

NINE WELLS LNR SUMMARY MANAGEMENT PLAN 2004-2007

A VISION FOR NINE WELLS LOCAL NATURE RESERVE



Cambridge City Council declared Nine Wells as a Local Nature Reserve on the 31st January 2005.

On the 9th February 2004 a committee was formed to oversee the continued conservation and enhancement of the habitat and species of the site, and to investigate the opportunities for education and access.

This summary management plan outlines the principal objectives of the 'Friends of Nine Wells LNR Group'.

The objectives set out in this management plan reflect the collective vision of the group and provides the opportunity to work towards the rejuvenation of this historically important site.

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Prepared by the 'Friends of Nine Wells LNR' Committee

February 2004

Site Details

Site Name:	Nine Wells LNR
Local Planning Authority:	South Cambridgeshire District Council. For the purposes of LNR designation they have agreed to delegate their powers to Cambridge City Council as the site lies within their administrative boundary.
Ownership:	Freehold owned by Cambridge City Council and the University of Cambridge. The Hobson Conduit Trust is responsible for the management of the watercourses and riparian areas up to 2m from top of bank.
Area:	1.2 Hectares
Grid Ref:	TL462543
Conservation Status:	Declared LNR 31 st January 2005. Previously a SSSI for its rare relic macro-invertebrates, the drought of 1976 caused the springheads to dry up completely causing the complete loss of this fauna and led to the de-declaration of SSSI status shortly after. City Wildlife Site in Cambridge Local Plan(NE12-14). The site qualifies as a County Wildlife Site as a chalk stream (criterion 2.14). The site is also within the Wildlife Corridor in Cambridge Local Plan (NE15). The site also contains a Monument commemorating the construction of the Hobson Conduit.
Byelaws:	None
Access:	The site has free, open access throughout. There are 5 footbridges within the site allowing access over the watercourses. There are two pedestrian access points via footbridges from the adjoining track for which permissive access is provided. A 1.1km public footpath from Granham's Road (TL471543) provides access to the NW boundary of the site.

Summary Description

Located 4km South of the City of Cambridge, Nine Wells is a small copse with mature Beech trees (c.225m long x 75m wide) some 1.2 ha in extent and contains springheads, which are the source of the Hobson Conduit. The site straddles a break in slope between the rolling 'Chalklands' to the south and the flatter 'Claylands' to the north and represents a principal landscape feature within the surrounding arable fields.

Geology

The site lies on the outcrop of the Totternhoe Stone (or Burwell Rock), a hard and fissured band in the Lower Chalk, underlain by clayey impermeable 'Chalk Marl', and overlain by the more permeable 'Grey Chalk'. The soil type is a thin chalk loam.

Geomorphology

The site slopes on a NW facing aspect at no more than 17mOD. The principle geomorphic features of the site are a number of well-developed springheads, which are active throughout the year. There are four main springheads linked by stream channels, and innumerable minor fissures that issue water at a constant c.10.2 °C. The constancy of this aquatic environment once supported a relatively rare macro-invertebrate fauna that warranted the site being protected as an SSSI. However, the drought of 1976 caused the springheads to dry-up completely

causing the loss of this fauna, and causing the de-declaration of the SSSI status. At the present time the springheads are mostly overgrown, and in one case partly in-filled. The chalk stream channels are also heavily shaded and tend to be choked by organic debris. As a result the channels contain little emergent vegetation. The combination of Seasonal low flow in August/September and accumulation of organic debris, has led to a reduction in water quality and the paucity of aquatic fauna.

Flora

The site is enclosed by a hedgerow not thought to be ancient and includes species such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Elder (*Sambucus nigra*), Spindle (*Euonymus europaeus*), and Ivy (*Hedera helix*). Recent in-fill planting of Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), Field Maple (*Acer campestre*), Holly (*Ilex aquifolium*) and Crab apple (*Malus sylvestris*) aims to prevent inappropriate access to the site and to improve the diversity of the hedgerow.

A drainage ditch also carrying spring water runs along the NW boundary with notable bankside species such as Cowslip (*Primula elatior*).

