

# **PORTCHESTER COMMON SSSI**

## **PORTSDOWN HILL**



**MANAGEMENT PLAN 2023 - 2027**

## Contents

<b>0.1 Preamble</b>	<b>4</b>
<b>0.2 Summary</b>	<b>4</b>

## DESCRIPTION

### 1.1 General information p 5 - 7

- 1.1.1 Location
- 1.1.2 Tenure
- 1.1.3 Management Infrastructure
- 1.1.4 Compartments

### 1.2 Environmental Information p 7 - 22

- 1.2.1 Physical
  - 1.2.1.1 Climate
  - 1.2.1.2 Geology
  - 1.2.1.3 Soil
- 1.2.2 Biological
  - 1.2.2.1 Flora
  - 1.2.2.2 Fauna
    - 1.2.2.2.1 Invertebrates
    - 1.2.2.2.2 Vertebrates
  - 1.2.2.3 Communities
- 1.2.3 Cultural
  - 1.2.3.1 Archaeology/past land use
  - 1.2.3.2 Past Conservation management
- 1.2.4 Environmental relationships which may have implications for management
  - 1.2.4.1 General considerations of calcareous grassland
  - 1.2.4.2 Coarse grassland
    - 1.2.4.2.1 Grazing - summary of ecological considerations
  - 1.2.4.3 Scrub
    - 1.2.4.3.1 Hedges
  - 1.2.4.5 Species considerations

### 1.3 Bibliography p 23

## PART 2 EVALUATION AND OBJECTIVES 25

### 2.1 Evaluation of features p 25 -28

- 2.1.1 Evaluation
  - 2.1.1.1 Size
  - 2.1.1.2 Diversity

- 2.1.1.3 Potential
- 2.1.1.4 Intrinsic value
- 2.1.3 Summary of Important Features
- 2.1.4 Long-term /Ideal Management Objectives

## **2.2 Factors influencing the achievement of long-term management objectives p 28 - 36**

- 2.2.1 Owners objectives
- 2.2.2 Internal natural factor
- 2.2.3 Internal human-induced factors
- 2.2.4 Legislation and Obligations
- 2.2.5 Resources
- 2.2.6 Summary of factors influencing the achievement of long-term objectives

## **2.3 Operational Objectives p 36-39**

- 2.3.1 Rationale and Operational Objectives
- 2.3.2 Objective 1 & 2
- 2.3.3 Objective 3
- 2.3.4 Objective 4
- 2.3.5 Project Records & Review

## **PART 3 PROJECT RECORDS & REVIEW 40**

### **Appendices 42**

1. HBIC Flora list 2010 p 43-46
2. Insect / Moth Survey Results 2018 p 47 -62
3. Butterfly Survey Results 2016 - 2018 p 63

## **0.1 Preamble**

This management plan has been drawn up by the Fareham Borough Council Countryside Service. The plan's format is that of the Countryside Management System and follows the Management Planning Handbook, Alexander, (1993).

## **0.2 Summary**

Portchester Common is part of the greater Portsdown Hill SSSI which forms a rich chalk grassland flora. There is also a mosaic of scrub and coarse vegetation. The site was grazed until the 1950s and was until this time dominated by short grassland. The site remained unmanaged until the early 1990s, during which time scrub and coarse vegetation covered much of the site.

The site's remaining areas of species-rich calcareous grassland habitat gives it a high conservation, amenity and educational value, especially as it borders a large centre of population. Habitat management (scrub clearance and the reintroduction of grazing) prescribed when this plan was first drawn up has reduced scrub cover and increased the diversity of the grassland.

To maintain public enjoyment of Portchester Common and safeguard the site's ecological value continued intensive downland restoration work has been undertaken with the implementation of a sustainable management system based on the experience of the first ten years of management.

The most appropriate management is to introduce hedging where appropriate, gap-up existing hedge lines and continue a winter grazing programme and scrub removal/control. Prolonged grazing pressure was responsible for the site's ecological interest and offers the most effective way of retaining it. In addition, the landowners and relevant conservation bodies also endorse it.

