<i>Total number of sightings</i>
Barn Owl	11	Great Crested Grebe	113
Bearded Tit	2	Great Grey Shrike	1
Bewick's Swan	8	Great Spotted Woodpecker	7
Blackbird	567	Great Tit	258
Blackcap	56	Greenfinch	479
Black-headed Gull	1,846	Green Sandpiper	27
Blue Tit	650	Greenshank	4
Brambling	68	Green Woodpecker	95
Bullfinch	300	Grey Heron	97
Buzzard	2	Grey Partridge	112
Canada Goose	32	Grey Wagtail	5
Carrion Crow	230	Herring Gull	49
Chaffinch	894	House Martin	796
Chiffchaff	36	House Sparrow	1,863
Coal Tit	11	Jack Snipe	1
Collared Dove	9	Jackdaw	549
Common Gull	96	Jay	85
Common Sandpiper	47	Kestrel	91
Common Tern	2	Kingfisher	32
Coot	2,402	Lapwing	4,816
Cormorant	25	Lesser Black-backed Gull	50
Corn Bunting	86	Lesser Spotted Woodpecker	5
Cuckoo	29	Lesser Whitethroat	29
Curlew	1	Linnet	1,633
Dunlin	78	Little Grebe	160
Dunnock	330	Little Owl	18
Fieldfare	2,252	Little Ringed Plover	18
Garden Warbler	21	Long-tailed Tit	377
Goldcrest	15	Magpie	41
Golden Plover	38	Mallard	2,754
Goldeneye	34	Marsh Tit	108
Goldfinch	937	Meadow Pipit	194
Goosander	3	Mistle Thrush	26
Grasshopper Warbler	16	Moorhen	386
Great Black-backed Gull	20	Mute Swan	139

Nightingale	4	Song Thrush	202
Nuthatch	13	Spotted Flycatcher	29
Osprey	1	Starling	5,074
Oystercatcher	2	Stock Dove	35
Pheasant	264	Stonechat	30
Pied Wagtail	145	Swallow	612
Pintail	8	Swift	405
Pochard	587	Tawny Owl	39
Red-legged Partridge	98	Teal	862
Redpoll	82	Treecreeper	44
Redshank	38	Tree Pipit	1
Redstart	15	Tree Sparrow	844
Redwing	409	Tufted Duck	1,311
Reed Bunting	756	Turtle Dove	48
Reed Warbler	61	Water Rail	2
Ringed Plover	1	Wheatear	12
Robin	250	Whinchat	21
Rook	1,191	Whitethroat	43
Ruff	11	Wigeon	228
Sand Martin	26	Willow Tit	35
Sedge Warbler	67	Willow Warbler	127
Shelduck	3	Woodcock	18
Short-eared Owl	9	Woodpigeon	3,341
Shoveler	126	Wren	385
Siskin	52	Yellowhammer	648
Skylark	2,136	Yellow Wagtail	70
Snipe	602		

One hundred and twenty-three bird species were sighted during the five survey years from 1971/72 to 1975/76. Eighty-eight species were recorded in 1971/72 and 97 species in 1975/76. The most common species, sighted on more than 2,000 occasions during the five years, were Mallard, Coot, Lapwing, Woodpigeon, Skylark, Fieldfare and Starling. In contrast, species sighted only once included Osprey, Ringed Plover, Jack Snipe, Curlew, Tree Pipit and Great Grey Shrike. For comparison, Terry Mitcham, the RNHS bird recorder, has confirmed that the number of bird species recorded from the Rutland Water Nature Reserve in 2005/06 was 176.



Goldeneye, absent during the first three survey years, first appeared in 1974/75 (Wikipedia)

Tufted Duck, not seen in 1971/72, then increased progressively to 557 sightings by 1975/76
(Wikipedia)