The site consists of semi-natural secondary woodland dominated by planted mature Beech (*Fagus sylvatica*) with some mature Ash (*Fraxinus excelsior*) in the NW, and Silver Birch (*Betula pendula*) and Whitebeam (*Sorbus aria*) in the SW corner. The canopy also contains a high percentage of Ivy (*Hedera helix*). The understorey is well developed in areas of the woodland where the canopy is less dominated by the Beech and Ivy. Hawthorn (*Crataegus monogyna*), Spindle (*Euonymus europaeus*), Wild Privet (*Ligustrum vulgare*), Yew (*Taxus baccata*), Holly (*Ilex aquifolium*), Ash (*Fraxinus excelsior*) and Elder (*Sambucus nigra*) are present. There is little standing dead wood present.

There is little to no field layer throughout the site with Bramble (*Rubus fruticosus* agg) present only alongside the watercourses. The ground flora is dominated by Ivy (*Hedera helix*) with other notable species such as Stinking Iris (*Iris foetidissima*), Cuckoo Pint (*Arum maculatum*) and Deadly Nightshade (*Atropa bella-donna*). An area of rough grassland exists at the southern end of the site containing species such as Common Couch (*Elytrigia repens*).

108 species (appendix 1.0) in total have been recorded at the site through Botanical surveys carried out by the Cambridgeshire Flora Group. Further survey work is required to determine lower plant communities.

Fauna

The variety of habitats within this small site has a high potential value to invertebrates. Further study is required to determine species present, valuable habitat features and the potential for improvements. Species currently recorded include Spindle Ermine moth (*Yponomeuta cagnagella*) and Speckled Wood butterfly (*Pararge aegeria*).

Further study is also required to determine the present of reptile and amphibian populations though frogs (*Rana temporaria*) have been recorded.

Foxes (*Vulpes vulpes*), Muntjac Deer (*Muntiacus reevesi*), Grey Squirrels (*Sciurus carolinensis*) and Badgers (*Meles meles*) frequent the site. There are a number of Rabbit burrows within the SE corner boundary of the site. Further study of small mammals and Bats is required.

The site is an important refuge for birds, with Sparrowhawk (*Accipiter nisus*), Green Woodpecker (*Picus viridis*), Long Tailed Tit (*Aegithalos caudatus*), Bullfinch (*Pyrrhula pyrrhula*) and Redwing (*Turdus iliacus*) recorded as well as a variety of finches, tits, thrushes and warblers.

Rarity of Habitat

The site contains a chalk stream, woodland, scrub and boundary features such as the Hedgerow and ditch all identified as priority habitats under the Cambridgeshire Local biodiversity Action Plan 1998.

Historical and Cultural Importance

Nine Wells is of a local heritage value for its historical and geological interests. As the source of the Hobson Conduit, Nine Wells once provided the City of Cambridge with clean drinking water. Thomas Hobson was a wealthy owner of coaching stables and he left money to help finance the construction of the conduit. The engineering works carried out to canalise sections of the watercourse had a considerable impact on the lives of Cambridge Residents.

To commemorate this achievement a monument was constructed and it is situated in the SE corner of the site.

Recreational Use

There are two designated access points to the site over wooden bridges but users have created other inappropriate access points. Within the site a network of paths and 3 wooden bridges allow access over the streams. The site is well used by the general public for dog-walking and general outdoor leisure. The use of mountain bikes and motorcycles at the site has resulted in potentially serious damage to the paths, bridges, stream channels and most importantly the north-eastern springhead. There is no public vehicular access to the site.

Current Management

The site is currently managed with help from volunteers supervised by Ellis Selway (LNR Community Reserves Officer) of Cambridge City Council and Iain Webb (Project Worker) of the Cambridge Greenbelt Project.

Streetscene (Cambridge City Council) are responsible for the general maintenance of the site under the guidance of Parks & Recreation Department. A general maintenance plan has been drawn up for the site but this needs to be reviewed in order to maximise its potential in assisting in the management of the site and to promote sensitive management. The stream channels are the responsibility of the Hobson Conduit Trust.

Threats and Opportunities

The locality of the site in relation to the proposed Southern Fringe Development under Cambridge City Council's Draft Local Plan 2003 could have a massive impact on the site. The opportunity to extend the site i.e. to create a buffer from the development and to offset the potential increased usage needs to be investigated.

The management of the site will be dependent on the continued efforts of volunteers. Management operations have therefore been considered using current levels of resources.

