

**Tadburn Meadows  
Local Nature Reserve Romsey**

**Management Plan**

**2013 - 2018**

**Boyce Jeffery Community & Leisure Service**

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## **1. DESCRIPTION**

### **1.1 General Information**

#### **1.1.1 Location (see Appendix I Map 1)**

Tadburn Meadows is located in Halterworth, Romsey.  
A stream known locally as the TadburnLake runs through the centre of the site.

OS Grid Reference: SU369215

Ward:	Tadburn
District:	Romsey
County:	Hampshire
Local Planning Authority:	Test Valley Borough Council

#### **1.1.2 Summary Description**

Tadburn Meadows is flanked by housing on three sides with a railway line running along the northern boundary. The site includes an area of amenity grassland and a children's play area.

Tadburn Meadows consists of a mosaic of habitats which are only present due to the variation in hydrology around the site. The valley bottom is wet with drier valley sides. The stream running through the site is dynamic with a variable flow rate most noticeably during times of heavy rainfall. The stream is surrounded by alder and willow interspersed with oak and ash. Ornamental species have at some stage been planted on the site which includes weeping willow and horse chestnut. Also present throughout the site is the invasive garden escape Himalayan balsam. On the northern part of the site which is consistently waterlogged within the valley bottom alder and willow carr is dominant. Trees within this area are of similar age. This side of the site also contains a remnant old hedgerow which is adjacent to the Eight Acres entrance. Over time this has now become a line of semi mature trees.

Grassy glades adjacent the footpath are present. A couple of these glades have recently had their mowing regime altered allowing initial development of the grasses and herbs present which include devil's-bit scabious, bird's foot trefoil and knapweed. One of these glades at the edge of the site also contains cuckoo flower.

South of Tadburn Stream is a sloping valley side which is also dominated by alder and willow woodland. Also present are two small meadows which may have possibly given Tadburn Meadows its name. This managed habitat predominately consists of wet meadow which is slowly being encroached by scrub, bracken and trees.

The trees surrounding the meadows provide a useful screen between the site and the housing estate and should be retained.

### 1.1.3 Land Tenure

The site is owned by Test Valley Borough Council's and managed by Community & Leisure Service, primarily for conservation and education with informal recreation for local residents. The entrance off the road at Eight Acres is owned by Hampshire County Council, and TVBC have a right of way over it.

Type of holding:	Public Open Space
Total area:	5.35 hectares (13.0 acres)
Boundaries:	<b>(See Appendix 1 Map 2 )</b>
Owner:	Test Valley Borough Council
Address:	Community & Leisure Service, Beech Hurst, Weyhill Road, Andover, Hampshire SP10 3AJ
Telephone:	(01264) 368823

### 1.1.4 Map Coverage

OS Map	1:50 000	Sheet No. 185
	1:25 000	Sheet No. SU32
	1:10 000	Sheet No. SU32 SE

Geological Map 1:50 000 Sheet No. 315

### 1.1.5 Access (see appendix 1, Map 3)

Permissive paths cross the site with three footbridges allowing access over the stream. The only Public Footpath (No. 3) is a tarmac path running along the southern edge of the site.

Parking at the site is possible from the access point at Eight Acres. There is also accessed from Halterworth Close, Halterworth Lane and Seward Rise. There is no access on the northern side due to the railway line and a six foot high palisade fence.

There is no vehicular access on the site apart from those necessary for management purposes. Access for these vehicles can be gained through the vehicle barrier located at the Eight Acres entrance, another access point located at Seward Rise.

## 1.2 Environmental Information

### 1.2.1 Physical

#### 1.2.1.1 Hydrology

The site is located on a valley bottom which is regularly waterlogged and a stream that frequently spates in periods of high rainfall. The valley bottom also contains a number of drainage ditches. On the southern side of the stream is the gently sloping, drier valley side.

#### 1.2.1.2 Geology and Soils

Most of the site is composed of alluvial deposits over bracklesham beds with neutral to basic, poorly drained soils. The stream bed is composed of gravel.

### 1.2.2 Biological

#### 1.2.2.1 Habitats/Communities (see Appendix 1, Map 7)

- i) Old Hedge
- ii) Wet woodland dominated by willow and alder carr
- iii) Stream banks
- iv) Tadburn Stream
- v) Wet Meadow
- vi) Amenity Grassland sward
- vii) Ditches

#### 1.2.2.2 Flora

A number of surveys have been carried out (see appendix II):

*Table 1 - Floral surveys carried out at Tadburn Meadows*

Surveyor	Area	Date
S. Davey	Upper & Lower plant survey	April 2008
I. Ralphs	Ancient Woodland Survey	11/07/1996
I. Ralphs	Amenity Area	11/07/1996
I. Ralphs	Tadburn Meadows	11/07/1996
J. Levitton	Whole Site	19/05/1996

The dominant flora are described with reference to the habitats outlined about (subsection 1.2.2.1).

#### i) Old Hedge

This line of mature oaks was clearly once a hedge and marks the boundary of the site. At present it is quite sparse with a few hawthorn bushes and the base consists of rough grass with nettles, which has been cut on rotation in recent years to encourage a wider range of plant communities.

## **ii) Wet Woodland Dominated by Willow and Alder**

Some of the area is dominated by willow, which is of similar age, with a few young oaks, some of which may have been planted, others appear to be self-sown.. Currently the wood is dense, with minimal light reaching the woodland floor. The result is very little ground flora, except for a few patches of brambles where conditions allow. Between the woodland and the amenity grass area is a strip of rough grass, which provides a 'woodland edge' habitat and is frequented by a variety of insects, small mammals and birds.

A few areas of the wooded area are much wetter and mature alders are the dominant species, currently these are in a high density stand. There is currently holly and laurel present in this area, several patches of brambles and a few planted ornamental trees. The abundant broad-leaved buckler ferns and remote and pendulous sedges are an attractive feature of this area. Other areas dominated by semi-mature alder are generally in poor condition, being dense and shady with a poor understorey composed mainly of bramble.

## **iii) Stream banks**

The stream banks near the amenity grass area are heavily shaded, with alders, nettles, Himalayan balsam and hawthorn growing under mature oaks. Some areas are very overgrown with brambles and climbing plants. Further upstream the banks are less shaded and the trees comprise of mature alders, oaks as well as hawthorn, ash and hazel. The ground flora is made up of bramble, wood avens, rough meadow grass, garlic mustard, giant fescue, cock's foot and Yorkshire fog.

## **iv) Tadburn Lake**

This stream is a tributary of the River Test, this is a statutory main river and is therefore the responsibility of the Environment Agency. The stream is generally fairly slow flowing but this can rapidly change depending on the amount of rainfall. Due to the fact that this stream is a main river and flows through Romsey the major concern to the Environment Agency is as a potential flood risk and advice should be sought before any changes to the stream occur. To the north of the site a wall protects houses in the local vicinity from the stream by alleviating potential flooding by canalising the water through this location.

The stream has a gravel substrate and is of varying velocity which in places can become silted although being a dynamic channel this may be short lived. The route of the stream through Tadburn Meadows appears to be mainly natural with some alterations occurring particularly where the footbridges have been erected.

Due to the shading and spatting nature of the stream throughout Tadburn Meadows there is very little in the way of macrophytes (macroscopic plant life) occurring in the stream. It is however evident that the stream contains a number of detritivorous species (organisms that break down organic waste material).

Surveys carried out since 2003 to date by Roslyn Ecological have demonstrated that the stream is in a good condition in terms of both chemical and biological see appendix V for further information. Sporadic surveys are carried out by the Environment Agency looking specifically at fish species.



## v) Wet Meadow

This area in recent years has been enlarged to allow the meadow to establish. Further management is required to ensure this area remains open with specific attention being paid to the management of bracken and bramble.

One species that was dominant is *Deschampsia cespitosa* (tufted-hair grass) and has a National Vegetation Classification (NVC) categorisation of MG9 (*Deschampsia cespitosa* grassland) over time this has become less dominant and the meadows now benefits from other plant species include Yorkshire fog, meadow foxtail, meadowsweet, oval sedge, greater bird's-foot trefoil, rough meadow-grass, common valerian and purple moor-grass.

## vi) Amenity Grassland Sward

Grassy glades that are regularly managed for amenity purposes are dominated by *Lolium perenne* (perennial ryegrass) and are categorised under NVC as *Lolium perenne-Plantago major* (greater plantain) grassland (MG7). Some of these glades have recently been managed less intensively, to allow full development of grassland species. This has allowed a more attractive meadow sward to develop consisting of herbs such as creeping buttercup, knapweed, bird's-foot trefoil and devil's bit scabious.

### 1.2.2.3 Fauna

#### 1.2.2.3.1 Invertebrates

The site has an abundance of invertebrate life both aquatic and terrestrial. Since 2003 data has been gathered each year by Roslyn Ecological specifically on the aquatic species information of which can be found on [www.5kingdoms.co.uk/](http://www.5kingdoms.co.uk/)

In 2005 a transect was establish to record butterflies using the site. With the help of local volunteers the data gathered has enable Test Valley Borough Council to ensure that current management is having a positive effect on the site for conservation. All data collected is also forwarded to the Hampshire and Isle of Wight Butterfly Conservation to assist in monitoring butterflies locally as well as nationally. A comprehensive Invertebrate survey covering micro habitats around the site was carried out by Dr Jonty Denton in 2008 these results can be found in Appendix IV.

#### 1.2.2.3.2 Fish

Formal surveys have been carried out with the Environment Agency and data is held by the Fisheries Team. Bullheads (*Cottus gobio*) have been observed indicative of reasonable water quality. This species is listed by the UK biodiversity Group as a species of national conservation concern. It is anticipated that further fish surveys will be conducted in the future. The Environment Agency could be approached to conduct a more comprehensive survey of the fish population in the Tadburn Stream and this should be monitored in the future.

#### 1.2.2.3.3 Amphibians & Reptiles

Common frogs frequent the site using seasonal pools and ditches for spawning, as early as February. The wet scrub habitat here should be retained to conserve them. It is anticipated that future surveys will be carried out to establish presence and absence of reptiles, these surveys could involve local volunteers or university students as part of their dissertation.

#### **1.2.2.3.4 Birds**

The area is rich in bird life providing necessary nesting sites, perching and cover points in the copious amounts of scrub and woodland present. An out of date monthly bird survey was carried out by a local volunteer (see Appendix III) 1996 – 1997. A more recent dawn chorus was carried out May 2013. Please see species list (Appendix IIIa).

With this in mind more bird surveys need to be carried out and it is hope that with community engagement future surveys can be carried out by volunteers. Volunteers in the past have erected bird boxes throughout the site. These should be retained and maintained to encourage more nesting at the site. New nest boxes could be installed to encourage more birds to visit the site.

#### **1.2.2.3.5 Mammals**

There is potential that Water Voles may be present along the stream. Surveys could be conducted to establish the presence or absence of both of these mammals.

Small mammal surveys should be carried out to establish presence and absence using longworth traps, this project could be carried out by students studying for a degree.

### **1.2.3 Cultural**

#### **1.2.3.1 Land Use**

There is recorded information as to the previous land use of Tadburn Meadows. Prior to the urbanisation of the surrounding area, the land was part of two estates (see Section 2.2.1.5). Thus, it is possible that, prior to ownership by Test Valley Borough Council, the land was used primarily for grazing.

#### **1.2.3.2 Past Management in Nature Conservation**

No management specifically for nature conservation occurred until 1995, when TVBC, Hampshire and Isle of Wight WildLife Trust along with the Environment Sub-Committee of the Romsey and District Society, began organising monthly volunteer work parties. Work has included improving access and scrub clearance. In 2004 a group of local people set up The Tadburn Conservation Volunteers to assist with the management of the site and have carried out practical and promotional events throughout the year to raise the profile of the site, encouraging people to engage with their local environment.

#### **1.2.3.3 Public Interest**

##### **i) Through Route**

The site is in the middle of Halterworth housing estate. The proximity to residential dwellings and ease of access is reflected in the varied and extensive use of the site by local people. There are a few paths through Tadburn Meadows which lead to housing estates on three sides of the site. The fourth side of the site is separated from another housing estate by a railway line.

## ii) Recreation

With the close proximity of the residential dwellings to the reserve, the level of public interest is obviously high:

Many residents use the site for informal recreation, including cycling and dog walking. There is a children's play area and amenity grassland which is used for informal recreation. The majority of the local residents value the wildlife at the reserve, and other keen parties are also interested in helping to keep records of other species, such as bats and flowering plants.

## iii) Wildlife Interest

Some people who visit the site are keen on nature, many of them being of an ornithological disposition and are therefore opposed to any disturbance to the site especially in terms of coppicing. Therefore, the long term benefit of coppicing must be stressed to these people before any management strategies are carried out.

### **1.2.4 Ecological Relationships and Implications**

The alder and other species associated with the waterlogged soils of Tadburn Meadows depends on the continuing existence of unpolluted soil for optimal growth. New sluice gates have been constructed and will be maintained to ensure the soil remains waterlogged.

Over the last five years the removal of non-native species such as sycamore and Himalayan balsam has taken place this has allowed native species to regenerate in places and in time with the continuing management of the site will soon return to the historic ecological structure.

The coppicing of the alder that has been carried out over the last five years has improved the diversity of the ground flora and with continuing management in this manner will allow the site to become more diverse as more light reaches the wet woodland floor. The increase of wild flowers has led to an increase in numbers of insects, especially butterflies and moths that use these plants as a food source.

The cutting of grass swards at differing heights along the paths and within the meadows has favoured many species of insects. This has also favoured the native plant species as the cuttings have been removed which in turn has lowered the nutrient level leading to less vigorous competition from more rank species.

## **2. EVALUATION AND OBJECTIVES**

### **2.1 Conservation Status of the Site**

Local Nature Reserve (LNR ) status was achieved for Tadburn Meadows in 2002. Tadburn Meadows is also classified as a SINC ( Site of Importance for Nature Conservation)

#### **2.1.1 The Planning History of the Site**

The Test Valley Borough Council local plan (June 1992) identified Tadburn Meadows as an 'important open area and landscape feature'.

In the Test Valley the Borough Council Adopted the Local Plan Deposit (2006) which has identified Tadburn Meadows as 'an important open area'.

#### **2.1.2 Operations Likely to Damage the Site**

- Cultivation, including ploughing, rotovating, harrowing and re-seeding.
- Changes in the revised (see section 3) mowing or cutting regime.
- Spraying of pesticides except where necessary i.e. the treatment of bracken.
- Application of manure, fertilisers and lime.
- Dumping, spreading or discharge of any materials.
- Burning.
- The release into the site of any wild, feral or domestic animal, plant or seed.
- The killing or removal of any wild animal, including pest control. 'Animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.
- Significant changes to the hydrology of the site.
- Modification of the structure of water courses, including their banks and beds.
- The changing of water levels and tables and water utilisation including irrigation, storage and abstraction from existing water bodies and through boreholes.
- Extraction of minerals including peat, shingle, sand and gravel, topsoil, subsoil, chalk, shells and spoil.
- Storage of materials.
- Erection of permanent or temporary structures or the undertaking of engineering works, including drilling.
- Use of vehicles or craft likely to damage or disturb vegetation or fauna.
- Modification of natural or man-made features, clearance of boulders, large stones, loose rock.