The plan's main objective is to maintain all habitats currently present whilst introducing management that will increase the proportion of species-rich calcareous grassland at the expense of scrub and coarse grassland. Localised surveys and management will protect notable species. Public enjoyment and appreciation of the site is essential to conserve its wildlife in the long term.

## DESCRIPTION

### 1.1 General information

This S.S.S.I. is a non-cultivated site on the south-facing escarpment of an east-west chalk anticline. The S.S.S.I. notification, describes a rich chalk grassland flora which supports a diverse insect fauna, despite extensive scrub and a *Bromopsis erectus* (upright brome) dominated grassland. Since the last notification, 1984, the site deteriorated for a decade. Since then, management has been gradually been reintroduced so scrub comprises approximately 40% of the site and species-rich grassland dominates.

<b>S.S.S.I Information Summary</b>		
<b>Site:</b> Portsdown Hill inc Portchester Common,	<b>County:</b> Hampshire	<b>Local authorities:</b> Portsmouth City Council & Fareham Borough Council.
<b>Status:</b> S.S.S.I. - Scheduled 1978. Revised 1984	<b>OS Grid. Ref:</b> SU 618068 in west to SU 666064 in east.	<b>OS Sheets:</b> 1:50,000 - 196, Explorer -119, 1:10,000 - SU60NE & SU60NW
<b>Soil Survey:</b> Soils of South East England No 6 (1:250000)	<b>Geological survey:</b> Fareham No 316 (1:63,360)	<b>Photographic cover:</b> Map library University of Portsmouth, Portsdown Hill Countryside Service
<b>Site managers:</b> Compartments 1-10 Richard Jones	<b>Address:</b> <b>Portsdown Hill Countryside Service, Fort Widley, Portsdown Hill Road, Portsmouth. PO6 3LS 023 9238 9623</b>	<b>Owners:</b> Portsmouth City Council; Fareham Borough Council; MoD.
		<b>Total area:</b> 80.67 ha
Compartment 11 Mark Trigwell	<b>Fareham Countryside Service  Fareham Borough Council Civic Offices Fareham PO16 7AZ 01329 236100</b>	<b>Plan Revision by:</b> Mark Trigwell 2023
	<b>Holding number:</b> Portsdown 15/130/8000 Fareham 15/128/8002	<b>Last updated:</b> July 2023

### **1.1.1 Location**

The site lies immediately north of Portsmouth, Hampshire. It is an urban fringe site and clearly marks the boundary between town and country. Portsdown Hill Road (B2177) and James Callaghan Drive border the north of the S.S.S.I. The most westerly area of the site, Portchester Common - compartment 11, is separated from the road by a narrow strip of arable land and has vehicular access at only one point which is along Skew Road. Most of the south of the site adjoins the M27, housing and associated access roads and foot bridges.

### **1.1.2 Tenure**

*This is not a legal document.*

Compartments 1,2,3 and part of 4 are owned by the MoD and leased to Portsmouth City Council (PCC) as public open space. Compartments 4 (part) and 5-10 are owned by PCC. Compartment 11 is owned by Fareham Borough Council and is Common Land.

### **1.1.2 Management Infrastructure**

Management of compartments 1-10 is implemented by the Portsdown Hill Countryside Service (PHCS), which is based at Fort Widley. The PHCS has a single employee (Portsdown Hill Countryside Officer) and is part of Portsmouth City Council's Parks Department. A public consultation group meets every 12 months. Practical management of the site is carried out by the Portsdown Hill Countryside Officer, contractors, volunteers and various community groups. Most of the volunteer work is done by the Portsdown Hill Conservation Volunteers who meet weekly and one weekend a month. Certain legal and administrative functions are carried out by other departments within Portsmouth City Council.

Compartment 11, often referred to as Portchester Common, is managed by Fareham Countryside Service (FCS). Here practical tasks are frequently undertaken by the Fareham Conservation Volunteers (FCV) and some aspects of the management carried out collaboratively between PHCS and FCS with regard to grazing stock.