Maintenance carried out by Streetscene will need to be reviewed in light of these new objectives.

Potential management options are given. Further investigation is required to conclude whether these operations would enhance the site. It is envisaged that the findings will help to form a Full Management Plan by 2007. In addition the cost of these operations would require additional funding.

Key Aim

The following key objectives were agreed at the inaugural 'Friends of Nine Wells' meeting held on 9th February 2004. A committee has been formed to oversee the conservation and enhancement of the habitat and species of the site and to investigate the opportunities for education and access.

Site Objectives

- 1. To enhance the chalk streams. (LHAP for Cambridgeshire- Rivers & Wetlands)**
- 2. To enhance the woodland areas and encourage a diverse structure in the ground flora. (LHAP for Cambridgeshire-Trees & Woodlands)**
- 3. To enhance the ditch which forms the NW boundary. (LHAP for Cambridgeshire- Drainage Ditches)**
- 4. To enhance the hedgerow as a boundary feature. (LHAP for Cambridgeshire- Farmland)**
- 5. Investigate the potential expansion of the site to incorporate new features such as meadows and/or buffer zones**
- 6. To undertake various survey works for notable site species to ascertain habitat management priorities**
- 7. To improve and enhance access within the site**
- 8. Investigate the potential to improve footpath access to the site with links from the City**
- 9. To develop the interpretation and educational value of the site**
- 10. To maintain the site under Health & Safety regulations**
- 11. To involve the local community/users of the site in its management and protection.**

Management Rationale and Operations

Please refer to the management table and maps for details of locations and timing for the following operations

Objective 1- To enhance the chalk streams. (LHAP for Cambridgeshire- Rivers & Wetlands)

Rationale

Improve aquatic habitat through the removal of organic debris and by reducing shading of springheads and watercourses.

Operations

Please note:

Works were carried out in the winter of 2004 to improve the flow of the stream and to remove the existing weir. The impact of these works has had a positive impact on the flow of the stream but also a negative impact on the bankside vegetation. The contractors who carried out the work were not supervised as agreed and the impact of their actions was not favourable. Any further mechanical clearance of the watercourse must consider the possible negative impacts.

The following operations must only be carried out between September-February:

- 1.1 Working in an upstream direction, reduce overhanging vegetation on a 2-year rotation and remove cut material onto bank.
- 1.2 Cut bank-side vegetation up to 2m from top of bank, on 5 year rotation on alternate sides
- 1.3 Introduce selective pollarding of bank-side trees, cut on rotation >10 years
- 1.4 Reduce the build up of organic debris** in channels/springheads on 3-year rotation. All debris removed should be used to create habitat piles close to the watercourses where possible.*

*(Any major operations to remove silt/organic debris must be retained on one bank only and on site for no more than two weeks to allow aquatic invertebrates to return to their habitat. After which all extracted material should be removed off site and spread, for which the adjoining landowner has granted permission.)

**Larger size timber should be maintained within the watercourse to encourage invertebrates that utilise this scarce habitat

Potential management options

- Remove existing weir and install a new weir at the exit pool in order to maintain water depth in times of low flow
- Using machinery re-establish the springheads by grading them back to their natural form. This would also involve the reduction of silt from the existing water channels
- Install a low flow pump to maintain water levels favourable for aquatic invertebrates
- Using machinery to selectively deepen some water channels to achieve year round flows
- Selectively thin Beech trees to reduce accumulation of leaf litter in channels
- Through management of springheads and channels re-create conditions favourable for the re-introduction of *Crenobia alpina* and *Agapetus fuscipes*.

Objective 2-To enhance the woodland areas and encourage a diverse structure in the ground flora. (LHAP for Cambridgeshire-Trees & Woodlands)

Rationale

Improve the structure and diversity of the woodland through selective management operations*.