- Removal of geological specimens, including rock samples, minerals and fossils.
- Increasing the size of the recreational area.

### **2.1.3 Site Definition and Boundaries (see Appendix I Map 2)**

The site covers 5.35 hectares (13.0 acres). The northern boundary runs parallel to a railway line which runs between Romsey and Eastleigh. The site forms a rectangular shape and runs from Eight Acres to Seward Rise, a cul de sac off Halterworth Lane.

## **2.2 Evaluation of Features**

### **2.2.1 Evaluation**

#### **2.2.1.1 Size**

The wet meadow, although fairly small in size, is of great benefit to wildlife further management will ensure this value is increased.

The grassy glades found alongside the main path and between the open amenity area and willow dominant woodland are also only small segments. If managed properly and left to develop throughout the year, they could provide an interesting habitat for grassland flora and fauna.

The alder and willow dominated woodland provides a considerable scope for introducing a mixed age stand by continuing coppicing this would provide a greater wildlife interest by increasing diversity to the woodland understorey.

#### **2.2.1.2 Diversity**

There is a wide diversity of habitats including dry willow scrub dominated woodland, alder dominated wet woodland, a gravelly stream and wet meadows.

The stream is heavily shaded by alder and hazel coppice and is inherently poor in macrophytes. Although invertebrate diversity remains good this could be due to the number of detritivorous species inhabiting the stream. This habitat could be improved by rotational coppicing of alder and hazel along the river bank.

#### **2.2.1.3 Naturalness**

Most of the site has been extensively managed in the past and was once grazed rush pasture land, although the alder Carr to the north of the stream appears to be more natural in origin. This is thriving in a very waterlogged area of the site which would have been of limited use to the farmer. Since the site has been owned by Test Valley Borough Council, it has been managed for Nature Conservation and recreation, and during this time the area has had chance to develop semi-natural willow and alder dominated woodland throughout Tadburn Meadows.

#### 2.2.1.4 Fragility

The trend is for seral succession to rankness, scrub and eventual woodland over much of the site. This means that constant management is necessary to retain the features of interest. Scrub encroachment and stands of scrub centrally is threatening the wet Meadow itself and must not be allowed to encroach any further. Where possible, much of the scrub and areas of bracken should be cut back to encourage increased development of the meadow area.

#### 2.2.1.5 Recorded History

Until 1944, the area south-east of Tadburn stream was part of the Highwood Estate (see Appendix 1, map 4). On the 31<sup>st</sup> August 1944, the Highwood Estate was sold at auction in various lots. Halterworth Farm (Lot 2) was sold to Edward John Coe of Bishopstoke, comprising approximately 101.3 acres. In November 1972, Halterworth Farm comprising 78 acres was sold to F. Goulden and Sons Ltd. In July 1980, approximately 21.4 acres, forming part of the Farm, were sold to Loyalhurst Ltd. Test Valley Borough Council acquired this land in January 1982 and in March 1983 sold 16.2 acres for development. The land remaining forms part of Tadburn Meadows and has been referred to in schedules as pasture land.

Until 1963, the area north-west of Tadburn stream was part of Little Woodley Farm comprising 33 acres. This in turn, was part of the Harefield Estate (see Appendix 1, map 5). In 1963, 6 acres of this land were sold to Albert Brian Dalley of Eight Acres Farm. On the 13<sup>th</sup> July 1983 this land was sold to Test Valley Borough Council and now forms part of Tadburn Meadows.

#### 2.2.1.6 Position in Ecological Unit

The site is part of the River Test Catchment. This site is an isolated unit surrounded by residential dwelling although another small fragment of wet meadowland remains adjacent to Halterworth Lane, north of the railway line and north east of Tadburn Meadows itself. The stream also flows from Emer Bog Nature Reserve which is also a Special Area of Conservation (SAC) (managed by the Hampshire and Isle of Wight Wildlife Trust) near North Baddesley.

#### 2.2.1.7 Potential Value

The site has improved with on-going management. Species diversity has shown an increase in recent years particularly the wet meadowland has started to become more species rich with the reduction of rank species. The isolation of the site may limit any opportunities for re-colonisation from other unimproved sites in the area.

The site over the last 8 years has been used as environmental educational resource with local schools attending environmental learning based activities during the summer term.

## 2.2.2 Ideal Management Objectives

- 1) To maintain and enhance the habitat diversity.
- 2) To conserve and enhance the species richness of the wet meado0077.
- 3) To enhance the diversity of the woodland glades alongside the footpaths by restricted mowing.
- 4) To restore and enhance the alder, willow wet woodland in terms of increased diversity and introducing mixed age stands through coppicing.
- 5) To restore and enhance the long swards and scrub along edges of woodland areas especially the zone between the willow woodland and football pitch.
- 6) To maintain natural boundaries, to restrict access into vulnerable areas.
- 7) To keep ditches fairly clear but also ensure that they do not become too free draining.
- 8) To encourage, provide and inform for public enjoyment including appropriate interpretation, circular walks, picnic areas and nature walks.
- 9) To protect the character and amenity value of Tadburn Meadows.
- 10) To control and improve existing public access for informal recreation.
- 11) To maintain a balance between recreational demands and conservation.
- 12) To encourage active participation of local people in caring and managing Tadburn Meadows.
- 13) To ensure proper organisation and co-ordination of volunteer tasks.
- 14) To encourage positive use of the site as an environmental education resource.
- 15) To inform local people and interested organisations about Tadburn Meadows and its long term management.
- 16) To continue and establish new monitoring programs at Tadburn Meadows through local volunteers.

## **2.3 Factors Influencing Management**

### **2.3.1 Natural Trends**

The main trend is for seral succession from rankness through scrub to woodland and eventually complete cover with associated loss of species albeit with the gain of others. The occurrence of dense woodland will eventually dry out the wetland areas due to increased transpiration. This could lead to the loss wet woodland habitat and associated ground flora species such as the rushes and sedges. Many of the trees at Tadburn Meadows are of even age, and lack age structure. Currently there is limited natural regeneration present to replace the mature trees. Although coppicing of alder and willow trees could improve the habitat. Tadburn Meadows is managed on a limited budget and an increase in funds or a capital payment could assist tree works taking place. by introduction of an uneven age structure.

### **2.3.2 Human-induced Trends**

Excessive recreational use will disturb wildlife and could damage habitats. Litter, dog-fouling and the dumping of garden refuse around the perimeter, could also be considered a potential problem.

### **2.3.3 External Factors**

The wet woodland relies on regular flooding to provide the correct conditions for the present habitat. Any drying out at the site could prove detrimental. This could perhaps be controlled by ensuring that the artificial ditches are not too free draining.

Other problems include past fragmentation of the site from surrounding areas, due to housing-development. The LNR designation should help to protect the site in future years.

Also there is the possibility of pollution due to urban run-off, eg. drains from the surrounding housing estates. Plus the possibility of pesticide leaching from the railway line, due to their regular spraying practices, and the wet nature of the woodland.

Whilst dog walking, a significant usage of the site, can also lead to disturbance especially within the stream and meadow areas, particularly with dogs off the lead, where increased poaching of the river bank could occur.

### **2.3.4 Obligations**

Before any trees are coppiced, those with Tree Preservation Orders (TPOs) should be defined (see Appendix 1, Map 5). If these trees need to be coppiced then permission should be gained from the local planning authority. For felling which is likely to exceed 5 cubic metres in any one quarter a felling licence will be required from the Forestry Commission.

The perimeter of Tadburn Meadows should retain its woodland screen to act as a buffer and to provide privacy to the surrounding housing estates. Also any new conservation management proposals need to take into account that the site will still be maintained as an amenity area.

The line of trees immediately adjacent to the railway line in compartments **2,3,4,6 and 9** should be coppiced in rotation due to their proximity to the railway line. Most are fairly mature alder or willow coppice. This work should be carried out by contractors as sensitively as possible, from October to March.



### **2.3.5 Legal Constraints**

These include TPOs, any overhead cables, public rights of way and any management that could affect the adjacent railway line. Also main river access by the Environment Agency.

### **2.3.6 Resource Implications**

Tadburn Meadows Local Nature Reserve is owned and managed by TVBC who fund the maintenance of the site, including the mowing, litter clearance etc. The work outlined in this plan includes proposals for work by both contractors and volunteers.

i) **Management prescriptions to be carried out by contractors (see table 11)**

This work is financed by TVBC, who currently fund all the management on the site. It should be considered to look into potential grant funding to increase the habitat value of the site.

ii) **Management prescriptions to be carried out by volunteers (see table 12)**

This work is funded by TVBC, where costs are incurred. This includes removal of vegetation from scrub clearance work parties and rubbish from litter picking. The volunteers currently provide their own tools. It is proposed that TVBC will continue to support the volunteer programme.

## **2.4 Operational Objectives and Management Options**

### **2.4.1 Rationale for Proposed Management Options**

The main aim for Tadburn Meadows is to conserve and enhance the site for nature conservation and recreation. Tadburn Meadows is not only an important site locally, but nationally, areas like this in recent years have come under increasing pressure from intensified agricultural practices and development. The need for preservation of these sites for wildlife, and for the enjoyment of the local residents cannot be overstated. Increasing public awareness of the site will help to ensure its long term protection.

To achieve this goal, Tadburn Meadows will be actively managed to benefit conservation and public recreation. Historic management has shaped the character of the wet woodland with techniques such as coppicing of the alder, a traditional method of wet woodland management that has its origins in prehistory. Coppicing has a major benefit to conservation because of the periodic cutting of the stools allowing light to reach the woodland floor and thereby encouraging light demanding wild flowers to grow.

Non-native species present on the site, particularly Himalayan balsam will be continually removed and monitored each year. Invasive species such as bracken and bramble, if left unmanaged, will being to outcompete more sensitive flora and shade out light demanding species leading to a loss of diversity.

## 2.4.2 Outline objectives and management prescriptions

Long term aims for this site can be categorised into 4 Management Options:

**A – Active Conservation Management**

**B – Monitoring and Research**

**C – Education and Access**

**D – Administration and Public Relations**

### 2.4.2.1

**Table 3 - The Conservation of Features**

Feature	Management Option	Outline Prescription
Hedge (1)	A	Strim areas of rank species on rotation in autumn. Plant additional hawthorn.
Willow Scrub (2)	A	Coppice 10% of trees on rotation every (winter). Allow woodland edge development. Bramble control in winter.
Alder Woodland (3)	A	Coppice (10% trees) on rotation in winter. Bramble and laurel control in winter.
Ditch (4)	A	Retain surrounding trees except sycamore. Clear leaf litter from ditch. Construct sluice gate.
Stream	B	Velocity
Banks (5)	A & B	Scrub encroachment. Control invasion of Himalayan balsam.
Wet Alder/Willow Woodland (6)	A & B	Non-intervention. Review every 10 years. Maintain water levels.
Tree line along stream bank (7ab)	A	Remove Himalayan balsam and any sycamore.
Ditch (8)	A	Clear ditch (leaf litter) Construct sluice gate (optional)
Alder (Wet→ Dry) woodland (9)	A	Coppice 10 % on rotation. Bramble control in winter.
Mown Area (10)	A	Mow once a year end of August remove cuttings to encourage grassland species development. Retain successional species between meadow and woodland.
Stream banks (11)	A & B & D	Tree safety
Alder woodland (12)	B	Understory and woodland density.
	A & D	Remove Himalayan balsam and any sycamore. Introduce a coppicing regime to a small block (12c) to allow more light to reach the stream.
Grassland and Scrub (13)	A	Mow 50 % of the grassland in late August. And the other half of the meadows the following year. Remove cuttings. Scrub clearance. Cut back scrub encroachment in autumn.
Grassland (14b)	A	Mow 50% of grassland once a year late

		August and remove cuttings, to allow grassland species development including cuckoo flower.
Whole site	B	Cuckoo flower and other wildflowers.
Bracken and scrub (15)	A	Yr1&2 cut back. Cut back re-growth late August. Yr 2 chemical treatment after cut.
Alder and Willow (16)	B	Retain as barrier. Brambles retained as a deterrent. Monitor woodland density, tree age for future coppicing schemes.
Butterflies	B & D	Involve and support local residents with butterfly transects continue to compile data for Hampshire Butterfly Conservation.
Dragonflies and Damselflies	B & D	Initiate transects to gather base line data. Involve local residents and other local naturalists.
Birds	B & D	Conduct a Common Bird Census (CBC) with assistance from British Trust for Ornithology ( BTO) and local residents.
Mammals	B	Record and note species seen by local residents and Countryside Officer to Compile database
Other invertebrates	B	Survey area for invertebrates
Public Access	C & D	Maintain permissive paths through site.
School involvement	C	Involve local schools in projects on site. Create teachers pack to facilitate independent visits
Control of invasive species	A	Control where appropriate or possible
Increase public awareness	D	Through interpretation boards, talks, local press and work parties.

#### 2.4.2.2.1 Involvement with Other Parties

Good relations with all users should be maintained, including nature lovers, those partaking in informal recreation and local people living nearby who do not visit the site but are concerned for its future. It is important to make people aware of any large scale management operations that are undertaken. This can be achieved by using the poster holders in the interpretation boards and putting press releases in the local paper.

#### 2.4.2.2.2 Public Access

Public use should be monitored to ensure sufficient information is available to develop appropriate visitor management, especially in terms of developing ideas that can deal with vandalism that occurs at the site.

### 2.4.2.3 The Provision of Facilities

#### 2.4.2.3.1 Cycle Route

A cycle route through Tadburn Meadows has been installed. This has involved widening the path that runs parallel to and on the northern side of the stream, to 3 metres along its entire length. The surface of the track has been finished with a fine limestone gravel.

#### 2.4.2.3.2 General Litter and Dog Litter Bins

Both are present on site and general litter bins can also be used for dog litter. These are well maintained and regularly emptied. More emphasis should be placed upon the need for dog owners to dispose of their dog's excrement in the bins.

General litter picks are regularly carried out by the Environmental Services Team, more frequently in the summer due to increased usage of the site. More emphasis should be placed upon people disposing of their litter in the existing bins provided, with fines imposed for fly tipping

#### 2.4.2.3.3 Informal Play Areas

The amenity grassland should be maintained as it is, although the width of the successional scrub zone between the pitch and adjacent woodland could be increased for the benefit of wildlife.