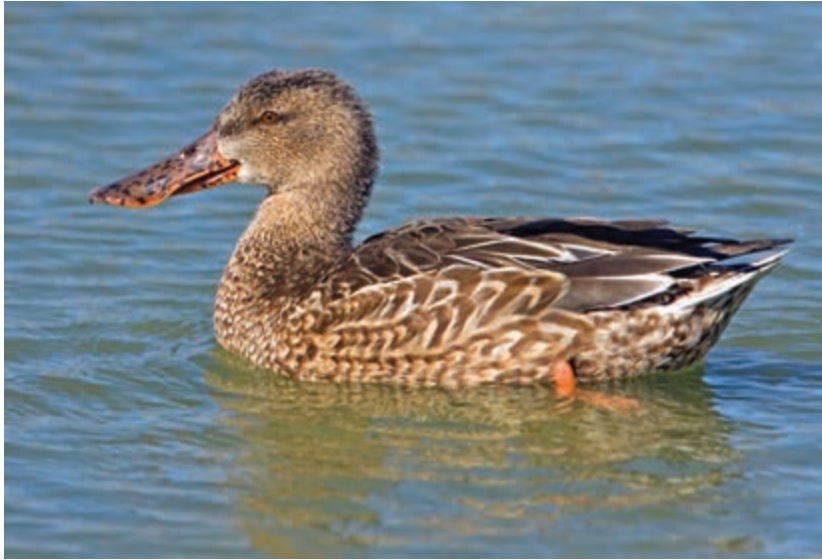


There are many factors which affect annual bird populations and short term trends must be interpreted with caution. However, between 1971/72 and 1975/76, one would have anticipated increases in some wildfowl species as the area of water increased, and decreases in other species due to a combination of disturbance and habitat destruction. This proved to be the case. Ten species of wildfowl showed clear trends towards a progressive increase in numbers over the five years whereas some other species, for example the Robin, showed trends in the opposite direction.

Birds Sightings which increased or decreased during the Survey

Total number of sightings

<i>Species</i>	<i>1971/2</i>	<i>1972/3</i>	<i>1973/4</i>	<i>1974/5</i>	<i>1975/6</i>
<i>Waterfowl</i>					
Great Crested Grebe	0	4	20	50	39
Little Grebe	4	19	18	67	52
Cormorant	0	0	0	6	19
Mallard	235	474	342	357	1,346
Shoveler	0	6	6	10	104
Tufted Duck	0	84	198	472	557
Pochard	0	59	114	239	175
Goldeneye	0	0	0	21	13
Coot	57	133	410	479	1,323
Dunlin	0	10	7	24	37
<i>Other Species</i>					
Cuckoo	17	5	6	1	0
Long-tailed Tit	118	151	64	19	25
Great Tit	115	90	32	12	9
Robin	93	88	36	16	17



*Female
Shoveler.
Absent in the
first survey,
Shoveler were
sighted on 104
occasions by
1975/76 (A
Wilson –
Wikipedia)*

Worthy of mention are a few of the bird species not recorded during the survey. Given the frequency of the surveys over a five-year period, it seems remarkable now that the Sparrowhawk was not recorded. Clearly, populations in the area were at a very low level or even absent during the early 1970s. Terry Mitcham has confirmed that Sparrowhawk sightings are now quite common around the Rutland Water Reserve, as are sightings for other birds of prey either not recorded or not regularly recorded during the survey, namely Red Kite, Common Buzzard, Osprey and Hobby. Also, the Peregrine Falcon is now a regular winter visitor. Another bird of current importance not recorded during the survey is the Gadwall. Since the survey, Gadwall have become established on Rutland Water, and their populations, along with those of Shoveler, are now of international importance and are cited in the Special Protection Area (SPA) designation.

The Sparrowhawk, now commonly seen around Rutland Water, was not recorded during the RNHS surveys from 1971/72 to 1975/76 (Stafford – Fotolia)



Fish

Rutland Water was stocked with Brown Trout and Rainbow Trout in 1975 (*see* Chapter 22 Rutland Water: Planning and Developing a Water Supply Reservoir as a World-Class Leisure Venue). Prior to this, it was necessary to remove resident fish in order to minimise competition with, and predation of, the introduced trout fry. The area within the reservoir's perimeter contained fishponds, farm ponds, ditches, streams and two stretches of the River Gwash including its north arm. Most of these contained species of fish.

The contributory rivers and streams were electrofished during 1974. Burley Fishponds were drained which allowed fish to be netted and transported in tanks for release elsewhere. Final removal was by poisoning the streams with rotenone, a broad spectrum piscicide, to eliminate those fish that had avoided capture. Numerous ditches which contained Sticklebacks were not poisoned as they were too numerous and return of the species was inevitable. Nineteen species of fish were recorded (Moore 1982, 179-89), some of which, such as Carp, Tench and Bream, were mainly or entirely in Burley Fishponds. Most of the species which would be expected from low-land rivers and streams in England were represented. One species not recorded in 1974 but which, according to David Moore, has been present in Rutland Water since the mid-1990s is the Zander, often referred to as the Pike-Perch. It is closely related to the Perch, but not to the Pike and is not native to English waters. It was introduced to the Great Ouse Relief Channel (Norfolk) in 1963 and, since then, has spread rapidly. Zander can now be found in drains, canals, still waters and slow-moving rivers throughout East Anglia and the Midlands.