**At present the woodland is heavily shaded and dominated by ivy especially the ground layer. There is a lack of structural diversity and open space both of which could be created by management intervention. Ivy provides important habitats for invertebrates, bats, birds and small mammals. It is not parasitic and does not kill its host. The natural evolution means that ivy will dominate the woodland over a period of time. The removal of ivy will only be justified when particular specimens of plants or trees are threatened by competition, or where it is removed to create or enhance the woodland structure or open space.*

Operations

**The following operations must only be carried out between September-February:
(Please note the Ivy should not be removed from any tree without the permission of the group).**

- 2.1 Prevent scrub encroachment of grassland in SW corner by cutting scrub on 3-year rotation and remove cuttings.
- 2.2 Selectively thin/coppice trees to promote regeneration of understorey. (Bat/Bird Survey required before any works)
- 2.3 Maintain mature spindle stool by the monument. Coppice spindle saplings on 10 year rotation
- 2.4 Create alternate bays along existing pathways. Cut on 5-year rotation.
- 2.5 Retain Ivy on Mature Ash trees in NW corner to a level of approx 3m to reduce risk of wind blow
- 2.6 Increase the amount of standing deadwood by ring barking 5 selected trees.
- 2.7 Remove any overhanging branches of adjoining track to height of approx 2.5m for agricultural vehicular access
- 2.8 Monitor the formation of Ivy on Mature tree species and prevent any excessive shading of water channels
- 2.9 Maintain visual sight line of monument from Railway line
- 2.10 Maintain lower Beech limbs to allow mechanical access to water channels

Any cut material should be used to create small habitat piles in a variety of areas throughout the site. The number of habitat piles should be monitored and removed if there is an increased risk of fire through vandalism.

Potential management options

- Selectively thin Beech trees to reduce shading and leaf accumulation
 - Develop understorey by planting native species of local provenance
 - Through planting a new area, introduce a coppicing regime to create a diversity of habitat
 - Create a small glade through the removal of Ivy and existing trees
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Objective 3-To enhance the ditch which forms the NW boundary. (LHAP for Cambridgeshire-Drainage Ditches)

Rationale

Maintain the diversity in the boundary ditch through rotational clearance of the channel and cutting of the bank.

Operations

The following operations must only be carried out between September-February:

- 3.1 Remove any accumulation of silt/debris on a 3-year rotation by either mechanical or manual means. All debris removed should be used to create habitat piles close to the watercourses where possible.*
- 3.2 Cut the banks alternatively by mechanical means on 3-year rotation to promote flora diversity.

*(Any major operations to remove silt/organic debris must be retained on one bank only and on site for no more than two weeks to allow aquatic invertebrates to return to their habitat. After which all extracted material should be removed off site and spread, for which the adjoining landowner has granted permission.)

Potential management options

- Restructure ditch to promote emergent vegetation growth to improve the habitat for use by species such as Water Voles (BAP Priority Species). (Conduct Water Vole survey determine nearest population)
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Objective 4-To enhance the hedgerow as a boundary feature. (LHAP for Cambridgeshire-Farmland)

Rationale

Increase the diversity of the hedgerow through additional planting of local provenance native species and management of existing species.

Operations

The following operations must only be carried out between November- February:

- 4.1 Replant gaps using double rows 0.50cm apart with 0.25cm spacing between trees, within existing hedgerow using native species of local provenance (as specified in Cambridgeshire Landscape Guidelines) Use Dead hedging to protect new planting
- 4.2 Maintain new planting by removing competitive plants which may/are restricting growth. (This operation should be carried out by hand and can be done throughout the year)
- 4.3 Monitor the growth of Ivy and Elder within the existing hedgerow. Reduce if appropriate and replant with native tree species
- 4.4 Trim all boundary hedgerows except South hedgerow by mechanical means on a 3-year rotation. Allow hedgerow to develop A-shape form and not box-shape.
- 4.5 Allow Southern hedgerow to develop naturally. Maintain entrance through to adjoining field. Monitor development of hedgerow.

Potential management options

- Allow sections of the hedgerow to grow without cutting for approx 10 years to provide the opportunity to lay sections and provide a diversity of structure
 - Re-establish hedgerow on adjoining land in partnership with adjoining landowners
 - Encourage the adjoining landowner to develop the existing track into a 5-10m buffer grass strip along the SE boundary through an agri-environment scheme
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Objective 5- Investigate the potential expansion of the site to incorporate new features such as meadows and/or buffer zones

Rationale

Investigate the potential to increase the overall size of Nine Wells LNR and the incorporation of new habitats to act as a buffer against future conflicts of use.

Operations

- 5.1 On going research into possibilities.