A path (stoned in part) runs the length of the site with many minor paths that appear to be relics of livestock paths and other historic routes. There are no intact buildings, although there are the remains of wartime structures.

Gas, water, telephone and electricity companies have mains/cables with wayleaves crossing the site. Some of these are substantial and need to be considered when carrying out constructive works. Utility firms have required access to their plant with the potential cause damage and impinge on site management.

### **1.1.3 Compartments**

Due to its linear shape, (approximately 200 m x 4.5 km) the site has been divided into compartments. The 11 compartments range in size from 3-12 ha and where possible have boundaries that reflect topographical features. Portchester Common, is 5.71 ha. and is compartment 11 historically.

## **1.2 Environmental Information**

### **1.2.1 Physical**

#### **1.2.1.1 Climate**

There are few weather readings available from the site. The nearest meteorological recording station is on Southsea Common, 7 km to the south. The highest monthly average temperature occurs in July and August (approximately 20.5°C). The lowest monthly average is in January and February, (approximately 5.0°C).

Portsmouth Hill S.S.S.I. is a warm site in an area that enjoys warmer weather than much of the country. Winter temperatures remain higher than inland sites due to the proximity of the sea and large urban area. Its south facing slopes are protected from cold northerly winds and therefore are noticeably warmer than the surrounding area during cold weather. Shelter from wind is easily found within the scrub whatever the wind direction.

Extremely high summer temperatures occur due to the southerly aspect and the shelter provided by scrub. The average annual rainfall is 800mm, which is 100mm higher than the coast.

#### **1.2.1.2 Geology**

Portsmouth Hill is the product of an anticline in Upper Cretaceous chalk (84 to 90 million years old). It is considered an out-lier of the South Downs. The chalk forms a continuous stratum that outcrops to the north to form the South Downs and to the south where it forms chalk cliffs on the Isle of Wight. A borehole found the chalk to be 400 metres thick.

The highest point of Portsmouth's ridge is 120 metres above sea level. Within the S.S.S.I. the height ranges from 50 to 110 metres. The average slope gradient is approximately 1:4.

### 1.2.1.3 Soil

The soil classification of England and Wales (Avery, 1980) place the soils of Portsdown Hill within the Upton 1 series where they are described as a 'chalky grey rendzina' with some loessial silt. An average soil pH of 7.83 has been recorded. The soil becomes more clayey at the base of the escarpment where the depth reaches 30 cm due to Coombe deposits. Higher up the slope the soil forms a layer less than 3 cm over considerable areas. There is a considerable variation in soil depth over short distances *i.e.* less than a metre. These variations are caused by historic disturbance such as the construction of defensive structures, trackways and turf stripping.

### 1.2.2 Biological

The warmer conditions encourage plants and invertebrates that are at the northern extent of their range and thus uncommon in the rest of Britain. The site's accessibility and proximity to large centres of population has meant the hill has attracted many naturalists over the years. Many biological records exist. The process of putting the available information on to a computerised database is ongoing.

#### 1.2.2.1 Flora

The vascular plant species-list exceeds 200 across the whole site with 86 of those appearing within Portchester Common (see Appendix 1).

Of the 27 plants recognised as key species, only *Thesium* is considered as nationally rare. Plants, which have been recorded in the past but are no longer found, include *Coeloglossum viride* (Frog Orchid), and *Campanula glomerata* (Clustered Bellflower),

The site is also known to be of interest for its lower plants including the lichens *Catapyrenium lachneum*, *Toninia coeruleonigricans* and *Leptogium schraderi* and bryophytes including *Ditricum flexicaule*.

#### 1.2.2.2 Fauna

##### 1.2.2.2.1 Invertebrates

Much of Portsdown's scientific interest stems from its invertebrate community. The diversity of food plants and microclimate supports a considerable range of invertebrates. Appleton *et.al.* (1975), produced the most complete record of Lepidoptera, Hymenoptera and Orthoptera. The findings of more recent workers are



less detailed; however, it appears that a diverse invertebrate community remains. See Appendix 2.