The informal play area should be well maintained and regularly checked for safety and vandalism.

### Interpretation

Information boards have been placed at the main entrances to the site. Interpretation boards at strategic points, for example, by a coppiced area to explain the reason behind coppicing, could provide information as to the management objectives at Tadburn Meadows. A leaflet describing a guided walk has already been produced. This may also help improve local participation.

### **3. PRESCRIPTIONS**

This section describes the management objectives in detail and ascribes specific prescriptions to achieve them. The reserve has been divided into compartments that largely relate to either habitats or areas requiring different management.

Map 7 shown in appendix 1 and section 2.4.1.1 splits up the site into designated areas or compartments, which are numbered for ease of identification. Each number represents a different compartment, and these numbers will be used in this prescription section to help pinpoint the exact location for each management proposal.

#### **3.1 Compartment Principles/Prescriptions**

##### ***Management Operation No.1 Alder/Willow Woodland***

The aim in this compartment is to introduce coppicing to areas of woodland. This will create a mixed age stand and decrease tree density allowing the development of a more diverse ground flora. The coppicing regime needs to be selective and designed so as to fulfil a number of roles from ecological benefit to public interest. Thus, a standard rotational coppicing regime throughout the whole site will not suffice. Any coppicing should occur on rotation, by only coppicing a small block of woodland in any one year. It is suggested that coppicing should occur on a ten year rotation, to allow complete regeneration of coppiced trees, although this should be monitored and amended depending on the speed and success of regeneration which may vary in each compartment.

Areas of woodland that should be coppiced are **2,3,9,12b,12c** (see map 7). Each of these areas (except **12c**) are too large to be coppiced at one time and are therefore divided into smaller block sizes designated by lower case letters, e.g. **2a** (see map 7). The exact way in which these areas are to be coppiced is described later. A screen of trees should be retained around the perimeter of the site as a screen between Tadburn Meadows and the surrounding housing estates. Generally, only alder and willow should be coppiced.

The whole site should be carefully surveyed and any trees in need of remedial work in the interest of safety should be prioritised. It is suggested that all the trees along the railway fence line (cpts, **2,3,6 & 9**) should be surveyed and works carried out as required.

Any oak and ash trees should be left (except in area **13** where they are encroaching on the grassland and this will be discussed later).

Any mature trees that are covered in ivy should be retained where feasible as they have great habitat value. But it must be insured that they pose no risk to the public. For example close to paths, houses or the railway running alongside the site.

Any sycamore trees present should be removed as this species is considered invasive and can eventually out-compete the other trees present. Also, any ornamentals, garden escapes or other inappropriate species, present throughout the wooded areas, should gradually be removed, and stumps painted with a glyphosate based herbicide. These include laurel, horse chestnut and Himalayan balsam, Much of this work could be carried out by local volunteers as many of these plants are only small trees or shrubs.

Area **6** should be largely non-intervention (apart from trees adjacent to the railway line, which will be surveyed and action taken as necessary). This piece of wet alder woodland located between the two drainage ditches on the northern side of the site is fairly diverse and characteristic of mature alder habitat. Any intervention may damage this locally rare piece of habitat and it therefore should be allowed to continue with its natural processes.

The mature alder trees along the ditches in areas **4** and **8** should also be left unless some require work in the interest of safety. These trees provide a screen between the amenity area and the more extensive nature conservation area and should be retained. The trees located on the northern stream bank (areas **5,7** and **11**) should also be retained.

Area **12**, along the southern bank of the stream, should be managed carefully. Which could be coppiced in year 1, as an experimental block, to determine whether the increased light levels reaching the stream benefits its ecology. If it is determined that there is no benefit then the trees should be allowed to regenerate and not coppiced again. If it is determined that coppicing does benefit the stream's ecology, then the whole non-intervention aspect of the management proposal along the stream banks, should be reviewed. This could lead to the introduction of areas **12a,b,c** and **d** being added to the 10 year coppice rotation.

Areas **14a** and **16** should be left as they are. In terms of conservation value, they consist mainly of alder/willow scrub, which can be found elsewhere on the site. These areas provide a valuable screen between the site and the adjacent housing estates.

#### Coppicing regime

Coppicing ideally should be carried out between October and March. This ensures that there is minimal disturbance to wildlife present. Before any significant coppicing can commence a felling licence may be required from the Forestry Commission if areas of timber to be felled are larger than 5m<sup>2</sup> in any one calendar quarter. Also permission must be obtained from the Local Planning Authority before any trees are coppiced with Tree Preservation Orders placed on them (see map 5).

*Table 4 - 10 Coppicing Regime for Tadburn Meadows*

<b>Year</b>	<b>Coppice Area</b>
1	All trees adjacent to railway line (2,3,4,6&9) 3b and 12c
2	9c
3	2b
4	9a
5	12a
6	9b
7	3a
8	2a

This regime should be repeated every ten years (subject to speed of regeneration) which should allow complete regeneration of the coppiced trees. Such management will increase the diversity of the ground flora and thus the numbers of invertebrates present, by increasing

light levels to the understorey. Also, immature alder carr provides a potential niche for a variety of epiphytes and invertebrates that are not found on mature alder. Coppicing will also increase the longevity of the trees and introduce a mixed age stand.

A screen of trees between the wooded areas and the mown areas in areas 2, 3 and 9 could be retained between the site and the railway line.

The long term benefits of coppicing need to be emphasised to local people and amateur ornithologists, who may be concerned at the initial loss of woodland habitat. This could be done by issuing a press release in the local paper, before management work commences, general on site wardening. And also, posters could be put in the holders in the interpretation boards explaining the reasons and long term benefits of coppicing.

Previously uncoppiced trees can be cut low to the ground, in the usual way, leaving just a short stump to regenerate.

In the years following coppicing of a block, the regenerating trees need to be managed correctly to ensure that they develop mature substantial trunks. This management can be carried out by local volunteers or contractors. They need to ensure that only two or three of the most dominant regenerating shoots are retained. The other spindly shoots should be removed.

The understorey of most of this woodland presently consists mainly of bramble. Once a block is coppiced the increased light levels will lead to an initial surge in growth of bramble, which could potentially dominate the understorey. This can be controlled on a yearly basis in late autumn, by bramble bashing by local volunteers to try and promote the development of a more diverse ground flora. All blocks should be managed in this way apart from areas **6,12** and **16**. Bramble in these areas will hopefully provide an effective barrier against any damage to sensitive area that may occur from inquisitive dogs reaching the adjacent stream banks.

*Table 5 Summary of woodland management*

<b>Prescription</b>	<b>By Whom</b>	<b>When</b>
Coppicing	Contractor	Oct-March (see table 4)
Regeneration management of coppice	Volunteers/Contractors	One or Two years after coppicing
Bramble control	Volunteers	Every year in autumn/winter
Removal of non-natives	Volunteers/Contractors	On a yearly basis in autumn or winter
Tree safety survey	Tree Officer	On-going
Unsafe tree management	Contractor	As soon as possible

**Potential uses of the cut wood**

It is possible to leave woodpiles, which would provide a valuable microhabitat, If possible some intact trunks could be left in situ, as these will be fairly vandal resistant, too heavy to move, but still provide a valuable habitat as rotting deadwood.



## ***Management Operation No. 2: Wet Meadow***

The piece of grassland found in areas **13** and **15** contains a diversity of flora and fauna and is therefore extremely valuable in terms of nature conservation. Area **13** presently contains the most valuable segment of grassland and the management of this area will initially be different to area **15**.

### **Management of Area 13**

To retain the meadow habitat, the nutrient quality of the soil needs to remain low. This favours grassland species but is not so suitable for rank species such as bramble and scrub. To accomplish this, the dead or dying plant material needs to be removed at the end of each season. Thus, during the period of late July to early August the meadow needs to be mowed, using an Allen-scythe or similar machine. The cut material must then be raked off and removed to retain the low nutrient level of the soil. Mowing should be done starting from the centre of the meadow working outwards, to enable invertebrates move to the margins of the meadow. Late August the best time to cut the meadow as it will reduce the dominance of rank grasses. Mowing should occur on a two year rotation. It is suggested that only one half of the meadow should be managed (cut and raked) in any one year. The other half managed the following year. The whole meadow would, therefore, be completely mowed, raked and arisings removed a two year period.

It would be preferable if the meadow area was extended. Scrub (e.g. willow and oak) and rank species have encroached over the years leaving the pockets of grassland that are now present. The scrub should be removed working out towards the perimeter, whilst still retaining a screen of trees between the site and the adjacent housing estate. This should promote the extension of the meadow into previously scrub-encroached sites. This work should be carried out between October and March.

Some of the scrub clearance can be carried out by volunteers although the larger trees may need to be removed by contractors. Also, all cut stumps must be treated by contractors to inhibit regeneration using a Glyphosate based herbicide. This in the long term should decrease the work load. Without stump-treatment, contractors or volunteers will have to return every few years to coppice these regenerating trees. (N.B. some re-treatment may be required in the following years.)

### **MANAGEMENT OF AREA 15**

This area was once rough grassland, as in area **13**, In an attempt to return this area back to grassland, the Tadburn Conservation Volunteers have knocked back the bracken and encroaching scrub. This management has had a positive effect. The bracken re-growth has been less vigorous than before. This has allowed the reappearance of some desirable grassland species. To eradicate the bracken, though, management needs to continue along a similar vein.

It is advised that contractors beat, crush and roll the bracken, rather than cut it, in late June to early July (avoiding doing it on wet ground). After employing this method it is recommended that the bracken should be sprayed with a herbicide such as Asulox or equivalent by a contractor. These joint methods should be repeated until the bracken is completely eradicated, possibly for up to ten years, which should then hopefully lead to the re-establishment of rough grassland.

Table 6 Summary of meadow management

Prescription	By Whom	When
Cut (from inside, working out) and rake half of area 13	Contractor	Yr1 and every other year, in late July to early August
Cut (from inside, out) and rake other half of area 13	Contractor	Yr 2 and every other year, in late July to early August
Extend meadow by removing scrub out towards perimeter	Contractor/volunteers	Every year, October to March
Stump treatment of cleared scrub	Contractor	After clearing, October to March
Beat, crush and roll bracken in area 15	Contractor	Yearly, late June to early July
Treat bracken with herbicide	Contractor	Every two years after beating, crushing and rolling

### **Management Operation No. 3: Drainage Ditches**

There are two ditches found in areas **4** and **8**. This area of the site is wet throughout the year and it a potential flood hazard. These ditches were probably designed to try and minimise the amount of flooding in this area. Presently the ditches are silted up and water is therefore contained in semi-permanent pools within the alder woodland. Waterlogged soil must remain if the alder woodland is to thrive and any management procedure that disrupts the integrity of the habitat could be catastrophic. Therefore, these ditches should be retained, to ensure that water can flow into the stream during times of severe flooding and reduce the risk to the local people who use he site.

One management option is to use sluice gates to control the flow. These would usually remain closed, to ensure that the ground remains waterlogged but could be opened during periods of severe flooding. This is therefore a reversible flow control which may benefit the woodland habitat in the long term. advice about how to construct such gates could be gained from the Flood Defence or Conservation departments of the Environment Agency.

Table 7 Summary of Drainage Ditch Management

Prescription	By Whom	When
Remove some silt from ditches	Volunteers	Autumn
maintain sluice gates in each ditch	Contractor/Volunteers	Late Summer

### **Management Operation No. 4 Areas mown for amenity**

Area **10** located alongside the main footpath through the site and area **14b** have, in previous years, been managed for amenity purposes only. This has involved the regular mowing of these areas to retain a lawn type appearance.

Area **10** needs to be managed by contractors. This area needs to be cut and the cuttings removed twice a year, once during March or April and again in late September to early October. Removing the cuttings will ensure that the soil quality remains poor, encroachment of rank species such as nettles and brambles. It is also important to ensure that the areas are not cut during a very wet period with ride-on mowers, otherwise the ground is churned up and rutted. This will not benefit the integrity of the habitat.

Area **14b** should be cut and raked once a year during the period of late September to early October as cuckoo flower flowers in early spring.

In both **10** and **14b** paths should still retain a margin of short grass, 1m wide, either side of them.

**Table 8 Summary of Amenity Grassland management**

Prescription	By Whom	When
Area 10 cut and raked	Contractor	Twice a year, March-April and late September – early October
Area 14b cut and raked	Contractor	Once a year, late September to early October

**Management Operation No. 5 Old Hedge**

The management aim is to retain the current cover between the housing estate and the site. Periodic cutting back of the hedge to maintain shape and vigour .this work will be carried out in winter as to minimise disturbance to wildlife.

**Table 9 Summary of old hedge management**

Prescription	By Whom	When
Cut back sides	Contractors	Autumn and winter

**Management Operation No 6: successional zone between wood and Amenity grass area.**

This zone is located between the Amenity grass area and the adjacent alder and willow woodland (areas **2** and **3**). It provides a useful habitat for invertebrates and contains some plant species usually associated with the successional stage between grassland and woodland. If possible, it would be beneficial if this strip were widened. It is suggested that the edge bordering the amenity grassland be allowed to develop into this successional habitat. This could be achieved simply by discontinuing the mowing of a strip of the pitch adjacent to the successional habitat already present. The zone would be improved even if it was widened by only 2 or 3 metres. This should hopefully allow a greater diversity of successional flora and therefore increase the number of invertebrates such as Arachnids (spiders) and Lepidoptera (butterflies and moths).

To retain this successional habitat, it would be necessary to cut and collect arisings on a yearly basis in late September to early October.

**Table 10 Summary of successional zone management**

Prescription	By Whom	When
Widen strip adjacent to areas 2 & 3 by 2-3m	Contractor	As soon as possible
Cut and collect arisings and remove from site	Contractor	Cut on a 3 year rotation in late September to early October

### 3.2 Table 11: Summary of Prescriptions to be carried out by Contractors

Prescription	By Whom	When
<b>WOODLAND MANAGEMENT</b>		
Coppicing	Contractor	Oct-March (see table 4)
Regeneration management of coppice	Contractor / Volunteers	One or two years after coppicing
Removal of non-natives	Contractor / Volunteers	On a yearly basis in autumn or winter
<b>WET MEADOW MANAGEMENT</b>		
Cut (from inside, working out) and rake half of area 13)	Contractor	Yr 1 and every other year, in late July to early August
Extend meadow by removing scrub out towards perimeter	Contractor / Volunteers	Every year, October to March
Stump treatment of cleared scrub	Contractor	After clearing October to March
Beat, crush and roll bracken in area 15	Contractor	Yearly, late June to early July
Treat bracken with herbicide	Contractor	Every two years after beating, crushing and rolling
<b>DRAINAGE DITCH MANAGEMENT</b>		
Construct a sluice gate in each ditch areas 4 & 8 (optional)	Contractor / Volunteers	Late Summer
<b>AMENITIY GRASSLAND MANAGEMENT</b>		
Area 10 cut and raked	Contractor	Twice a year, March- April and late Sept-early October
Area 14b cut and raked	Contractor	Once a year, late Sept to early October
<b>OLD HEDGE MANAGEMENT</b>		
Strim rank strip and remove cuttings (area 1)	Contractor	On a 3 year rotation in late Sept/early October
<b>SUCCESSIONAL ZONE MANAGEMENT between football pitch and woodland (2&amp;3)</b>		
Widen strip by 2 or 3m	Contractor	As soon as possible
Strim strip and remove cuttings	Contractor	Annually in late Sept to early October

- When shown in the 'By Whom' section, the work can be carried out by volunteers rather than contractors if there is a regular volunteer work party.