Fish Species in Watercourses and Ponds which were subsequently flooded by Rutland Water

Bleak
Brown Trout
Bullhead
Chub
Common Bream
Common Carp
Dace
Eel
Grayling
Gudgeon
Minnow
Perch
Pike
Roach
Rudd
Silver Bream
Stickleback
Stone Loach
Tench



Pike were common both in the River Gwash and in Burley Fishponds. This picture shows seventeen Pike weighing a total of 78lb caught at Burley Fishponds on 26th December 1905 by G Welch and J Briggs. The largest fish was nearly 9lb (RCM)



Bullheads were easy to find in the River Gwash, usually hiding under stones
(Nick Giles)



Rudd were present in both arms of the River Gwash
(John Bailey)

Below: Tench were confined mostly to Burley Fishponds
(John Bailey)



Right: A Cormorant which had choked to death trying to swallow too large a Zander was washed up on the shore of Rutland Water by Normanton Church Museum in May 2005 (Mike Griffin)



Insects

The insect survey, led by Maurice (Monty) Tyler, was divided into three periods covering 1971/72, 1973/74 and 1975/76. There were 131 different insect species recorded in the first period, 154 in the second period and 224 in the third period. The areas surveyed in each period were different and so no meaningful comparison can be made between the diversity of species for each period. Light traps for trapping moths were operated in a number of fields. Of the eleven insect groupings, moth species were the most numerous in all three periods, accounting for 48-68% of the species recorded. The butterfly grouping accounted for 8-13% of species recorded. Across the six years of the survey, 368 different insect species were identified. The lists of all species recorded and their locations over the three 2-year periods were published in the *Before Rutland Water* report (RNHS 1981, 35-54).

Insect Species identified during the Survey

Grouping	Total number of species		
	1971/72	1973/74	1975/76
Mayflies	2	1	2
Dragonflies & Damselflies	8	7	6
Grasshoppers & Crickets	2	2	2
Bugs	2	3	7
Alder Flies & Lacewings	2	2	2
Scorpion Flies	1	1	0
Butterflies	17	15	19
Moths	63	105	149
Beetles	8	5	18
Bees, Wasps & Ants	15	6	8
Flies	11	7	11
Totals	131	154	224

First Insect Survey Period, 1971/72

Right: The Small Copper butterfly reappeared in a field close to Mow Mires Spinney during 1971
(Wikipedia)

The area surveyed during 1971 extended from Church Bridge in Empingham up the Gwash Valley to Bull Bridge. Three species were of special interest, two butterflies and a damselfly. The Common Blue and Small Copper butterflies reappeared in the area after an absence of seven years. The reason for this was thought to be a combination of favourable climatic conditions and an abandoned pasture producing plenty of Bird's-foot Trefoil and Common Sorrel, food plants of Common Blue and Small





Above: The Common Blue butterfly was recorded in 1971 in the same field as the Small Copper (D Zidar – Fotolia)

Copper larvae respectively. The third species to reappear was the Banded Demoiselle damselfly. A combination of the same climatic factors and less spraying was thought to be responsible.

The main areas surveyed in 1972 were Bull Bridge to Armley Wood, Normanton Fishpond to Brake Spinney and Gibbet Lane below Hambleton Wood. A light trap for trapping moths was operated in five fields.

Several fields in the Bull Bridge to Armley Wood section supported a range of butterfly species and Banded Demoiselle, Emerald (recorded as Green Lestes) and Common Blue damselflies thrived by the waterside. Other notable finds were the Poplar Hawkmoth and the Clouded Border moth.



Left: Banded Demoiselle damselflies were found in 1971 in a field close to Mow Mires Spinney (Tim Clough)

Below: Poplar Hawkmoth was recorded upstream of Bull Bridge in 1972 (RO)



In the Normanton Fishpond to above Brake Spinney section, a strong colony of the Common Green Grasshopper was found on the edge of Brake Spinney. Three damselflies, rare in the area, were also found in Brake Spinney, namely the White-legged Damselfly, the Beautiful Demoiselle and the Large Red Damselfly. There were a number of resident butterflies in nearby fields and the Brown Hawker dragonfly was also recorded.



Above: The Brown Hawker dragonfly was seen in 1972 close to Brake Spinney (Wikipedia)



Above: A colony of Common Green Grasshoppers was found in 1972 on the edge of Brake Spinney (Tim Caldecott)

Right: The Speckled Bush-cricket, found on the verge in Gibbet Lane, was a first record for Rutland (Philip Rudkin)



Gibbet Lane, the third area surveyed in 1972, had a rich and varied insect population. Butterfly species recorded were Orange Tip, Small Tortoiseshell, Gatekeeper, Meadow Brown, Ringlet, Large and Small Skipper, Brimstone, Peacock and Common Blue. The Speckled Bush-cricket (*Leptophyes punctatissima*), found on the verge of Gibbet Lane, was a first record for Rutland.

Second Insect Survey Period, 1973/74

The main areas covered were: the Gwash Valley from Gibbet Lane to the Manton-Oakham road; land to the south and east of Lax Hill; the lower parts of Hambleton, Barnsdale, Rushpit and Burley Woods; and the Burley Fishponds outflow.