Potential management options

- Investigate the potential inclusion of the triangular parcel of land between the railway line and the Southern boundary as a meadow within LNR status
 - Investigate the potential to incorporate the Canalised section of Hobson Conduit up to the Railway line under LNR Status and introduce the ditch management regime currently adopted on the NW boundary
 - Investigate the potential to include additional parcels of land under conservation management including the field on the NW boundary up to the City boundary
 - Investigate the potential to provide additional copses within the landscape character along the existing footpath running SE to NE and to incorporate them within LNR status
 - Encourage the adjoining Landowner to submit existing arable fields under agri-environment scheme and/or to incorporate elements of other conservation schemes. Seek advice from FWAG & DEFRA.
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Objective 6-To undertake various survey works for notable site species to ascertain habitat management priorities

Rationale

An essential element of the continued development of a full management plan, survey work will help us prioritise our efforts for habitat and species protection.

Operations

6.1 Undertake/commission surveys using generic, species specific and general observations to create a detailed picture of species present

Potential management options

- Create a detailed database of species present
 - Show as spatial data with the use of a GIS package to aid future management
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Objective 7-To improve and enhance access within the site

Rationale

To create an established path network with improvements to the existing site furniture.

Operations

- 7.1 Monitor and maintain the 5 wooden bridges to provide safe access
- 7.2 Update and then maintain existing way-markers on NW boundary
- 7.3 Between April- November maintain overhanging vegetation to allow safe access around the site
- 7.4 Restrict access on site to main path by using natural methods i.e. brash to direct the public away from desire lines.
- 7.5 Monitor the surface of the main path network

Potential management options

- Update all existing bridges to conform with new DDA 1995 regulations
 - Investigate the need for steps/ramp by the monument to aid access down the slope
-

Objective 8- Investigate the potential to improve footpath access to the site with links from the City

Rationale

To improve the existing path network from the City to allow access for all users

Operations

8.1 On going research into possibilities.

Potential management options

- Investigate the potential creation of new footpaths, bridleways and cycle routes as links to the site from the city. Research the positive and negative effects on the site.
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Objective 9-To develop the interpretation and educational value of the site

Rationale

Provide an interpretation board in character with the site and investigate the potential use of the site as an educational resource.

Operations

- 9.1 Design and install new interpretation board on NW entrance to the site by Summer 2005
- 9.2 Provide opportunities for learning on site through adult training events, school visits and social events
- 9.3 Design a new interpretation leaflet detailing the historical and ecological importance of the site. Complete by Summer 2005
- 9.4 Provide information for inclusion on the proposed LNR Website of site details, management plan, events and educational resources. Complete by Summer 2005.

Potential management options

- Investigate the potential adaption of the site to provide suitable areas for education activities i.e. dipping platform
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Objective 10- to maintain the site under Health & Safety regulations

Rationale

Monitor the site through Health & Safety checks and to provide risk assessments for all activities.

Operations

- 10.1 Complete monthly site maintenance checks
- 10.2 Organise the removal of litter as and when required
- 10.3 Write Risk Assessments as and when required

Potential management options

- Investigate the Health & Safety implications of all proposed work.
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Objective 11-To involve the local community/users in its management and protection

Rationale

Continue the inclusion of the community in the management and use of the site.

Operations

- 11.1 Develop the 'Nine Wells LNR Friends Group'
- 11.2 Encourage the wider use of the LNR through promotion, public events, educational visits and volunteer work parties
- 11.3 Continue partnership with City Greenbelt Project
- 11.4 Provide opportunity to advertise on site and to promote through local media

Potential management options

- Encourage the establishment of voluntary wardens
 - Develop 'Nine Wells LNR Friends Group' area on LNR website.
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Management Operations 2004-2007