### Lepidoptera

414 species recorded

There are healthy populations of *Lysandra coridon* (Chalkhill Blue) as well as many of the commoner butterflies. *Aricia agestis* (Brown Argus) and *Argynnis aglaia* (Dark Green Fritillary) have recently been seen after an absence of several years. Two moth species, *Cynaeda dentalis* and *Hyopchalcia ahenella* have their only known Hampshire locations on Portsdown Hill but have not been seen for several years. Two butterfly transects are carried out on Portsdown Hill and two on Portchester Common. In 2017 23 of the 52 UK native species of butterfly were recorded. See Appendix 3.

Other species e.g., *Plebejus argus* (Silver Studded Blue) and *Lysandra bellargus* (Adonis Blue) have disappeared from the site in the twenty years after WWII.

### Hymenoptera

51 species recorded

There is a rich bee and wasp fauna associated with the hill. The sun warmed sparsely vegetated banks are ideal habitat for many species that have life cycles with an underground larval stage. Notable species include *Mutilla europaea* and *Mellitta tricincta*. The rare Blue Carpenter Bee *Ceratina cyanea* is also present.

### Orthoptera

9 species recorded

Grasshoppers and crickets are well represented. There is a large population of *Tettigonia viridissima* (Great Green Bush Cricket) and *Conocephalus discolor* (Long-winged Conehead).

### Diptera

22 species recorded

Notable species are *Asilus crabroniformis* Hornet Robber fly, *Machizus rusticus*, *Eudorylas horridus*, *Cistogaster globosa*.

## Coleoptera

232 species recorded

Notable species are *Odonteus armiger*

## Arenea

110 species recorded

Notable species include *Atypus affinis* (Purse web spider) and a large colony of *Argiope bruennichi*, a large colourful spider with a limited distribution.

### 1.2.2.2 Vertebrates

#### Birds

Many birds can be seen on the hill as it provides a variety of habitats, food and shelter. The scrub is ideal habitat for warblers such as *Phylloscopus collybita* chiffchaff and (*Phylloscopus trochilus*) willow warbler. Also breeding on the site are *Sylvia communis* (Whitethroat), *Sylvia curruca* (Lesser Whitethroat). Other scrub nesting birds include *Saxicola torquata* (stonechat) and *Emberiza citrinella* (yellowhammer). *Alauda arvensis* (skylark) and *Anthus pratensis* (meadow pipit), nest in the open grassy areas. The abundant hawthorn and ivy berries provide winter food. The hill's value is increased for birds as it is on a migratory route for many species which includes the redwing and waxwing.

#### Reptiles

The site supports large populations of *Anguis fragilis* (slow worm) and *Lacerta vivipara* (common lizard).

#### Mammals

A small mammal survey carried out in 2017/18 on Portchester Common (see Appendix 4), revealed healthy populations of *Apodemus sylvaticus* (Wood mouse), *Microtus agrestis* (Field vole), and *Sorex araneus* (Common Shrew). *Oryctolagus cuniculus* (rabbits) are common on the site. There is at least one badger set that appears to be active. *Mustela erminea* and *M.nivalis* (stoats and weasels) are often seen.

### 1.2.2.3 Communities

Any description of communities should acknowledge the fact that they merge into each other and are difficult to separate. Any account loses accuracy as the community boundaries change.

Most of the scrub clearance that has occurred since restoration work began on Portchester Common in 2013. There is, therefore a large area of grassland that is being re-colonised by vegetation.

NVC surveys carried out in 2000 and 2010, Norton (2000), Wilson (2010) describe species rich chalk grassland, CG3a. The later survey describes evidence of substantial scrub reduction.

All surveys describe or map extensive areas of scrub and Portchester Common was identified as W21d (HBIC 2010), Most of the scrub has few ground-layer plants associated with it.