The Gibbet Lane to the Manton-Oakham road section produced several species of butterfly and also several moths including the Narrow-bordered Five-spot Burnet, Mullein, Chimney Sweeper and Common Heath. The

larvae of the Narrow-bordered Five-spot Burnet were feeding on Yellow Vetchling and Bird's-foot Trefoil which were growing in the area. Occasional Banded Demoiselle and Common Blue damselflies were seen along the riverside. However, the most interesting find was the Common Field Grasshopper on the roadside verge by Sounding Bridge. Lax Hill and the surrounding fields proved to be a major stronghold of the Meadow Brown butterfly which was counted in the hundreds in 1973. The Large Skipper butterfly and Chimney Sweeper moth were found to be plentiful in a herb-rich meadow to the south-east of Lax Hill.

The woodlands in the survey area proved disappointing for butterflies and no true woodland species were recorded in Burley Wood. Moth trapping proved more successful, with good lists of species from all the woods, especially Hambleton Wood where Red Underwing and Peach Blossom moths were recorded.

The stream down from Burley Fishponds to Fox Bridge was productive with a good range of insect species including a strong colony of Orange Tip butterflies. In 1974, a Brimstone butterfly was observed egg-laying on Buckthorn near Fox Bridge. The larger dragonflies, the Brown Hawker and Southern Hawker, were common in the area of Burley Fishponds in 1973.

Below: In 1973, Lax Hill and the surrounding fields were a stronghold for the Meadow Brown butterfly (S Chushkin – Fotolia)

Right: Large Skipper butterflies were numerous in 1973 in a herb-rich meadow to the south-east of Lax Hill (Wikipedia)



Butterfly Species recorded during the Insect Survey Periods			
Species	Number of periods in which recorded	Species	Number of periods in which recorded
Large White	1	Red Admiral	3
Small White	1	Painted Lady	2
Green-veined White	3	Peacock	3
Orange Tip	3	Small Tortoiseshell	3
Brimstone	3	Small Copper	3
Wall Brown	3	Common Blue	3
Meadow Brown	3	Holly Blue	1
Gatekeeper	3	Dingy Skipper	1
Small Heath	3	Small Skipper	3
Ringlet	3	Large Skipper	3

Third Insect Survey Period, 1975/76

By 1975/76, field numbers had to be abandoned as the whole area was cleared of hedges and trees. The reservoir valley became a single large area of grass and herbs. There was, perhaps not surprisingly, a marked increase in those species which prospered in an open wasteland habitat. Butterflies such as the Meadow Brown, Gatekeeper, Wall Brown, Small Tortoiseshell, Peacock, Orange Tip, Small Copper and Large and Small Skipper all showed a marked increase from previous years. The Holly Blue butterfly was recorded for the first time in Snowdrop Spinney in June 1975. Moths showed a similar change with increasing numbers of those species preferring wasteland habitats. Species such as Large Emerald, Gold Spangle, Tissue, Shark, Shoulder-striped Wainscot and Bulrush Wainscot were all first records for the area. The day-flying Chimney Sweeper moth increased noticeably in 1975.

*Orange Tip
butterflies (seen
here on
Lady's-smock)
were more
prevalent
during 1975/76
(Wikipedia)*



The year 1976 was a record for uninterrupted sunshine, heat and drought favouring the butterfly population, especially the 'Browns'. Meadow Browns, Wall Browns, Gatekeepers and Large and Small Skippers were numerous. Other butterflies which had been quite scarce in the area such as Small Heath, Small Copper and Common Blue became common in areas where they had not previously been recorded. Moth trapping in 1976 was at Nether Hambleton, at Burley Fishponds and on the south bank of the River Gwash below Manton. New records for the Nether Hambleton area were Green Silver-lines, Cinnabar, Bordered White, Knot Grass, Poplar Kitten and Scorched Wing. Records of the Elephant Hawkmoth increased markedly with a maximum of ten recorded on 9th June 1976. Another newcomer to the area was the Mother Shipton moth found at Lax Hill, Nether Hambleton and below Barnsdale Wood.