OBJECTIVE OPERATIONS	MAP REF	YEAR 1		YEAR 2		YEAR 3	
		MAR-SEPT	OCT-FEB	MAR-SEPT	OCT-FEB	MAR-SEPT	OCT-FEB
1.1			Cut ½ of overhanging channel vegetation		Cut other ½ of overhanging channel vegetation		Cut ½ of overhanging channel vegetation
1.2			Cut 1/5 th of bank-side vegetation		Cut different 1/5 th of bank-side vegetation		Cut different 1/5 th of bank-side vegetation
1.3			Pollard selective bank-side trees				
1.4			Reduce organic debris in 1/3 rd of channels		Reduce organic debris in different 1/3 rd of channels		Reduce organic debris in different 1/3 rd of channels
2.1			Cut 1/3 rd of grassland		Cut different 1/3 rd of grassland		Cut different 1/3 rd of grassland
2.2			Selective thin/coppice of canopy				Selective thin/coppice of canopy
2.3			Maintain spindle stool by monument		Coppice spindle saplings by monument		
2.4			Create alternate bays along pathway				
2.5			Reduce Ivy from Mature Ash crown to a level approx 3m				Reduce Ivy from Mature Ash crown to a level approx 3m
2.6			Ring bark 5 selected trees				
2.7			Maintain overhanging branches to height of 2.5m over track		Maintain overhanging branches to height of 2.5m over track		Maintain overhanging branches to height of 2.5m over track
2.8			Monitor Ivy on Beech trees		Monitor Ivy on Beech trees		Monitor Ivy on Beech trees
2.9			Maintain sight line Of monument From railway line		Maintain sight line Of monument From railway line		Maintain sight line Of monument From Railway line
2.10			Maintain access for machinery by removing beech limbs				