Currently dense scrub covers about 30% of the site. The grassland is not entirely free of scrub species. Small scrub plants occur in most 2 m<sup>2</sup> quadrats of apparently homogenous grassland. The scrub is predominantly *Crataegus monogyna* (Hawthorn), *Prunus spinosa* (Blackthorn), *Thelycrania sanguinea* (Dogwood), *Ligustrum vulgare* (Privet), *Ulex europeaus* (Gorse), *Clematis vitalba* (Clematis) and *Rubus fruticosus* (Bramble).

Below is a brief description of the vegetation recorded in Portchester Common and some of the uncommon or ecologically important species that occur. Substantial scrub clearance has since occurred in all compartments, and this has promoted tall regrowth of scrambling invasive plants, ruderal species and the re-establishment of downland species *e.g.* *Anthyllis vulneraria* (Kidney Vetch). The state of the scrub regrowth will depend on the level of subsequent management.

Portchester Common - *Bromopsis erectus* (upright brome) grassland with less scrub, (approximately 30%) than other compartments within the Portsdown complex. It has a rich flora associated with it. Notable species associated with the compartment are *Gymnadenia conopsea* (fragrant orchid) and *Acinos arvensis* (basil thyme). The numerous paths and localised disturbances make the vegetation rather diverse. Scrub is densest in the southeast corner.

### 1.2.3 Cultural

The scientific interest of Portsdown is largely due to centuries of interaction of people with the environment. Agriculture, chalk extraction and military construction have all left their mark.

### **1.2.3.1 Archaeology/past land use**

As part of the process of producing an application for Environmental Stewardship a Historic Environmental Record was produced. This lists the recorded finds and outlines the significant archaeological features of Portsdown Hill.

As with many hill sites on Southern England's chalk, Portsdown has been a site of human occupation from prehistoric times. Neolithic, Bronze Age, Iron Age and Saxon burial sites have been found within the S.S.S.I. (Corney, 1967) and elsewhere on the hill, (Rudkin, 1989). The hill forms an important defensive barrier for Portsmouth and so has strategic military importance. During Roman, Saxon and Norman times inhabitants must have taken account of this fact and so it is likely that Portsdown has been under constant human influence for many centuries. However, there are no archaeological or historical remains associated with Portchester Common.

In addition to military exercises and disturbances during the world wars, the hill has been used for leisure purposes. Picnicking and tobogganing are well recorded and large fairs were held on part of the site until the early 20<sup>th</sup> century. Although there is some evidence of historic occupation on Portsdown, much archaeological evidence was lost during the building of five brick hill forts during the 1860's. The Victorian forts, which dominate the skyline today were obsolete soon after being built. The disturbance that occurred when building the forts and constructing wartime defences has left, in places, a varied soil profile and surface layer.

The most important land use was that of grazing. Tithe maps of 1839 describe the hill as pasture with arable land to the north and south. Paintings and various accounts, e.g., Cobbett, (1830) describe sheep grazing on open grassland. The effect of grazing is discussed in section 1.2.4.

### **1.2.3.2 Past Conservation management**

Conservation management of Portsdown Hill S.S.S.I began in 1991 with the formation of the Portsdown Hill Countryside Management Project, which became the Portsdown Hill Countryside Service in 1997. In the first few years, a small amount of scrub clearance was carried out.

The first five-year management plan was written in 1994 (Jones, 1994) and identified the following long term objectives:

1. To maintain existing habitats and associated fauna and flora.
2. To improve, maintain and increase (to 70%) the area of species-rich calcareous grassland.

3. Safeguard all notable species.
4. To provide for public access and educational use of the site and to enhance public awareness and appreciation of downland habitat, except where it compromises objectives 1, 2 and 3.

The most significant result of the plan was the application and implementation of a programme of scrub clearance and grazing supported by a 10 year Countryside Stewardship application. This finished in 2005. An earlier, defaulted, stewardship scheme application, for compartment 11 was reinstated to complete the necessary work there.