Above: The Peacock butterfly prospered in the open wasteland habitats of 1975/76 (S Chushkin – Fotolia)



Above: The day-flying Chimney Sweeper moth increased noticeably in 1975 (Wikipedia)



Right: The Green Silver-lines moth was a new record for the Nether Hambleton area in 1976 (Wikipedia)

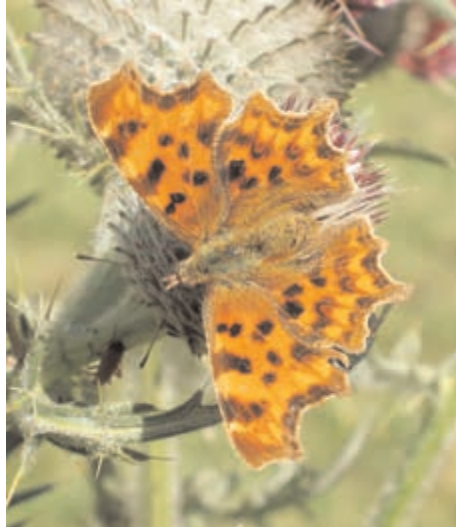
Damselflies and dragonflies were in similar numbers and areas as in previous years. Grasshoppers seemed to be on the increase in 1975/76 with four new sites being colonised by the Common Field Grasshopper. A Glow-worm was recorded in Burley Wood on 24th June 1976, a first record for that area.

Overall Summary – Insect Surveys

The Speckled Bush-cricket (*Leptophyes punctatissima*) found on the verge in Gibbet Lane in 1972 was a first record for Rutland and an interesting find.

Perhaps the most striking change over the six-year survey period was the significant increase in both the numbers and diversity of butterflies and moths during the last two years of the survey. However, there was also a similar trend throughout the countryside during this same period. Thus, it was difficult to say whether the main factor was favourable climatic conditions or the dramatic changes to the habitat in the Gwash Valley. It is likely that both factors played a part.

An interesting discovery was how quickly abandoned fields became colonised by the range of insects associated with the typical herb-rich hay meadows of the pre-1950s. A major mystery was the lack of typical woodland butterfly species in outwardly ideal woods such as Burley, Barnsdale and Hambleton. The authors of the survey report (RNHS, 1981) speculated that, with sympathetic habitat management in the future, the rarer butterflies such as Speckled Wood, Comma, Dark Green Fritillary and Purple Hairstreak, which had disappeared from the Gwash Valley, might return. Their speculation was largely correct; John Wright, of Rutland Water Nature Reserve, has confirmed that Speckled Wood, Comma and Purple Hairstreak are now commonly recorded in the Reserve.



Far Left: Purple Hairstreak, a butterfly not recorded in the 1971-76 Survey, is now commonly seen (Wikipedia)

Left: Comma, another butterfly not seen in the Survey, is now common in the Rutland Water Nature Reserve (Wikipedia)

Flora

The Botanical Survey, led by Janet Buchanan, started in Autumn 1971 and was completed in late 1974. In 1971, the main objective was to record the trees and shrubs in the Empingham to Normanton Bridge section of the River Gwash before they were felled and cleared. Unfortunately, around the area of the dam, some felling and clearing started just ahead of the survey. In 1972, the remaining flora of this area was recorded along with a more

thorough survey of the River Gwash as far as Fox Bridge below Barnsdale Wood in the north and Nether Hambleton in the south. Recording included Armley Wood, some thick spinneys at Whitwell and Hambleton and a rough scrubby bank at Edith Weston. During late 1972 and 1973, the remaining areas were recorded, namely to Sounding Bridge near Manton in the south and Burley Fishponds in the north, including the Burley Flooded Meadows and Willow Fen, other marshy areas by Burley Fishponds and at Nether Hambleton, Rushpit Wood, Burley Wood and Barnsdale New Wood. By 1974, the main recording had been completed.

The recording method was to walk all areas being surveyed once a month, ticking off common species on a check list, and listing uncommon species separately. All species were listed by area and field number. During the three survey years from 1971/72 to 1973/74, 412 different plant species were recorded in the Gwash Valley. A full list of all species identified was published in the *Before Rutland Water* report (RNHS 1981, 11-33).

Plants recorded in the Botanical Survey

<i>Group</i>	<i>Number of species recorded</i>
Horsetails and Ferns	11
Grasses, Sedges, Reeds and Rushes	74
Trees and Shrubs	67
Herbaceous Plants	260
Total	412

Horsetails and Ferns

Just three species of the primitive horsetail and eight species of fern were recorded during the Botanical Survey. The ferns were mainly in Hambleton, Armley, Burley and Barnsdale Old Woods. In the north of Hambleton Wood, above the level of felling and against a small waterway, a colony of Hard Shield Fern was found in Spring 1973. Male Fern, Broad Buckler Fern and Lady Fern were all abundant in Armley Wood, and a few plants of Bracken and Scaly Male Fern (listed as Golden Scaled Fern) were also found. Hartstongue was recorded on the parapet of the causeway dividing the two Burley Fishponds and Black Spleenwort on the old brickwork by the railway bridge over the A6003 near Sounding Bridge.