Appendix 1.0: Nine Wells Botanical Record

Key	Scientific name	Common name	Date	Grid_ref.	Source of record
44679	Alliaria petiolata	Garlic Mustard	14-Jul-94	TL461542	Bacon, L.
44680	Alopecurus myosuroides	Black-grass	14-Jul-94	TL461542	Bacon, L.
44681	Anagallis arvensis	Scarlet Pimpernel	14-Jul-94	TL461542	Bacon, L.
44693	Anisantha sterilis	Barren Brome	14-Jul-94	TL461542	Bacon, L.
44682	Anthriscus sylvestris	Cow Parsley	14-Jul-94	TL461542	Bacon, L.
44683	Apium nodiflorum	Fool's Water-cress	14-Jul-94	TL461542	Bacon, L.
82570	Aquilegia vulgaris	Columbine	05-Jul-78	TL461542	Palmer, W.H., CNT
44684	Arctium minus	Lesser Burdock	14-Jul-94	TL461542	Bacon, L.
44685	Arrhenatherum elatius	False Oat-grass	14-Jul-94	TL461542	Bacon, L.
44686	Artemisia vulgaris	Mugwort	14-Jul-94	TL461542	Bacon, L.
44687	Arum maculatum	Lords-and-ladies	14-Jul-94	TL461542	Bacon, L.
82567	Atropa belladonna	Deadly Nightshade	05-Jul-78	TL461542	Palmer, W.H., CNT
44688	Atropa belladonna	Deadly Nightshade	14-Jul-94	TL461542	Bacon, L.
44689	Avena fatua	Wild Oat	14-Jul-94	TL461542	Bacon, L.
103621	Betula pendula	Silver Birch	03-Nov-93	TL4654	Sheern, G.
44690	Betula pendula	Silver Birch	14-Jul-94	TL461542	Bacon, L.
103606	Brachypodium sylvaticum	False-brome	03-Nov-93	TL4654	Sheern, G.
44691	Brachypodium sylvaticum	False-brome	14-Jul-94	TL461542	Bacon, L.
44692	Bromopsis ramosa	Hairy Brome	14-Jul-94	TL461542	Bacon, L.
44694	Bryonia dioica	White Bryony	14-Jul-94	TL461542	Bacon, L.
44695	Calystegia sepium ssp. sepium	Great Bindweed	14-Jul-94	TL461542	Bacon, L.
44696	Capsella bursa-pastoris	Shepherd's-purse	14-Jul-94	TL461542	Bacon, L.
44697	Carpinus betulus	Hornbeam	14-Jul-94	TL461542	Bacon, L.
44698	Centaurea scabiosa	Greater Knapweed	14-Jul-94	TL461542	Bacon, L.
44699	Chenopodium album sens.str.	Fat-hen	14-Jul-94	TL461542	Bacon, L.
44700	Cirsium arvense	Creeping Thistle	14-Jul-94	TL461542	Bacon, L.
44701	Cirsium vulgare	Spear Thistle	14-Jul-94	TL461542	Bacon, L.
44702	Convolvulus arvensis	Field Bindweed	14-Jul-94	TL461542	Bacon, L.
103614	Cornus sanguinea	Dogwood	03-Nov-93	TL4654	Sheern, G.
82565	Crataegus monogyna	Hawthorn	05-Jul-78	TL461542	Palmer, W.H., CNT "Surrounding the wells".
103609	Crataegus monogyna	Hawthorn	03-Nov-93	TL4654	Sheern, G.
44703	Crataegus monogyna	Hawthorn	14-Jul-94	TL461542	Bacon, L.
44704	Dactylis glomerata	Cock's-foot	14-Jul-94	TL461542	Bacon, L.
44705	Elytrigia repens	Common Couch	14-Jul-94	TL461542	Bacon, L.
44706	Epilobium hirsutum	Great Willowherb	14-Jul-94	TL461542	Bacon, L.
82569	Euonymus europaeus	Spindle	05-Jul-78	TL461542	Palmer, W.H., CNT
44707	Euphorbia helioscopia	Sun Spurge	14-Jul-94	TL461542	Bacon, L.
103608	Fagus sylvatica	Beech	03-Nov-93	TL4654	Sheern, G.
44708	Fagus sylvatica	Beech	14-Jul-94	TL461542	Bacon, L.
103623	Fallopia japonica	Japanese Knotweed	03-Nov-93	TL4654	Sheern, G.
44709	Festuca rubra agg.	Red Fescue	14-Jul-94	TL461542	Bacon, L.
103626	Fraxinus excelsior	Ash	03-Nov-93	TL4654	Sheern, G.
44710	Fraxinus excelsior	Ash	14-Jul-94	TL461542	Bacon, L.
44711	Fumaria officinalis	Common Fumitory	14-Jul-94	TL461542	Bacon, L.
103625	Galium aparine	Cleavers	03-Nov-93	TL4654	Sheern, G.
44712	Galium aparine	Cleavers	14-Jul-94	TL461542	Bacon, L.
44713	Galium verum	Lady's Bedstraw	14-Jul-94	TL461542	Bacon, L.
103622	Geranium robertianum	Herb-robert	03-Nov-93	TL4654	Sheern, G.
103619	Geum urbanum	Herb Bennet	03-Nov-93	TL4654	Sheern, G.
44714	Geum urbanum	Herb Bennet	14-Jul-94	TL461542	Bacon, L.
103612	Hedera helix	Ivy	03-Nov-93	TL4654	Sheern, G.
103613	Heracleum sphondylium	Hogweed	03-Nov-93	TL4654	Sheern, G.
44594	Heracleum sphondylium	Hogweed	14-Jul-94	TL461542	Bacon, L.
44716	Hordeum murinum	Wall Barley	14-Jul-94	TL461542	Bacon, L.
44717	Ilex aquifolium	Holly	14-Jul-94	TL461542	Bacon, L.
82571	Iris foetidissima	Stinking Iris	05-Jul-78	TL461542	Palmer, W.H., CNT