### 3.3 Table 12: Summary of Prescriptions to be carried out by Volunteers

Prescription	By Whom	When
<b>WOODLAND MANAGEMENT</b>		
Regeneration management of coppice	Volunteers / Contractor	One or two years after coppicing
Bramble control	Volunteers	Every year late autumn/early Winter
Removal of non-natives	Volunteers / Contractor	On a yearly basis in autumn or winter
<b>WET MEADOW MANAGEMENT</b>		
Extend meadow (area 13) by removing scrub out towards perimeter	Volunteers / Contractor	Every year, October to March
<b>DRAINAGE DITCH MANAGEMENT</b>		
Remove some silt from ditches (areas 4 & 8)	Volunteers	Autumn
Construct a sluice gate in each ditch	Volunteers / Contractor	Late Summer
<b>OLD HEDGE MANAGEMENT</b>		
Plant hawthorn mix (area 1)	Volunteers	Autumn and winter
Monitor hawthorn growth	Volunteers	Annually
Hedgelaying	Volunteers	In 8-10 years Once the Hawthorn is mature

- Some of the work, where shown in the 'By Whom' section, could be carried out by contractors in the absence of volunteers.

#### Compartment 1:

- Maintain hedge by cutting side once a year
- Monitor mature oak trees
- Maintain strip of rank grassland cutting and removing 1/3 of vegetation per year after brambles have fruited to reduce vigour.

#### Compartment 2a & 2b:

- Coppice alder ( at a height of 6- 9" ) and recommence 20 year rotation. Count stools and divide by 20 to achieve yearly cut rate.
- Remove sycamore and control regrowth.
- Allow stand of old willow to collapse naturally.
- Leave line of trees by railway to act as a screen.
- Maintain deadwood Habitat

### **Compartment 3a & 3b:**

- Coppice alder as per compartment **2a & 2b**.
- Remove sycamore and control regrowth
- Allow stand of old willow to collapse naturally.
- Leave line of trees by railway to act as a screen.
- Dig ephemeral ponds after coppicing has taken place.
- Allow ephemeral ponds to reach successional stage.

### **Compartment 4:**

- Remove silt accordingly to allow gradual flow of water to stream
- Construct sluice gates to control flow.
- Monitor water levels annually in ditch to ensure it is kept open and reduce risk of the path flooding.

### **Compartment 5:**

- Retain current stand of mature trees.
- Coppice hazel on 7 year rotation to increase light level of stream, all brash to be removed from site.
- Survey all trees along this boundary and monitor, work to be carried out by TVBC Tree Officer.
- Monitor river bank against erosion by dogs entering and leaving the water.

### **Compartment 6:**

- Survey and monitor trees close to railway line in the interest of public safety.
- Remove non- native species ( sycamore, horse chestnut, Himalayan balsam) and treat tree stumps by painting with roundup bioactive.
- Survey and monitor trees close to footpath in the interest of public safety.
- Treat whole area as non intervention allow to continue with natural process, monitor and review.

### **Compartment 7:**

- Retain and monitor current stand of mature trees in the interest of public safety.
- Select suitable hazel for coppicing to increase light levels on the stream, this can be achieved by looking for stools over hanging the stream and coppicing to allow more light or coppice 1 in 3 on a 7 year rotation.

### **Compartment 8:**

- Remove silt accordingly to allow gradual flow of water to stream
- Maintain sluice gates
- Monitor water levels annually in ditch to ensure it is kept open and reduce risk of the path flooding

### **Compartment 9:**

- Coppice alder ( at a height of 6- 9" ) and recommence 10 year rotation. Count stools and divide by 10 to achieve yearly cut rate.
- Remove sycamore and control regrowth.
- Allow stand of old willow to collapse naturally.
- Removal of Himalayan balsam
- Leave line of trees by railway to act as a screen and monitor in the interest of public safety.
- Maintain and monitor current water level.
- Continue to dig new ephemeral ponds in this compartment and allow existing ponds to develop to successional stage.

### **Compartment 10:**

- Keep areas open by cutting and removing arisings twice yearly, between march and early April and September to early October.
- Cut back any scrub overhanging open area.

### **Compartment 11:**

- Retain current tree stand and Coppice hazel on rotation to increase light level in stream.
- Keep areas open by cutting and removing arisings once a year, late August .

### **Compartment 12:**

- Retain current stands of alder and willow block 12a, 12d allow natural decline to occur.
- Maintain trees near paths in the interest of public safety.
- Area 12b, 12c which is a mix of alder and willow should be coppiced to increase light levels on stream.
- Rotational cutting of bramble. Bramble within areas 12a – 12d should be cut on rotation to create a varying age structure of bramble and creating open ground allowing sensitive plants to colonise.

### **Compartment 13:**

- To retain meadow habitat Keep area open by cutting half the meadow and removing arisings once a year, between late July, early august to reduce Deschampia. Mow in strip fashion to allow invertebrates to fulfil life cycle.
- Continue to increase size of meadow to benefit invertebrates, by cutting down hazel young oak, alder and willow. Treat stumps with a suitable glyphosate based weed killer such as round up bi-active
- Control any re-growth using volunteers.
- Construct deadwood refuges around edges of meadow for invertebrates .

### **Compartment 14:**

- **14a**, Retain current stands of alder and willow, allow to collapse naturally.
- Survey for newts, record and monitor.
- Retain and enhance wet areas/ ephemeral ponds. dig new ponds, allow succession of current ponds.

- Creation of new ponds. Allow succession of current ponds.
- Create hibernacula for newts using coppiced alder from other areas on site.
- **14b**, cut and collect to retain grassland area removing arisings once a year, between late September to early October .
- Expand grassland area to benefit butterflies and invertebrates, erect interpretation to explain management from amenity grassland to meadow.
- Monitor progress and review.

### Compartment 15:

- Control bracken by cutting in mid June and late July and remove material. Repeat for 3-4 years or until under control. Spray with herbicide when plant is green if required using ( **Asulox** )
- Continue to increase size of meadow to benefit invertebrates, by cutting down hazel young oak, alder and willow. Treat stumps with a suitable glyphosate based weed killer such as round up bi-active.
- Control any re-growth using volunteers.

### Compartment 16:

- Retain current stands of alder and willow, allow to collapse naturally.

### 3.3.1

A- Administration  
R- Records  
M- Management

**Table no 13??? Summary of Management Projects**

PROJECT	COMPARTMENTS	GROUP
Coppicing of Alder	2a ,2b, 3a,3b,9a, 9b, 12c	M & A
Remove non-native species	Whole site	M
Maintain ditches remove silt	4, 8	M
Remove sycamore and treat stumps	Whole site	M
Remove litter	Whole site	M & A
Gap-up hedge	1	M
Retain current stand of mature trees	5,7,11,12a,12b,12d	M & A
Maintain meadows	13,15	M
Regeneration of heather	13b, 13c	M
Control bracken	15	M & R
Monitor tree line by railway	2a,2b,3a,3b,6,9a,9b,9c	M & A
Construct sluice gates to managed water levels	4,8	M
Monitor river bank erosion	5,7a,7b,11,12a,12b,12c,12d	M
Non intervention of willow	2a,2b,3a,3b,9,12a,12b,12d	A
Monitor tree line by footpath	5,6,9c,12a,12b,12c,12d	M,R, A



**Table No 14**

<b>PROJECT</b>	<b>COMPARTMENT</b>	<b>GROUP</b>
Monitor vegetation change after coppicing	2a,2b,3a,3b,9a,9b,9c,	R
Survey birds	Whole site	R
Survey dragonflies / damselflies	Whole site	R
Survey lower plants (lichens)	Whole site	R
Survey invertebrates	Whole site	R
Monitor public use	Whole sites	R
Monitor dog exercising / fouling	Whole site	R
Survey grass species on mown areas	10,14b,13,15	R
Monitor school usage	Whole site	A, R
Monitor mammal species	Whole site	R
Regular fixed point photography	Whole site	R

**3.3.2**

<b>HABITATS AND SPECIES</b>	<b>TIME TO SURVEY</b>
Freshwater	May – September
Woodlands	March - July (spring vegetation: March - April)
Heathlands	June – September
Mosses & lichens	All year, but best after rain
Fungi	March - May, and September – November
Higher plants	April – November
Birds	March - June (breeding), October – March (overwintering)
Invertebrates	April - October (breeding), October – March (overwintering)
Bats	April - October (breeding), October – March (overwintering)

**3.3.4 Work Parties****Contractors**

Contractors will carry out the majority of the work involving the cutting of timber and operations on a large scale. Constraints will be put on contractors to use biodegradable chain saw oil, employ most environmentally proactive woodland and meadow management techniques and extra care when extracting taken when extracting timber.

The contractors must fulfil Test Valley’s Health and Safety statutory requirements as stipulated by the Health and Safety Officer.

### 3.3.5 Volunteers

For smaller projects including coppicing, small scale tree felling, ephemeral pond creation, volunteer work parties will be arranged.

In 2004, 'The Tadburn Conservation Volunteers (TCV ) group was inaugurated. This group is made up of local residents who assist in the forward planning and implementation of the Management Plan. (TCV) were originally set up in partnership with BTCV and are now a self sustaining group with a constitution.

### 3.4 Work Schedule

#### 3.4.1 Work Programme

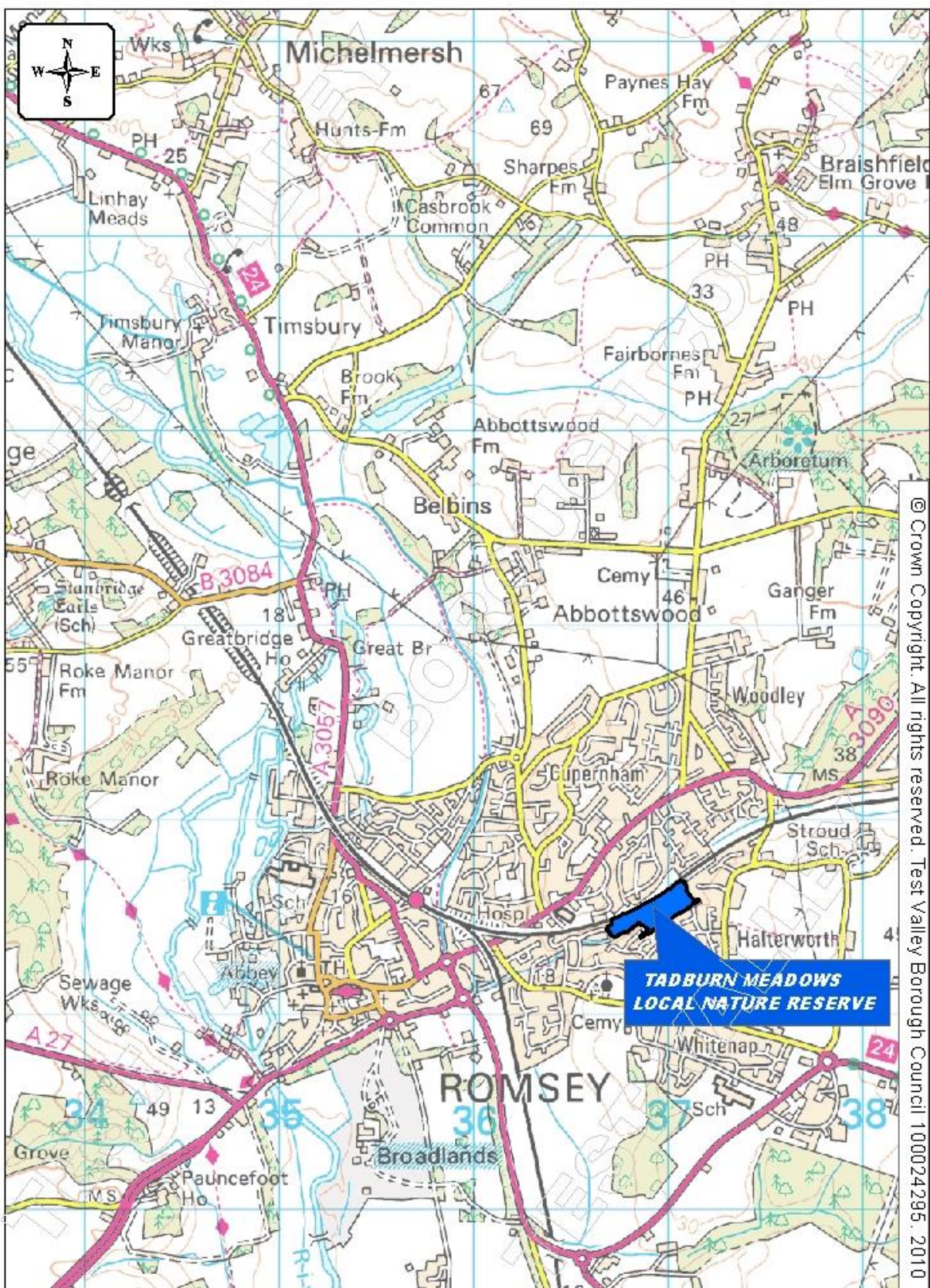
Table 11. 5 Year Work Schedule

OBJECTIVE	PRESCRIPTION	COMPARTMENT	YEAR				
			1	2	3	4	5
Coppice alder	Count stools and divide by 20 to achieve yearly cut rate between October and February	2a, 2b, 3a,3b,9	*	*	*	*	*
Remove Sycamore	Cut trees between October and January. Treat stumps with herbicides	Whole Site	*	*	*	*	*
Remove litter	Regular litter picking - use of byelaws and regulations for non-conformity	Whole site	*	*	*	*	*
Manage water in ditches	Construct sluice gates to maintain water levels in peak or low flow	4,8	*				
Maintain ditches	Remove leaf litter and silt build up to maintain gradual flow.	4,8		*		*	
Maintain meadows	Cut ½ once a year late August Remove material from site.	13,15	*	*	*	*	*
Gap up hedge with hawthorn and blackthorn as required	Prepare ground in September for February to March and October to November planting  Maintain for 3 years post planting	1	*				
Maintain strip of rank grassland	cut and remove material 1/3 every year after brambles have fruited	1	*	*	*	*	*