Hard Shield Fern was found in Hambleton Wood in Spring 1973
(Wikipedia)



Grasses, Sedges, Reeds and Rushes

There were 74 species of grasses, sedges, reeds and rushes listed in the *Before Rutland Water* report (RNHS 1981, 11-33). Two of these, Lesser Reedmace (*Typha angustifolia*), listed in the survey as Lesser Bulrush, and Greater Tussock Sedge (*Carex paniculata*), listed as Tussock Sedge, were reported as first records for Rutland. However, there was an earlier record of Lesser Reedmace at Foster's Bridge on the River Chater in 1933 (Messenger 1971, 95).



Greater Tussock Sedge, recorded in Mow Mires Marsh in 1971, was a first record for Rutland (Wikipedia)



Lesser Reedmace, recorded in 1972 on the bank of the Gwash in the Edith Weston sector, was a rare find for Rutland (Fotolia)

Some species recorded in the Empingham to below Edith Weston section of the main river included Greater Tussock Sedge (from Mow Mires in 1971), Greater Pond Sedge, Reed Canary-grass (listed as Reed-grass), Plicate Sweet-grass (listed as Sweet-grass), Reed Sweet-grass (listed as Great Water Grass), Wood Club-rush, Bulrush (Common Club-rush), and Lesser Reedmace. Under the instruction of Janet Buchanan, clumps of Lesser Reedmace were lifted, using a mechanical digger, and transplanted in the upper reaches of the River Gwash near to Gunthorpe. Unfortunately, it did not survive. Some of the Greater Tussock Sedge was also lifted and transplanted near to Burley Fishponds, and did survive.



Lesser Reedmace being excavated for transplanting in the River Gwash near Gunthorpe witnessed by Guy Messenger (left), author of Flora of Rutland (Jim Eaton)

The survey continued along the main River Gwash from Edith Weston to Nether Hambleton and Gunthorpe. Species recorded included Wood Meadow-grass, Greater Pond Sedge, Cocksfoot, Bearded Couch, Creeping Soft-grass (in Hambleton Wood), Tufted Hair-grass, Glaucous Sedge, Lesser Pond Sedge, Quaking Grass, Common Sedge, several other Sedge species, Unbranched Bur-reed (listed as Small Bur-reed), Branched Bur-reed, Common Bulrush and Common Reedmace (listed as Greater Reedmace or False Bulrush).

A detailed botanical survey was also conducted along the north arm of the Gwash from Bull Bridge to Burley Fishponds. Species recorded were Greater Pond Sedge, Common Couch, Bearded Couch, Slender Tufted Sedge (recorded as Graceful Sedge), Lesser Pond Sedge, Fern Grass, Common Reed (listed as Reed), Common Reedmace, Branched Bur-reed, Oval Sedge and Sharp-flowered Rush.



Above: Branched Bur-reed was recorded at several locations along the River Gwash (Wikipedia)



Left: The reedbed in the Upper Burley Fishpond, looking from the causeway (RNHS, 1981)

Trees and Shrubs

There were 67 species of trees and shrubs recorded in the Botanical Survey between 1971 and 1974 (RNHS 1981, 11-33). The range of species was much as expected for the habitat type. There were sixteen Willow species/hybrids associated with the River Gwash, including the north arm and Burley Fishponds. Another feature was the presence of Alder trees, which were growing alongside the river in numerous areas either singly, or in belts. A few illustrative excerpts from the RNHS (1981) report are given below.

Willow Species and Hybrids recorded in the Botanical Survey

Bay Willow	Pussy Willow (Great Sallow)
White Willow	Common Sallow
Weeping Willow	Eared Sallow
Crack Willow	Goat Willow
<i>Salix decipiens</i>	
Almond Willow	
Purple Willow	
<i>Salix x rubra</i>	
Common Osier	
<i>Salix caprea x viminalis</i>	
<i>Salix cinerea x viminalis</i>	
<i>Salix calodendron</i>	

The description for the trees and shrubs on the island in Normanton Fishpond was: 'Among these trees was a Black Poplar, Silver Birch, Wych Elm, several Alder, Sycamore, and a big Grey Poplar making a beautiful colour contrast with its leaves. These big trees were thickly spaced, with a few low shrubs, including Box, Snowberry, Willows and Dogwood . . . '.

Continuing along the river to the south west of Normanton Bridge was 'an almost impenetrable wilderness with very thick scrub, partly planted with young Willows and Poplars, and with a belt of large Alders by the river . . . '. One of the Edith Weston fields below Hambleton Wood 'had a large steep bank down to the river thickly covered with shrubs There were two Oak trees, Hawthorn, Blackthorn, Ash, one Alder and willows: Crack Willow and Goat Willow'.

The description in the survey report for Hambleton Wood was 'mixed deciduous, the southern edge was thick with Blackthorn and there were numerous Hazels showing yellow in the bare wood in early spring. The trees were mostly Oak, Ash and Maple, with an occasional Willow, thorn and Crab Apple'. In Snowdrop Spinney below Hambleton 'were many well grown trees of Oak, Ash, Wych Elm, Horse Chestnut, Sweet Chestnut, Norway Spruce and Common [European] Larch. On the southern boundary were many bushes of Cherry Plum'.