103615	Iris pseudacorus	Yellow Iris	03-Nov-93	TL4654	Sheern, G.
44718	Iris pseudacorus	Yellow Iris	14-Jul-94	TL461542	Bacon, L.
44719	Lamium album	White Dead-nettle	14-Jul-94	TL461542	Bacon, L.
44720	Lapsana communis	Nipplewort	14-Jul-94	TL461542	Bacon, L.
44721	Ligustrum vulgare	Wild Privet	14-Jul-94	TL461542	Bacon, L.
44722	Lolium perenne	Perennial Rye-grass	14-Jul-94	TL461542	Bacon, L.
44723	Matricaria discoidea	Pineapple Weed	14-Jul-94	TL461542	Bacon, L.
82562	Papaver dubium	Long-headed Poppy	05-Jul-78	TL461542	Palmer, W.H., CNT
82564	Papaver hybridum	Rough Poppy	05-Jul-78	TL461542	Palmer, W.H., CNT
82563	Papaver rhoeas	Common Poppy	05-Jul-78	TL461542	Palmer, W.H., CNT
44724	Papaver rhoeas	Common Poppy	14-Jul-94	TL461542	Bacon, L.
44725	Pastinaca sativa	Wild Parsnip	14-Jul-94	TL461542	Bacon, L.
103618	Petasites fragrans	Winter Heliotrope	03-Nov-93	TL4654	Sheern, G.
44726	Plantago lanceolata	Ribwort Plantain	14-Jul-94	TL461542	Bacon, L.
44727	Plantago major	Greater Plantain	14-Jul-94	TL461542	Bacon, L.
44728	Populus tremula	Aspen	14-Jul-94	TL461542	Bacon, L.
44729	Prunus spinosa	Blackthorn	14-Jul-94	TL461542	Bacon, L.
65921	Ranunculus lingua	Greater Spearwort	Aug-95	TL45935419	Seilly, D.
					Small group under FB, S side. Another small group near Hawthorn bush S side of ditch.
44730	Ranunculus repens	Creeping Buttercup	14-Jul-94	TL461542	Bacon, L.
44731	Ribes uva-crispa	Gooseberry	14-Jul-94	TL461542	Bacon, L.
103616	Rosa arvensis	Field Rose	03-Nov-93	TL4654	Sheern, G.
103611	Rosa canina agg.	Dog Rose	03-Nov-93	TL4654	Sheern, G.
44732	Rosa canina agg.	Dog Rose	14-Jul-94	TL461542	Bacon, L.
103607	Rubus fruticosus agg.	Bramble	03-Nov-93	TL4654	Sheern, G.
44733	Rubus fruticosus agg.	Bramble	14-Jul-94	TL461542	Bacon, L.
44734	Rubus idaeus	Raspberry	14-Jul-94	TL461542	Bacon, L.
44715	Rumex acetosa	Common Sorrel	14-Jul-94	TL461542	Bacon, L.
44735	Rumex obtusifolius	Broad-leaved Dock	14-Jul-94	TL461542	Bacon, L.
44736	Salix viminalis	Osier	14-Jul-94	TL461542	Bacon, L.
103610	Sambucus nigra	Elder	03-Nov-93	TL4654	Sheern, G.
44737	Sambucus nigra	Elder	14-Jul-94	TL461542	Bacon, L.
44738	Senecio vulgaris	Groundsel	14-Jul-94	TL461542	Bacon, L.
82561	Sinapis alba	White Mustard	05-Jul-78	TL461542	Palmer, W.H., CNT
44739	Sinapis arvensis	Charlock	14-Jul-94	TL461542	Bacon, L.
82568	Solanum dulcamara	Bittersweet	05-Jul-78	TL461542	Palmer, W.H., CNT
103624	Solanum dulcamara	Bittersweet	03-Nov-93	TL4654	Sheern, G.
44740	Solanum dulcamara	Bittersweet	14-Jul-94	TL461542	Bacon, L.
44741	Sonchus arvensis	Perennial Sow-thistle	14-Jul-94	TL461542	Bacon, L.
103620	Stachys sylvatica	Hedge Woundwort	03-Nov-93	TL4654	Sheern, G.
44742	Stachys sylvatica	Hedge Woundwort	14-Jul-94	TL461542	Bacon, L.
44743	Stellaria media agg.	Chickweed	14-Jul-94	TL461542	Bacon, L.
103627	Symphoricarpos albus	Snowberry	03-Nov-93	TL4654	Sheern, G.
44744	Tamus communis	Black Bryony	14-Jul-94	TL461542	Bacon, L.
44745	Taraxacum officinale agg.	Dandelion	14-Jul-94	TL461542	Bacon, L.
44746	Taxus baccata	Yew	14-Jul-94	TL461542	Bacon, L.
44747	Trifolium repens	White Clover	14-Jul-94	TL461542	Bacon, L.
44748	Tussilago farfara	Colt's-foot	14-Jul-94	TL461542	Bacon, L.
82566	Urtica dioica	Common Nettle	05-Jul-78	TL461542	Palmer, W.H., CNT
44749	Urtica dioica	Common Nettle	14-Jul-94	TL461542	Bacon, L.
44750	Veronica anagallis-aquatica	Blue Water-speedwell	14-Jul-94	TL461542	Bacon, L.
44751	Veronica persica	Common Field-speedwell	14-Jul-94	TL461542	Bacon, L.
103617	Viola odorata	Sweet Violet	03-Nov-93	TL4654	Sheern, G.