Monitor mature oaks	Survey trees for health and vigour	1	*		*		*
Non intervention of willow	Allow willow stands to collapse naturally	3a,3b,9	*	*	*	*	*
OBJECTIVE	PRESCRIPTION	COMPARTMENT	YEAR				
			1	2	3	4	5
Maintain screen of alder	Maintain and managed screen of alder along railway line trees to be survey every other year to reduce risk of failure over railway line	3a,3b,6,9	*		*		*
Non-native species	Remove non-natives from site by cutting and treating stumps	Whole site	*	*	*	*	*
Retain current stand of mature trees	Monitor and manage mature trees survey	5	*		*		*
Coppice hazel	Coppice 1 in 3 trees on 7 year rotation to increase light level on stream remove all brash Between October and January	5,7,11,12c	*				
Monitor river bank	Monitor river bank against erosion by dogs entering and leaving the water	5	*	*	*	*	*
Monitor trees	Maintain and monitor trees close to footpaths around site in the interest of public safety	Whole site	*		*		*
Non intervention area	Treat whole area as non intervention, continue to monitor area	6	*	*	*	*	*
Water levels	maintain and monitor current water levels	9	*	*	*	*	*
Maintain grass areas	Cut once a year late August. Remove material from site	10,14b	*	*	*	*	*
Maintain Scrub	Cut back any scrub to keep area open	10,11,13,14b,15	*	*	*	*	*
Maintain bramble	Rotationally cut bramble to create varying age structure and open group to allow development of sensitive plants	12a,12d	*	*	*	*	*
Retain current stand of trees	Maintain and retain current stand of willow and alder allow to decline naturally	12a,12b,12d,14a,16	*	*	*	*	*

Dead wood	Construct deadwood refuges/hibernacula for invertebrates and newts around meadow areas.	13,14a	*	*	*	*	*
Control Bracken	Cut in mid June early July and remove material repeat 3-4 years monitor, if process is not working spray with asulox in late June repeat as necessary	15	*	*	*		
Ponds	Continue to dig new ephemeral ponds and allow development to sucesional stage	3a,3b,9,14a	*	*	*	*	*
Monitor and review	Monitor and review management plan using survey data	Whole site	*				*

4  
Appendix I  
Map

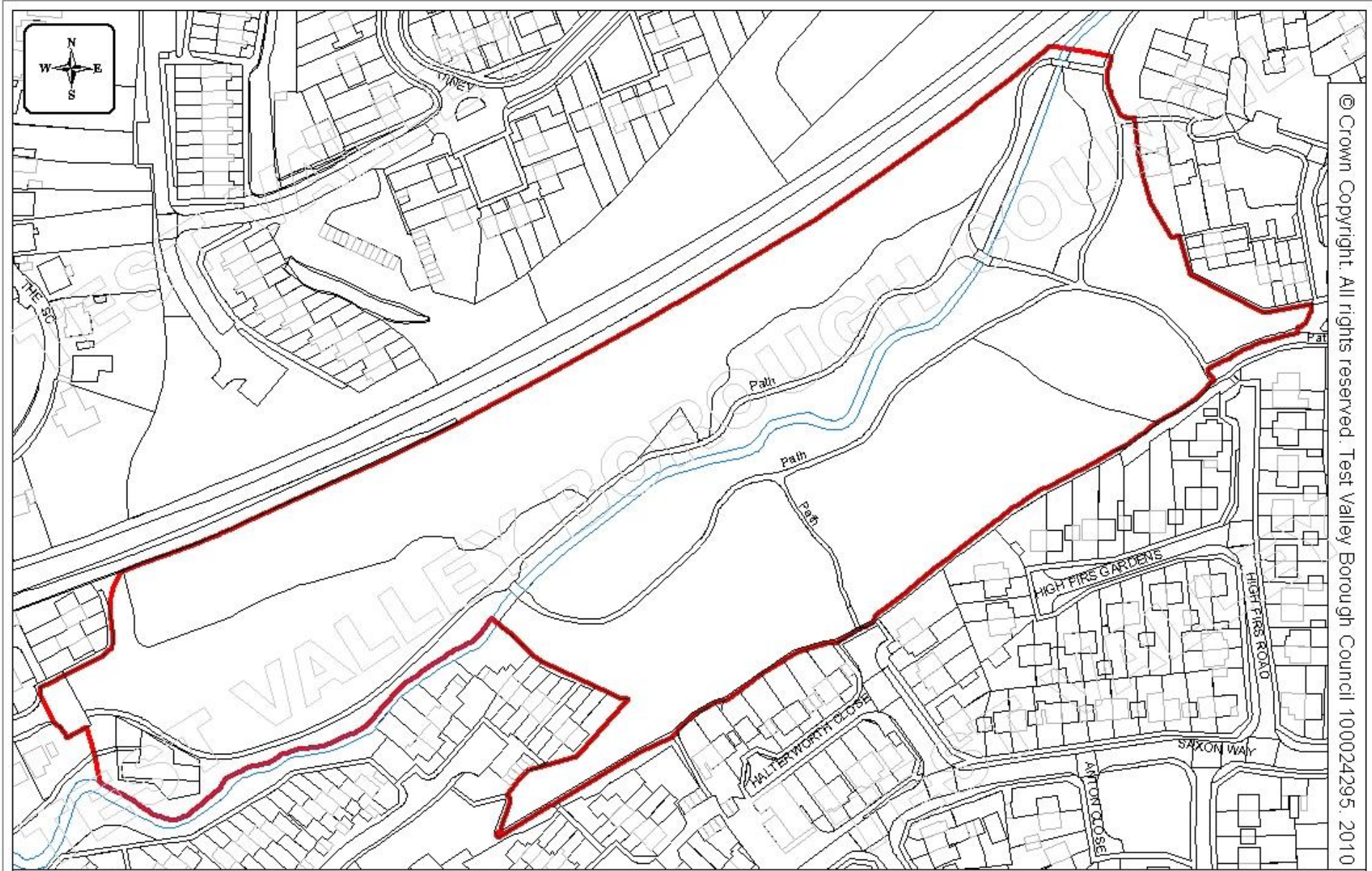


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Scale: 1:50,000 @ A4  
 Date: 7th Dec. 2010  
 Drawn: Ian Moodie  
 Dept: GIS  
 Doc:

**Tadburn Meadows Management Plan**  
**Map 1: Location**



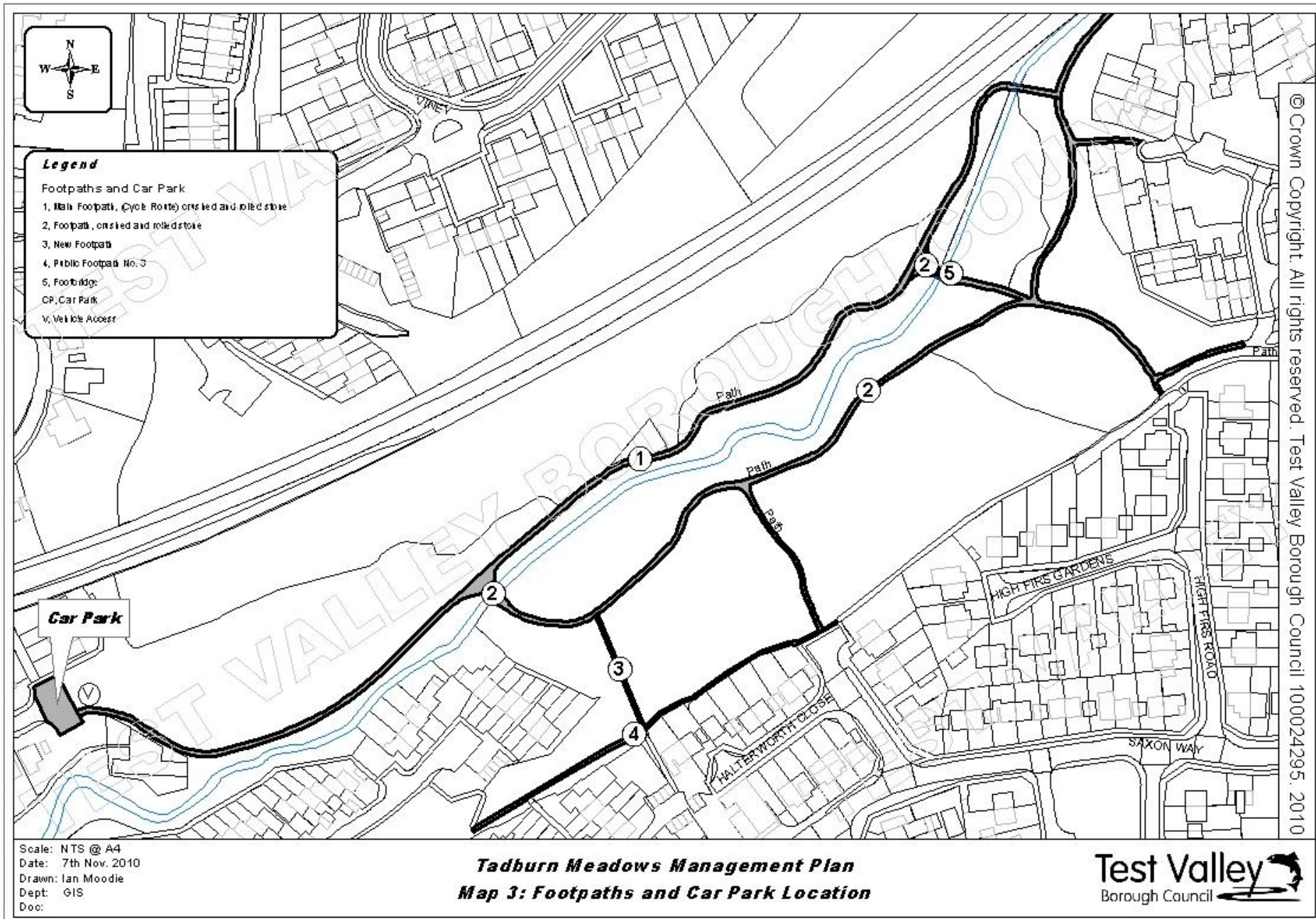


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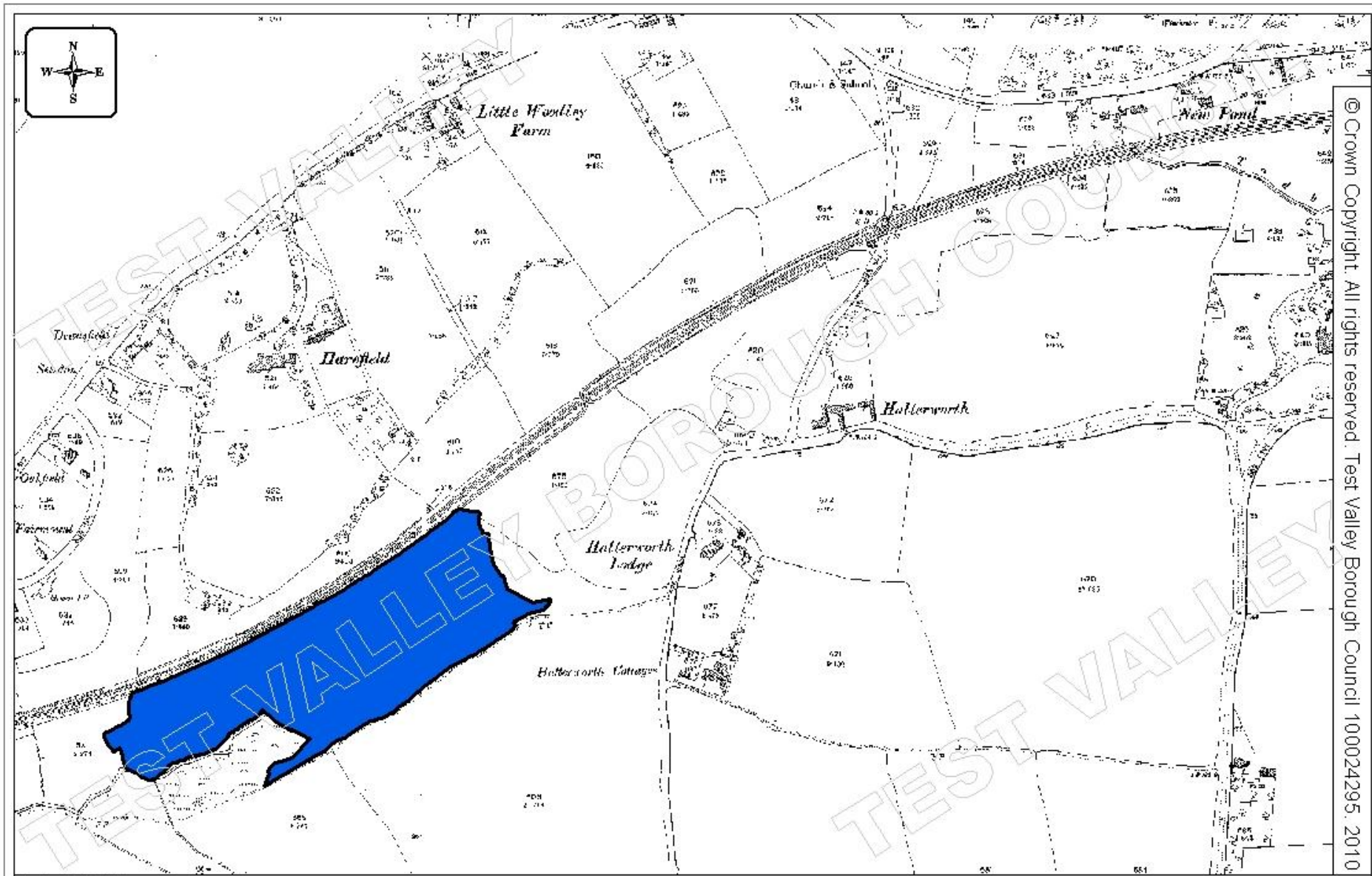
Scale: NTS @ A4  
 Date: 7th Nov. 2010  
 Drawn: Ian Moodie  
 Dept: GIS  
 Doc:

**Tadburn Meadows Management Plan**  
**Map 2: Boundary Map**







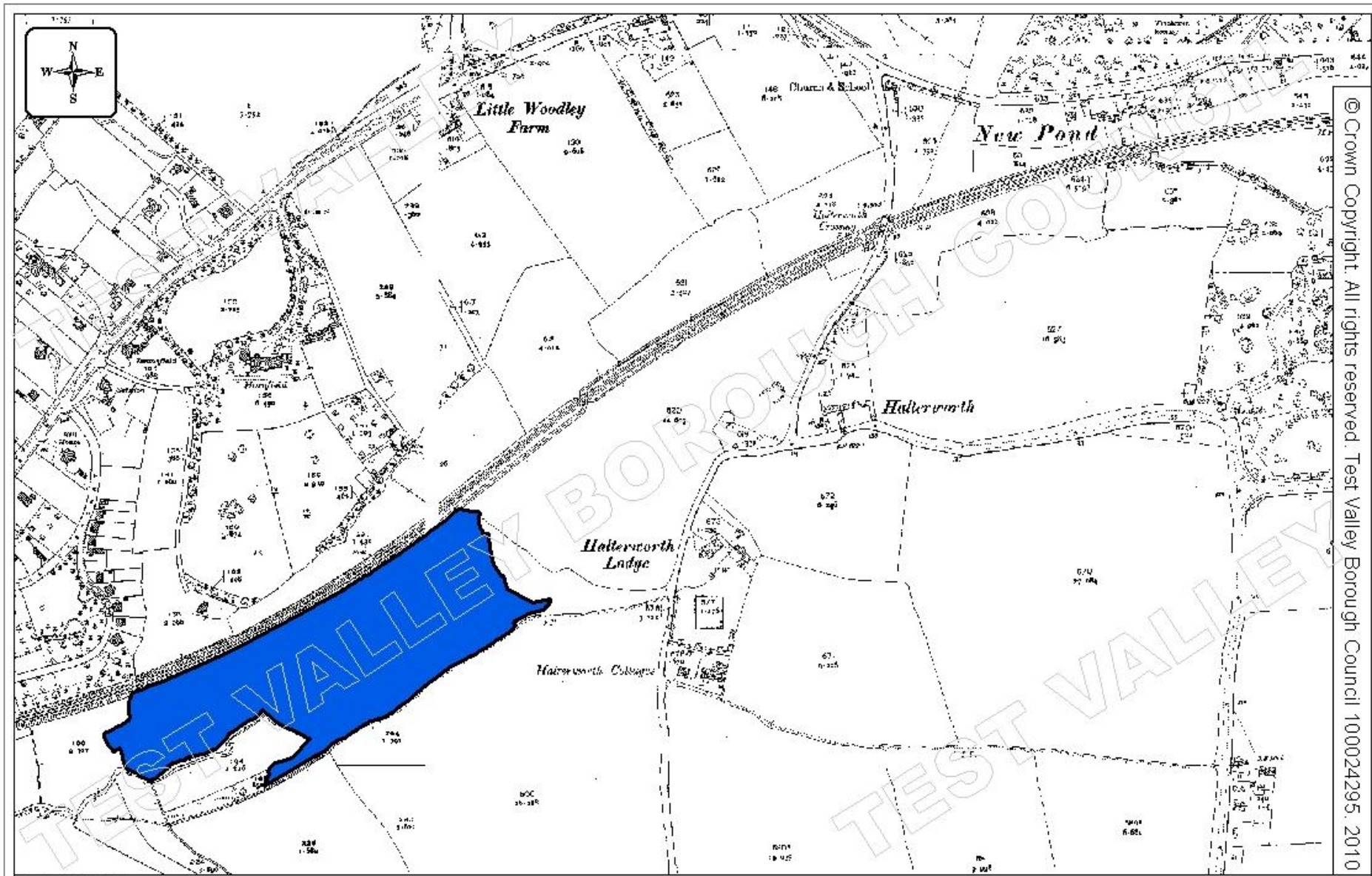


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**Tadburn Meadows Management Plan**  
**Map 4a: Historical Maps Circa 1896**



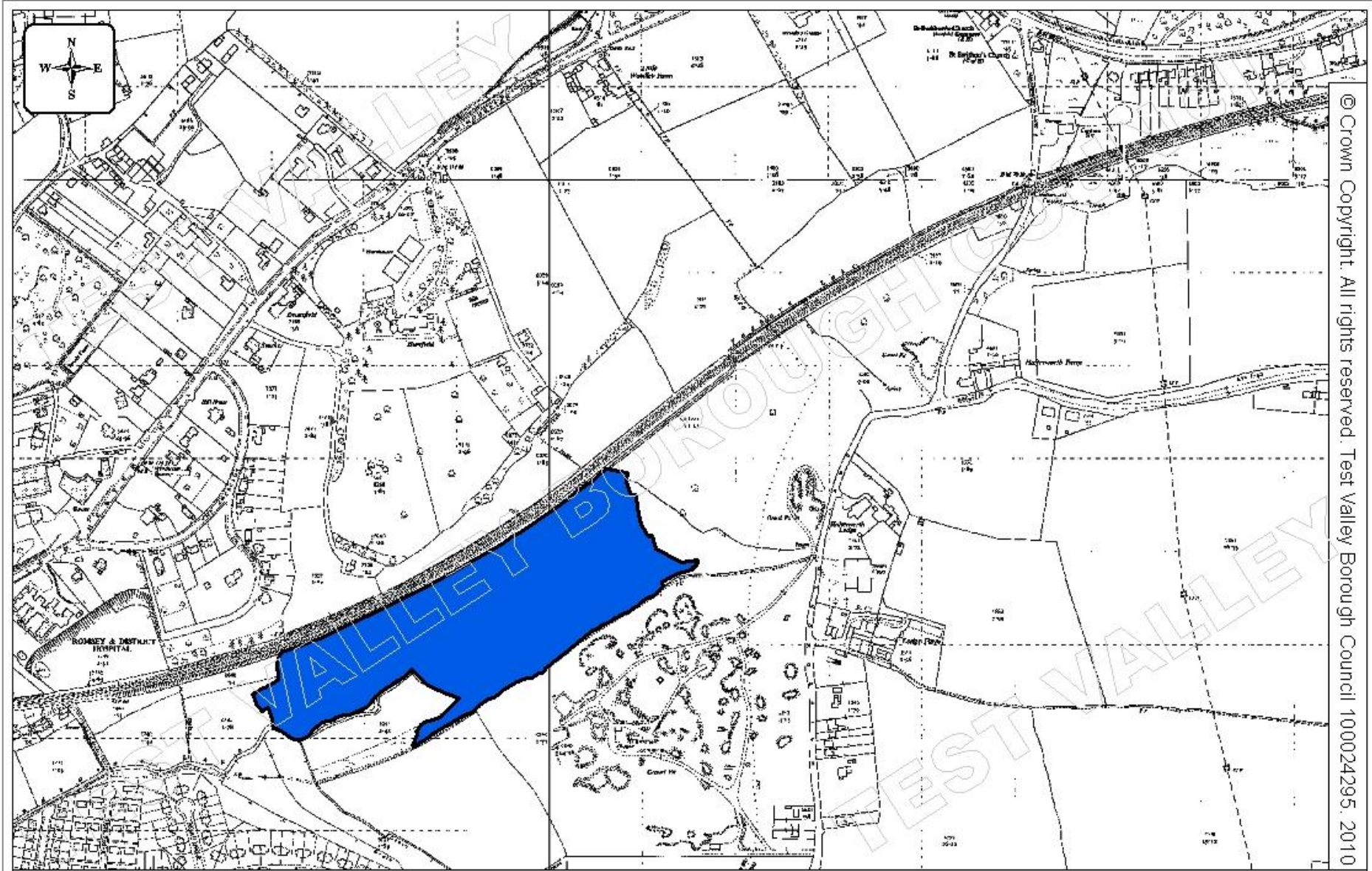


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**Tadburn Meadows Management Plan**  
**Map 4b Historical Maps Circa 1910 - 1946**

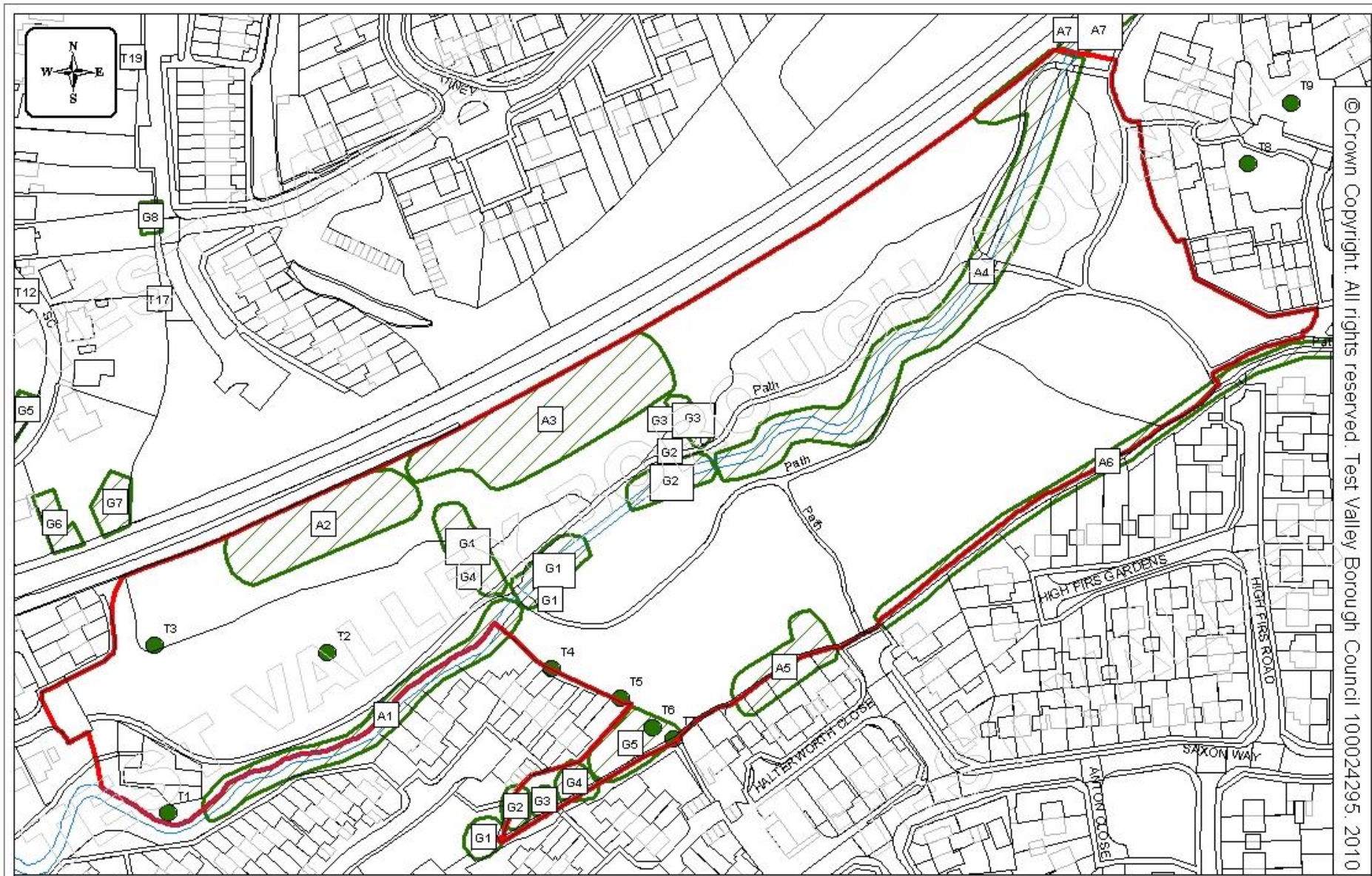




Scale: NTS @ A4  
 Date: 7th Nov. 2010  
 Drawn: Ian Moodie  
 Dept: GIS  
 Doc:

**Tadburn Meadows Management Plan**  
**Map 4c Historical Maps Circa 1974**

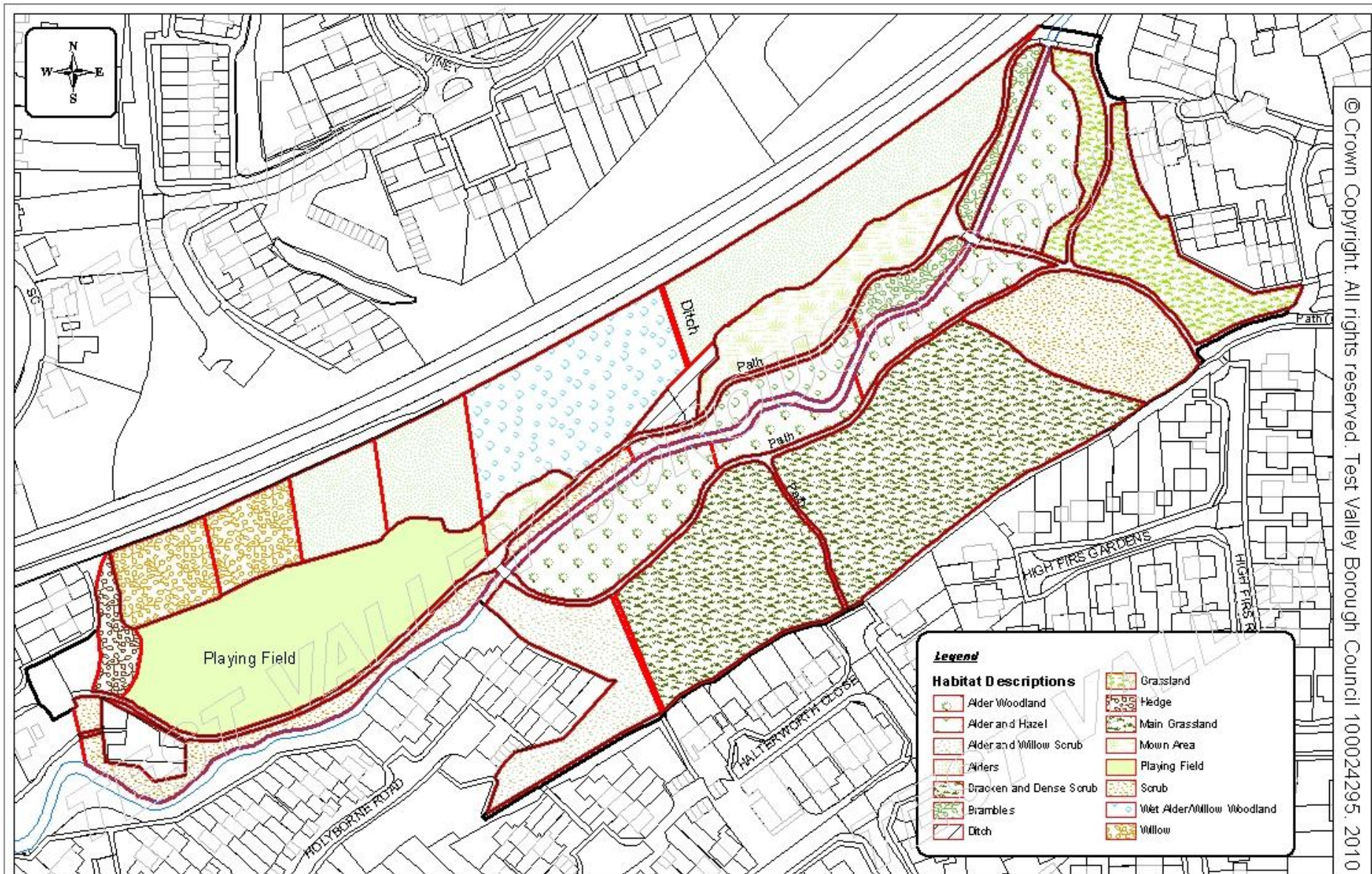




Scale: NTS @ A4  
 Date: 7th Nov. 2010  
 Drawn: Ian Moodie  
 Dept: GIS  
 Doc:

**Tadburn Meadows Management Plan**  
**Map 5: Tree Preservation Order Information**



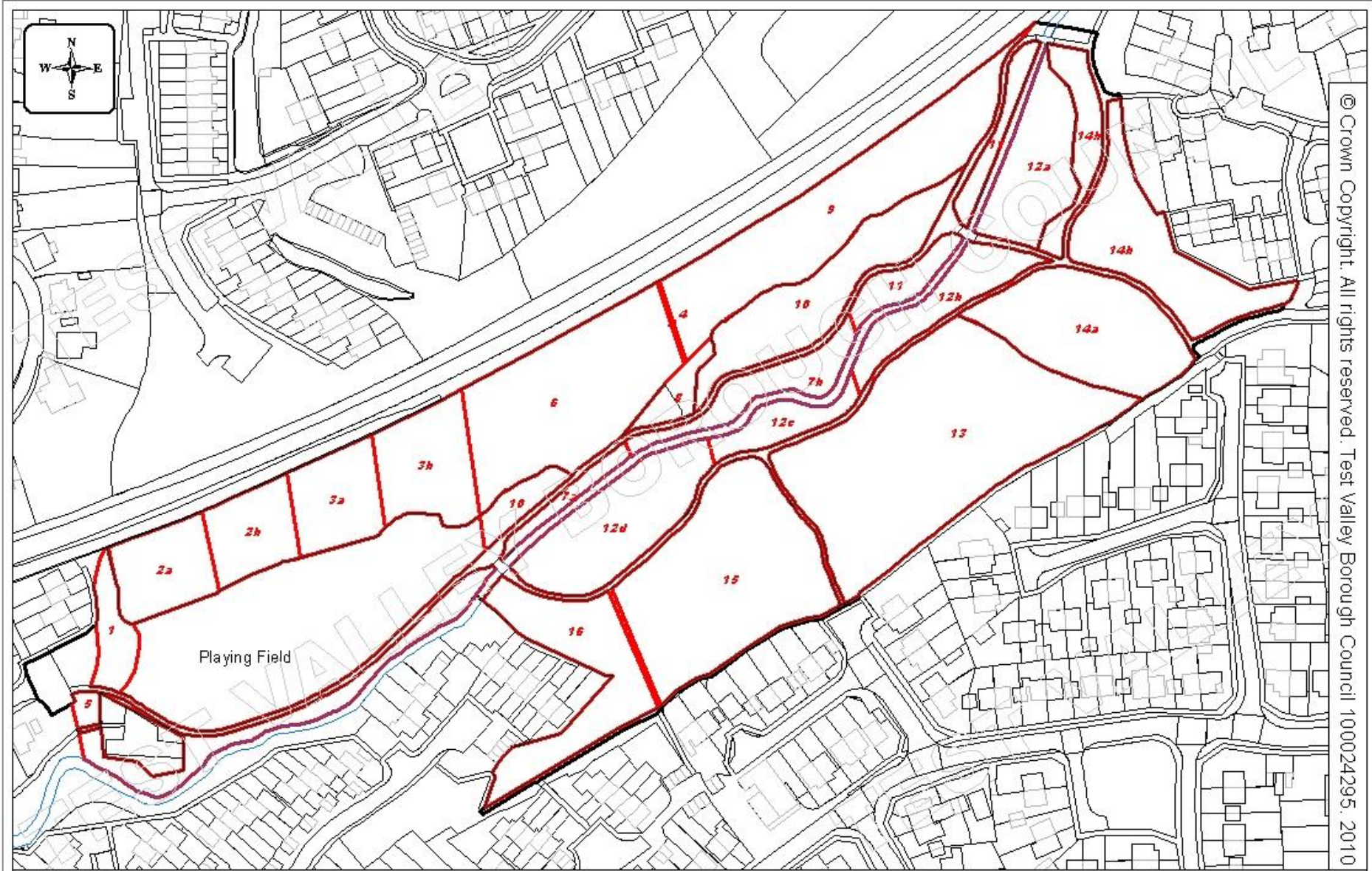


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Scale: NTS @ A4  
 Date: 28th Oct. 2013  
 Drawn: Ian Moodie  
 Dept: GIS  
 Doc:

**Tadburn Meadows Management Plan**  
**Map 6: Basic Habitat Descriptions**





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 Date: 7th Nov. 2010  
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**Tadburn Meadows Management Plan**  
**Map 7: Habitat Compartment Map**



**Appendix II**  
**Floral Survey Data**

## TADBURN MEADOW

### General description and management

A small rank, neutral and substantially unimproved meadow situation on a gently sloping and north-easterly facing valley side site next to the Tadburn stream, Romsey.

The site is managed by manual cutting.

### Communities

(i) [MG9]: *Deschampsia cespitosa* grassland.

Rank with scrub encroaching locally

Canopy:- Locally frequent Grey Willow, Birch, Oak, Bramble, conifer and Ash.

Flora:- Dense rank Tufted Hair-grass with Yorkshire-fog, Meadow Foxtail, Meadowsweet, Oval Sedge. Greater Bird's-foot Trefoil, Rough Meadow-grass, Common Valerian and Purple Moor-grass.

## TADBURN MEADOWS – PLANTS

### Survey March – July 1996

Area No	Species
1	Ivy Nettle Bramble Lords & Ladies Dandelion Gallium sp. Geranium sp.
2	As above + Dock Lesser Celandine Honeysuckle
3	Bramble Laurel Holly Bracken Marsh Marigold Polygonum (Redshank) Dock Meadowsweet Lesser Celandine Dandelion Cleavers
4	Dock Nettles Bramble Lesser Celandine



5	Dock Nettles Bramble Lesser Celandine
6	Wild Carrot Gallium sp. Dandelion Lords & Ladies Grass species Meadowsweet Nettles Thistle – marsh? Sorrel Marsh Marigold Bracken Dock Rosebay Willowherb Ranunculus sp.

13 cont	Nettle Geum Ladies Smock Common Spotted Orchid (5) Lesser Spearwort Fen Bedstraw Common Marsh Bedstraw
14a	Bramble Dandelion Lesser Celandine Holly Ivy Lords & Ladies Rosebay Willowherb
14b	Common Marsh Bedstraw
15	Bramble Bracken Ranunculus sp. Cleavers Horsetail Honeysuckle Dandelion Bluebell Lesser Celandine Rosebay Willowherb Cleavers Foxglove Geum Bistort

## Tadburn Meadows Botanical Survey

April 2008

Simon Davey MA AMA MIEEM CBiol

### 1. Introduction

In spring 2008, Simon Davey Ecological Consultancy was commissioned by Boyce Jeffery of Test Valley District Council to undertake a botanical survey of Tadburn Meadow, Romsey and to make possible conservation suggestions for its management. The survey took place on a day when the weather was fine, and a comprehensive list of species that could be recorded in mid Spring was made. It is probable that certain higher plants were missed, and it suggested that a survey in July would rectify this.

The site consists of a meadow and woodland. The woodland is very damp in parts. It contains oak as well as several willow species as the main tree species. Alder, *Alnus glutinosa* is well established in the damper parts of the wood. A single tree that appears to be *Ulmus glabra* Wych Elm with a diameter of about half a metre is potentially important. *Ulmus glabra* English Elm regeneration is present also, though apparently it does not develop beyond a very early stage. Seeds of the *Ulmus glabra* were being produced in good quantity. To confirm the *Ulmus glabra* beyond doubt, its leaves would need to be examined, however an elm of this maturity is of importance whatever the species. The wood contains no sycamore, and regeneration is currently not a problem. However Cherry Laurel, *Prunus laurocerasus* is present in small quantity, and this should be removed as a matter of urgency. No *Rhododendron* was recorded, however an eye should be kept out for it, and if it does occur, immediate action to eradicate it should be taken.

The site contains patches of dense bramble. These will attract insects, and at their current level should be considered beneficial. However they should not be allowed to increase. The site is a patchwork of wet and dry habitat giving a considerable diversity. Currently the balance appears about right for a good biodiversity on the site. Of concern is the patchy, but dominant appearance of Himalayan Balsam *Impatiens glandulifera* seedlings. These are appearing on level ground away from the streams, and suggest that they are brought to the site during flooding. This is a notoriously difficult species to control, and the best that can be done is the removal of material as it matures to prevent seeds coming from plants growing on site.

### 2. General Ecological Observations

The site supports several ancient woodland indicator higher plants suggesting a degree of ecological continuity for the site. This is not matched by the lower plants. No bryophytes or lichens listed as indicators of ancient woodland were recorded. This suggests that a complete removal of the canopy must have taken place recently. The bryophyte flora is especially poor, however the presence of *Caloplaca obscurella* in the fertile state on one oak is of interest. The lack of *Hypogymnia physodes*, *Parmelia saxatilis* and *Usnea cornuta* on the oaks suggests a degree of eutrophication possibly due to local intensive farming. This is underlined by the presence on oak of nutrient demanding species such as *Physcia* species and especially *Hyperphyscia adglutinata*. The site contains considerable biodiversity as it is managed currently, and so long as the its current status is maintained with the few provisos given above, this would seem to be the best management for it.

### 3. Species recorded during the survey

In the following lists, an asterisk indicates a species that is present on the list of higher plants indicative of ancient woodland prepared by Richard Hornby and Francis Rose for the Nature Conservancy Council's Southern region.

# Indicates a species grown in gardens, and some caution should be used before adding it to the list. However, the assemblage of ancient woodland species present here would suggest that these species can be added as genuine wild plants.

The various willow species present are very difficult to identify at this time of year, and a complete list will only be possible when the leaves are fully developed.

### Higher Plants

*	<i>Adoxa moschatellina</i>	Moschatel
	<i>Alliaria petiolata</i>	Hedge Garlic
*	<i>Allium ursinum</i>	Ramsons
	<i>Alnus glutinosa</i>	Alder
*	<i>Anemone nemorosa</i>	Wood Anemone
	<i>Angelica sylvestris</i>	Wild Angelica
	<i>Anthriscus sylvestris</i>	Cow Parsley
	<i>Arum maculatum</i>	Lords and Ladies
	<i>Athyrium filix femina</i>	Lady Fern
	<i>Brachypodium sylvaticum</i>	Slender False Brome
	<i>Caltha palustris</i>	Marsh Marigold
	<i>Cardamine flexuosa</i>	Wavy Bittercress
	<i>Cardamine hirsuta</i>	Hairy Bittercress
	<i>Cardamine pratensis</i>	Lady's Smock
*	# <i>Carex pendula</i>	Pendulous Sedge
*	<i>Carex remota</i>	Remote Sedge
	<i>Carex riparia</i>	Greater Pond Sedge
*	<i>Chrysosplenium oppositifolium</i>	Opposite-leaved Golden Saxifrage
	<i>Cirsium palustre</i>	Marsh Thistle
*	<i>Conopodium majus</i>	Pignut
	<i>Corylus avellana</i>	Hazel
	<i>Crataegus monogyna</i>	Common Hawthorn
	<i>Crocus</i> sp.	Cultivated Crocus
	<i>Deschampsia cespitosa</i>	Tufted Hair-grass
	<i>Digitalis purpurea</i>	Foxglove
	<i>Dryopteris dilatata</i>	Common Buckler-fern
	<i>Epilobium hirsutum</i>	Great Hairy Willowherb
	<i>Equisetum palustre</i>	Marsh Horsetail
	<i>Filipendula ulmaria</i>	Meadowsweet
	<i>Fraxinus excelsior</i>	Ash
	<i>Galium aparine</i>	Goose-grass
	<i>Galium palustre</i>	Marsh Bedstraw
	<i>Geranium robertianum</i>	Herb Robert
	<i>Geum urbanum</i>	Wood Avens
	<i>Glechoma hederacea</i>	Ground Ivy
	<i>Glyceria fluitans</i>	Flote-grass
	<i>Glyceria maxima</i>	Reed Sweet-grass
	<i>Hedera helix</i>	Ivy
	<i>Heracleum sphondylium</i>	Hogweed
	<i>Holcus lanatus</i>	Yorkshire Fog

	<i>Hyacinthoides hispanica</i>	Spanish Bluebell
*	<i>Hyacinthoides non scriptus</i>	Bluebell
*	# <i>Hypericum androsaemum</i>	Tutsan
*	<i>Ilex aquifolium</i>	Holly
	<i>Impatiens glandulifera</i>	Himalayan Balsam
*	# <i>Iris foetidissima</i>	Stinking Iris (one plant)
	<i>Iris pseudacorus</i>	Yellow Flag Iris
	<i>Juncus effusus</i>	Soft Rush
	<i>Juncus inflexus</i>	Hard Rush
	<i>Lonicera periclymenum</i>	Honeysuckle
	<i>Narcissus</i> sp.	Cultivated Daffodils
	<i>Oenanthe crocata</i>	Hemlock Water Dropwort
	<i>Plantago lanceolata</i>	Ribwort Plantain
*	<i>Polytrichum setiferum</i>	Soft Shield-fern
	<i>Primula vulgaris</i>	Primrose
	<i>Prunus x fruticans</i>	Hybrid Blackthorn
	<i>Prunus laurocerasus</i>	Cherry Laurel
	<i>Quercus robur</i>	Pedunculate Oak
	<i>Ranunculus ficaria</i>	Lesser Celandine
	<i>Ranunculus repens</i>	Creeping Buttercup
*	<i>Ribes rubrum</i>	Red Currant (abundant)
*	<i>Rosa agrestis</i>	Field Rose
	<i>Rubus fruticosus</i> agg.	Bramble
	<i>Rubus idaeus</i>	Raspberry
	<i>Rumex acetosa</i>	Sorrel
	<i>Rumex crispus</i>	Curled Dock
	<i>Rumex obtusifolius</i>	Broad-leaved Dock
	<i>Salix x babylonica</i>	Weeping Willow
	<i>Salix cinerea</i>	Grey Willow
	<i>Salix fragilis</i>	Crack Willow
	<i>Sambucus nigra</i>	Elder
	<i>Scrophularia nodosa</i>	Figwort
	<i>Solanum dulcamara</i>	Bittersweet
	<i>Stachys sylvatica</i>	Hedge Woundwort
	<i>Stellaria holostea</i>	Greater Stitchwort
	<i>Taraxacum officinale</i> agg	Dandelion
	<i>Taxus baccata</i>	Yew
	<i>Ulmus procera</i>	English Elm
	<i>Urtica dioica</i>	Stinging Nettle
	<i>Valeriana officinalis</i>	Valerian
	<i>Veronica beccabunga</i>	Brooklime
	<i>Veronica chamaedrys</i>	Germander Speedwell
	<i>Veronica hederifolia</i>	Ivy-leaved Speedwell
*	<i>Veronica montana</i>	Wood Speedwell
*	<i>Viola reichenbachiana</i>	Wood Violet

The following species are restricted to the grassland in the meadow:-

<i>Bellis perennis</i>	Common Daisy
<i>Coronopus squamatus</i>	Swine-cress
<i>Geranium dissectum</i>	Cut-leaved Crane'sbill
<i>Leucanthemum vulgare</i>	Ox-eye Daisy
<i>Plantago major</i>	Rat'stail Plantain
<i>Poa annua</i>	Annual Meadow-grass

*Polygonum aviculare*  
*Prunella vulgaris*  
*Trifolium pratense*  
*Trifolium repens*  
*Veronica filiformis*  
*Veronica serpyllifolia*

Common Knotgrass  
Self-heal  
Red Clover  
Dutch Clover  
Slender Speedwell  
Thyme-leaved Speedwell

#### Bryophytes – Liverworts

*Calypogeia muellerana*  
*Frullania dilatata*  
*Lunularia cruciata*  
*Metzgeria furcata*  
*Microlejeunea ulicina* (on oak)

#### Bryophytes – Mosses

*Atrichum undulatum*  
*Brachythecium rutabulum*  
*Calliergonella cuspidata*  
*Campylopus introflexus* (on dead wood)  
*Dicranoweisia cirrata* (on dead wood)  
*Eurhynchium praelongum*  
*Fissidens adiantoides*  
*Mnium affine*  
*Orthotrichum affine*

#### Lichens

The majority of the following were recorded on oak except where stated.