Armley Wood, alongside the north arm of the River Gwash was described as 'consisting of well grown mixed deciduous trees, three quarters of which fell victim to the reservoir workings, [and] was perhaps the worst casualty amongst the woodland habitats of the survey. The wood came right to the bank of the river . . . and contained Maple, Sycamore, Silver Birch, Beech, Ash, Oak, Horse Chestnut and two kinds of Elm among its trees. Among the smaller trees and bushes were both Hawthorns, Blackthorn, Dogwood, Elder, Wild Plum, Box and Red Currant. Ground cover was very thick with Blackberry . . . '.

A more detailed description of the trees and shrubs recorded in the Botanical Survey can be found in the *Before Rutland Water* report (RNHS 1981, 11-33). Although many trees were lost when the area to be inundated was cleared, thousands of new trees were planted around the perimeter of Rutland Water (Ford 1982, 47-50; Gill 1982, 51).

Herbaceous Plants

Two hundred and sixty species of herbaceous plant were recorded during the 1971 to 1974 Botanical Survey. The number of species was swelled by the rich crop of casuals which invaded abandoned arable fields, felled and cleared woodland and areas of bare ground created by the various construction activities. None of the 260 species was a new record for Rutland although Golden Dock (*Rumex maritimus*) had not been seen since 1900. Another unusual find in 1971 was a large clump of Small Teasel (*Dipsacus pilosus*) under trees in a field just downstream of Bull Bridge. Occasional plants of Small Teasel were also found in nearby fields. The full list of herbaceous plants recorded is given in the *Before Rutland Water* report (RNHS 1981, 11-33). A few typical extracts from this report are given in the paragraphs below.



Yellow Water-lily was recorded in several sections of the River Gwash (Wikipedia)

The main interest in three Normanton fields was in the River Gwash where there was 'Curled Pondweed and Fennel Pondweed, Yellow Water-lily and, against the low banks Purple Loosestrife, Pink Water Speedwell . . . and common Water Forget-me-not'. On the north bank of the Gwash to the west of Normanton Bridge 'There was a rough bank of varying width most of the way, growing Marsh Woundwort, common Teasel, Hemlock, Hedge Bedstraw, an occasional bright Meadow Cranesbill and quantities of Nettle and rough grass'. Some old grass pastures on the south bank of the river had 'Cowslip, Red Clover and, most interesting of all, Meadow Saxifrage; some of this latter plant was saved for replanting on in the Rutland Water Nature Reserve'.



Above: A clump of Small Teasel was found downstream of Bull Bridge (Wikipedia)

Left: Purple Loosestrife was common along the river banks (S Camp – Fotolia)

In the river below Hambleton Wood, 'Water plants provided the most interest: Curled Pondweed . . . [and] Yellow Water-lily, while on the banks there was the inevitable Water Figwort, Water Chickweed, common Water Forget-me-not and various willow-herb, found everywhere during the survey'. The ground cover in Hambleton Wood 'was Dog's Mercury, Bluebell . . . Tormenitl, Barren Strawberry, Primrose, Wood Dog Violet [and] Bugle . . .'. One dead plant of Broad-leaved Helleborine (recorded as Common Helleborine) was seen in a cleared section of Snowdrop Spinney.



One dead plant of Broad-leaved Helleborine was found in Snowdrop Spinney (Wikipedia)

Right: Cowslips were found upstream of Normanton Bridge and elsewhere (Wikipedia)



In the wide rough bank of one of the arable fields in the Hambleton Bridge to Lax Hill section, growing in the shade of some trees, were *Bluebells were prolific in Hambleton and Armley Woods (SS)*

Violet; where it was more sunny . . . there were Cowslips and Hairy St John's Wort. In the river itself were Yellow Water-lily . . . and Curled Pondweed'. In the river just upstream was the only patch in the whole survey of Blue Water Speedwell, the first record of Canadian Waterweed, and Yellow Water-lily.

Orchids were uncommon in the Botanical Survey area. However, in a marshy field by Beehive Cottage in Nether Hambleton, Early Marsh Orchid, Southern Marsh Orchid and their hybrids were recorded. Also found were Yellow Rattle, Pink Water Speedwell and Tufted Forget-me-not. Southern Marsh Orchids were also found in a small marshy area just to the east of Burley Fishponds. The only other location with orchids was Barnsdale New Wood with both Early Purple Orchid and Common Spotted Orchid.