*Amandinea punctata*  
*Caloplaca obscurella*  
*Candelariella reflexa*  
*Flavoparmelia caperata*  
*Hyperphyscia adglutinata*  
*Hypotrachyna revoluta*  
*Lecanora albella* (on *Salix*)  
*Lecanora chlarotera*  
*Lecidella elaeochroma*  
*Lepraria incana* (On alder)  
*Melanelia subaurifera*  
*Parmelia sulcata*  
*Parmotrema perlatum*  
*Pertusaria amara*  
*Phaeophyscia orbicularis*  
*Phlyctis argena*  
*Physcia adscendens*  
*Physcia aipolia*  
*Physcia tenella*  
*Punctelia ulophylla*  
*Ramalina farinacea*  
*Xanthoria candelaria* agg.  
*Xanthoria parietina*

## Fungi

*Peziza* species present on rotting magazines  
*Stereum hirsutum*

### 4. Conclusions

Sixteen old woodland indicators is quite a reasonable score, and indicates a wood with some evidence of ecological continuity. In order to have real conservation value, that is to be considered as a Site of Nature Conservation Interest or as a local nature reserve, a score of twenty would be required. Certain species such as Wood Sedge, *Carex sylvatica* and *Oxalis acetosella* Wood Sorrel were strangely absent as were any mosses typical of mature woodland. Even *Thuidium tamariscinum* was not found, nor was the very common epiphytic moss *Isothecium myosuroides*. True bluebell seems to be confined to an area above the very wet meadow area, and this is also a little hard to explain. With only four more indicators to find, it seems quite possible that a score of twenty will be achieved with a survey later in the year.

As stated above, no drastic management would be required to improve biodiversity, however it is very important that alien species such as *Prunus laurocerasus* and *Impatiens glandulifera* are controlled and preferably eradicated. Personally, the matter of the garden species such as *Crocus*, *Narcissus* and *Hyacinthoides hispanicus* is virtually a matter of taste. Currently, the degree of regeneration is well within reasonable bounds as is the level of bramble. However both of these need checking carefully. An eye must be kept out for *Rhododendron ponticum* and if found, must be eradicated immediately.

## **Appendix III**

### **Bird Survey Data**

BIRD REPORT / TADBURN MEADOWS								
	1996		1997					
	NOV	DEC	JAN	FEB	MAR	APR	MAY	SEP
KINGFISHER					✓			
GREEN WOODPECKER		✓	Heard			Heard		
GREAT SPOTTED WOODPECKER	✓		✓	✓			✓Pair	✓
GREY WAGTAIL	✓	✓						✓
PIED WAGTAIL						✓		
DUNNOCK		✓						
FIELDFARE		✓						
SONG THRUSH		✓	✓		✓	✓		
REDWING		✓	✓	✓30+	✓			
MISTLE THRUSH	✓	✓	Heard			✓		
BLACK CAP						✓	✓	
CHIFF CHAFF						✓3	✓	✓
WILLOW WARBLER						✓	✓	
GOLD CREST	✓							
LONG TAILED TIT					✓		✓	
TREE CREEPER	✓	✓		✓				
JAY				✓				
BRAMBLING					✓F			
SISKIN	✓	✓		✓10	✓20			✓F
REDPOLL	✓	✓						
BULLFINCH				✓	✓		✓	
REED BUNTING		✓F						
GOLD FINCH	✓	✓	✓	✓	✓	✓	✓	✓
GREEN FINCH				✓	✓	✓	✓	✓
SNIFE		✓						

Birds seen all year round:- Blue tits, Wren, Robin, Blackbird, Rooks, Magpies, Starlings, Chaffinches, Mallard, Wood Pigeon, Collard Dove.



## **Appendix IV**

### **Butterfly Survey Data**

Species seen at Tadburn Meadows LNR

1. Large Skipper
2. Large White
3. Small White
4. Green- veined White
5. Orange Tip
6. Small Copper
7. Small Blue
8. Common Blue
9. Holly Blue
10. Red Admiral
11. Painted Lady
12. Small Tortoiseshell
13. Peacock
14. Comma
15. Specklewood
16. Gatekeeper
17. Meadow Brown
18. Ringlet

**Appendix V**

**INVERTEBRATE SURVEY OF  
TADBURN LAKE  
SOUTH HAMPSHIRE, 2008**



*Araneus marmoreus* var. *pyramidatus*

**Dr. Jonty Denton FRES FLS MIEEM**

**September 2008**

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## 1. INTRODUCTION

The survey brief was to carry out a baseline invertebrate survey of the reserve woodlands, meadows stream and ponds.

## 2. METHODS AND SITE VISITS

It is impracticable to survey all the potential invertebrates, so specific groups of species, which are sufficiently well known as to provide meaningful comparisons to be made with other sites both locally and nationally. These species are also important as indicators of the quality of the site and the habitats present were targeted (see Brooks, 1993). This survey focused on the Nationally reviewed invertebrate groups, which have had status classifications assigned to each species based on the current and historic distributions (Ball, 1994). These include:- Mollusca (Slugs and snails), Arachnida (Spiders, Harvestmen & Pseudoscorpions), Isopoda (Woodlice), Thysanura (Bristletails), Ephemeroptera (Mayflies), Odonata (Dragon & Damselflies), Plecoptera (Stoneflies), Orthoptera (Grasshoppers & Crickets), Dictyoptera (Cockroaches) Dermaptera (Earwigs), Hemiptera- Heteroptera (True-bugs), Hemiptera - Homoptera (Hoppers), Psocoptera (Psocids), Neuroptera (Lace-wings), Mecoptera (Scorpion-flies), Lepidoptera (Butterflies & Moths), Trichoptera (Caddis flies), Diptera (True flies), Aculeate Hymenoptera (Ants, Bees & Wasps), Hymenoptera Symphyta (Sawflies), Coleoptera (Beetles). In addition some species from other less well known groups which have yet to have official statuses assigned to them were identified. These included, Parasitic Hymenoptera,

The main emphasis of the survey was to find as many rare and notable species as possible, within the reviewed groups.

The site was visited on the 26<sup>th</sup> March, 2<sup>nd</sup> May, 2<sup>nd</sup>, 5<sup>th</sup>, June, 1<sup>st</sup> July, 18<sup>th</sup> September 2008.

### Terrestrial/ Arboreal Survey

All the terrestrial and arboreal habitat types present across the survey areas were sampled, using a variety of sampling methods. The methods employed included standard techniques of sweeping grasses, rushes, sedges, herbs and foliage, beating the foliage, and branches of trees and bushes, especially blossom bearing plants such as Hawthorn, Sloe over a beating tray (Kirby, 1992). Dead wood was examined by hand and bark removed to reveal bark dwelling (corticulous) species. Similarly leaves attacked by leaf mining caterpillars were removed and the occupants reared out in rearing jars and boxes..

A petrol powered suction sampler was employed to collect terrestrial invertebrates. Surface vegetation, tussocks, and ground litter were sampled and each collection emptied onto a large beating tray, where specimens of interest could be collected. The remainder could then be released unharmed.

## 3. STATUS CATEGORIES FOR RARE AND UNCOMMON TAXA

### Nationally Scarce Category A - Notable A (Na)

#### **Definition.**

Taxa which do not fall within **RDB** categories but which are none-the-less uncommon in Great Britain and are thought to occur in 30 or fewer 10 km squares of the National Grid or, for less well recorded groups, within seven or fewer vice-counties.

### Nationally Scarce Category B - Notable B (Nb)

#### **Definition.**

Taxa which do not fall within **RDB** categories but which are none-the-less uncommon in Great Britain and are thought to occur in between 31 and 100 10 km squares of the National Grid or, for less well recorded groups, within eight and twenty vice-counties.

## RESULTS

The species recorded are listed in Appendix 1 (xls attachment). The rare and Nationally Scarce Taxa are listed below:-

Nationally Scarce taxa

### **ARANEAE (Spiders)**

*Nigma puella* (Nationally Scarce A)

**A small distinctive spider found on bushes and hedgerows. Very Local nationally with strongholds in Essex and South Hampshire.**



### ***Philodromus albidus* (Nationally Scarce B)**

A small pale crab like spider which lives on the foliage of trees. It is widespread and frequent in Southern England, and no longer deserving of Notable status.

### ***Zilla diodia* (Nationally Scarce B)**

An orb weaver which lives in open woodland and glades. Local and restricted to Southern England and Wales.

## HYMENOPTERA

Formicidae

### ***Lasius brunneus* (Nationally Scarce A) Bicolored Tree ant**

A two coloured ant which lives on trees both living and dead nesting in cavities in the trunks and branches. This is perhaps the most remarkable record from the site. The distribution of this ant is well known and it has long been a puzzle why it is absent from seemingly suitable areas such as the New Forest. Although it is frequent in NE Hampshire, this appears to be the first record from South Hampshire and the first from the south coast of England. Workers were found on several trees alongside the stream adjacent to the football pitch.



Apidae: Melittinae

*Macropis europaea* – Yellow Loosestrife Bee (Nationally Scarce A)

**A medium sized black bee, which forages on the flowers of yellow loosestrife, nesting in soil on banks and slopes. Very local in southern England.**

LEPIDOPTERA

Dentated Pug *Anticollax sparsata* (Geometridae) (Nationally Scarce A)

**A small pug which develops on Yellow Loosestrife. Very local in Hampshire but listed as being fairly common in Chandlers Ford in 1999 ( Goater & Norris, 2001)**

COLEOPTERA (Beetles)

Nitidulidae

*Epuraea distincta* (Notable A)

**A small yellowish nitidulid beetle with a distinctive dark pattern on it's wing cases. It feeds on soft bracket fungi *Daedaleopsis confragosa* on willows in bogs, fens and carr. It is very local occurring in Southern England and Wales. It occurs in fen sites a few miles to the south in North Hampshire, but according to Hyman & Parsons (1994) there are no previous Berkshire records.**



Melandryidae

*Abdera flexuosa* (Notable B)

A distinctive orange marked false darkling beetle which develops in the bracket fungi *Inonotus radiatus* on alder and willow. Thinly scattered over much of Britain, but very scarce in the South-east.

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Curculionidae

*Acalyptus carpini* (Notable B)

**A distinctive weevil covered in golden hairs. Feeds on sallows. This is very local in Hampshire becoming more frequent in the west.**

## ECOLOGICAL ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

### WOODLANDS

#### Woodland edge habitats

**Important species were found on the older sallows. The nationally Scarce Nitidulid beetle *Epuraea distincta* is associated with fungus which develops on moribund branches on older sallows. Allowing some trees to fall apart naturally will help, so coppicing trees in this condition could be counterproductive.**

**The south facing woodland edges supported scarce species including the spider *Nigma puella*, and the sallow feeding weevil *Acalyptus carpini* was found on the sallows exposed to sunshine.**

### MEADOWS

**The wet meadow areas are very rich for invertebrates cutting back marginal trees to extend these areas should continue. Leaving strips uncut each year as lifeboat areas for inverts is recommended. Wholesale mowing is deleterious for many species which cannot complete their life cycles. Key species include two which feed on Yellow Loosestrife (Dentated Pug and the bee *Macropis europaea*). Although not nationally Scarce the spider *Aranaeus marmoreus* is very localised in fen like areas.**

### AQUATIC HABITATS

#### Pools and carr

**The recent wet years have produced very high water tables, which give the impression that the site is generally wetter than it may have been in previous 'normal' years. This may explain why the water beetle fauna in particular is so limited. Maintaining higher water levels in the fen areas may improve diversity.**

**The sedge fen areas could be enhanced by selective removal /coppicing of trees to improve light levels. This should be done on rotation.**

**Continued control of Himalayan balsam is essential.**

#### Stream

**The stream supported a rather disappointing assemblage, pollution in the past may have reduced diversity, but the fish population seems healthy.**

## REFERENCES

**Ball, S.G. & Morris, M.G. 2000. Provisional atlas of British Hoverflies (Diptera, Syrphidae). Huntingdon, BRC.**

**Goater, B, & Norriss, T. 2001. *Moths of Hampshire and the Isle of Wight*. Pisces.**

**Harvey, P.R., Nellist, D.R. & Telfer, M.G. (eds) 2002. Provisional Atlas of British Spiders (Arachnida, Araneae) Volumes 1 & 2. Huntingdon: BRC.**

**Hyman, P.S & Parsons, M.S. 1992. *A review of the scarce and threatened Coleoptera of Great Britain*. Part 1. JNCC, Peterborough.**

**Kirby, P. 1992. A review of the scarce and threatened Hemiptera of Great Britain. Peterborough, JNCC.**

**Merrit, P. 1990. A review of the Nationally Notable Spiders of Great Britain. Peterborough, NCC.**



**Appendix VI**

**Tadburn Meadows  
Photographs**



Meadows in summer time



Main pathway through the site