*Early Purple
Orchid was found
in Barnsdale New
Wood (K Hewitt –
Fotolia)*



*Southern
Marsh Orchids
were seen in
marshy fields
both by Nether
Hambleton and
by Burley
Fishponds
(pdtnc –
Fotolia)*

To the south of Lax Hill, a small dense spinney cleared early in 1973 later revealed some interesting ground cover plants. These included ‘. . . Dog’s Mercury, Moschatel and quantities of Field Forget-me-not making a marvellous blue. On the damp ground was Pink Water Speedwell, Yellow Rattle, Fool’s Watercress . . . and Persicaria. Among the plants which immediately came into their own when the bushes had gone, Red Campion was especially common and by 1974 there was a thick crop of Nettles, Teasels and [Greater and Lesser] Burdocks’.

The fields alongside the north arm of the River Gwash from Bull Bridge to Burley Fishponds were also surveyed. In two fields just upstream from Bull Bridge, Creeping Jenny, Field Forget-me-not and Lady’s-smock were recorded. Further upstream in a field to the south of Whitwell ‘was a pale pink Musk Mallow, the only one of the survey’. Ground cover in the adjacent Armley Wood ‘was very thick with . . . Bluebell, Dog’s Mercury and Greater Stitchwort. In one corner there was a patch of Moschatel and, where there was a small watercourse . . . Primrose, Yellow Archangel, Wood-sorrel, Water Avens, Wood Speedwell and Common Dog Violet . . .’. The Fox Bridge to Burley Fishponds section supported some interesting species including Germander Speedwell (recorded as Bird’s Eye Speedwell), Butterbur, Lady’s Bedstraw, Lady’s-smock, Marsh Marigold (recorded as Kingcup), Fennel Pondweed, Curled Pondweed, Ragged Robin and Fen Bedstraw.

*Marsh Marigold (Kingcup) was
found upstream of Fox Bridge
(D Freer – Fotolia)*





*Left: Ragged Robin was recorded between Fox Bridge and Burley Fishponds
(C Chushkin – Fotolia)*

Below: Golden Dock, growing on disturbed ground near Burley Fishponds, had not been seen in Rutland since 1900 (Wikipedia)



The final part of the Botanical Survey was the Burley Fishponds to the Burley Flooded Meadows section. Some of the more interesting species recorded were Rue-leaved Saxifrage (listed as Fingered Saxifrage), Cornsalad, Kingcup, Butterbur, Pink Water Speedwell, Amphibious Bistort, Tufted Forget-me-not, Mare's-tail, Nodding Bur-marigold, Lesser Spearwort, Celery-leaved Buttercup, Marsh Ragwort, Marsh Yellow-cress, Many-seeded Goosefoot, Red Goosefoot, Field Penny-cress (recorded as Common Penny-cress), and Common Fumitory. Most interesting of all were three plants of Golden Dock (*Rumex maritimus*) on some disturbed ground, the first record in Rutland for over 70 years.

Botanical Survey – Conclusions

The range of flora found was much as would be expected from a largely agricultural area, with only a few unusual or rare species. The Greater Tussock Sedge (*Carex paniculata*) and Lesser Reedmace (*Typha angustifolia*) were two rarities for Rutland. Small Teasel (*Dipsacus pilosus*) appeared in the Normanton section and Golden Dock (*Rumex maritimus*) was found on some disturbed ground at the Burley Flooded Meadows, having last been recorded in Rutland in 1900. Orchids were relatively scarce and there was just a single dead stem of the Common Helleborine (*Epipactus helleborine*) found in Snowdrop Spinney below Hambleton.

It was concluded that ‘Except, therefore, for the lamentable loss of rich woodland habitats, the debit side of the reservoir works is not too serious and perhaps we shall benefit from the increased wetlands in the future’.

Later Surveys

Some selected surveys did continue after the reservoir had filled. Jane Ostler (Ostler 1990, 72-75) led a RNHS devised five-year study (1978-1982) of the Barnsdale Picnic Site and Wooded Walk areas which had remnants of ancient woodland, improved and permanent grassland and a conifer plantation. They were surveyed on the first Sunday of each month from January 1978 to December 1982. During the five years, 232 species of flowering plant and 100 species of bird were recorded. Some of the most interesting species were the indicators of ancient habitat such as Moschatel, Early Purple Orchid, Broad-leaved Helleborine, Small Teasel, Dog’s Mercury, Pale Wood Violet, Water Avens and Primrose. By the end of this period, some flowering plants such as Perennial Flax had disappeared. Though Soft Rush and Water Forget-me-not had spread from ditches to the water’s edge, no new aquatics had appeared. Butterflies were little affected except that Orange Tip and Common Blue became scarce.

Although liverworts, mosses, fungi and lichens were not included in the 1971-1976 RNHS Survey, they were studied in later RNHS surveys (Jeeves 1990, 68-70).