A second five-year management plan retained the long-term objectives. During this time the fencing was completed and grazing introduced to whole site. This has led to much shorter sward. A more extensive scrub clearance programme was carried out with the aim of reducing the scrub cover to no more than 30% in each compartment and managing 70% of the site in a way to produce or maintain species-rich calcareous grassland.

The third 5 year plan saw the end of the major scrub clearance phase and the onset of maintenance as opposed to restoration. Much of the grassland is short through grazing and mowing.

## **1.2.4 Environmental relationships which may have implications for management**

### **1.2.4.1 Coarse grassland**

Most of the coarse grassland on the site can be described as NVC community CG3 (Rodwell, 1992). The dominant grass, *Bromopsis erectus* (upright brome) produces a bulky, resistant leaf litter and grows outwards from tussocks. As the expanding tussocks join, the grass dominates the sward, (Austin, 1968a).

*Bromopsis* dominated grassland, (CG3) is seen as a successional stage of *Festuca-Avenula* species-rich grassland, (CG2). CG2 will develop into CG3 in the absence of grazing. It is generally agreed that this is reversible.

The abundance of scrub on Portsdown suggests that bushes invade the coarse grassland, however this may be slowed by a large population of *Microtus agrestis* (Field Vole) that eat the bark of developing scrub, (Smith 1980). The thatch of dead litter in *Bromopsis erectus* (upright brome) grassland provides ideal habitat for the voles. The leaf litter may also inhibit scrub colonisation.

Tall grassland communities have a lower botanical diversity than the short downland communities they replace. However, they do add to the overall habitat range. For instance they provide larval food for species like *Melanargia galathea* (marbled white butterfly) and over-wintering sites for many invertebrates. Tall grassland also

provides shelter and food for small mammals, which in turn supports a range of predators. If a full complement of downland wildlife is to be retained, the site should be managed to retain some tall grass in order to add structural diversity to the site.

Management techniques for increasing the diversity and reducing the vigour of coarse grassland on chalk are mowing and grazing.

### Mowing

Mowing can be an effective means of removing the choking layer of dead leaf litter and reducing the vigour of dominant species, especially *Bromopsis erectus*. The results of mowing depend on the timing and intensity of the operation. Cutting large areas on a particular day will have a disproportionate effect on those species that happen to be at a vulnerable stage of their life cycle when the grass is cut. Mowing can create a uniform sward that limits the diversity of insect and plant communities; therefore, the timing of cutting must be carefully regulated, so that a constancy of habitat is maintained.

The aim is to have a suppressive effect on the *Bromopsis erectus*. Wells (1971) recommends mowing the first growth of the year to deplete the plant's energy reserves. Most research recommends that conservation mowing is carried out in autumn after seed is set (Crofts and Jefferson, 1999).

As a short-term measure mowing is a useful management technique that can retain the short-turf species and prevent invading scrub from becoming established. To be effective in producing soil impoverishment and a variable sward height, mowing must be carried out in a controlled pattern. The benefits of mowing can be further increased by harrowing to break up the dense *Bromopsis* sward. Breaking up the sward is necessary to produce gaps for the seeds of downland plants to germinate.

In order to increase the diversity of the grassland it is essential that the cut grass is removed to prevent shading and soil eutrophication - in effect, a form of cut and collect or haymaking is necessary.

### Grazing

From an ecological standpoint, grazing is the most effective management tool. It was continuous grazing that produced downland and maintained it for hundreds of years. The response of grassland to grazing centres on what is eaten (defoliation), where the livestock walk (trampling) and what they leave behind (manuring). These factors vary in their effect according to the timing, intensity and duration of grazing and the type of grazing animal.

### Grazing - defoliation

The herbage that livestock choose to eat affects botanical composition. Some plants flourish in grazed grassland because they are tolerant of, or resistant to herbivory. Tolerant species such as plantains (*Plantago*) have growing points close to the ground while other species simply grow quickly and produce many seeds. Plants that are resistant to grazing are often unpalatable e.g. *Thymus* (thyme), poisonous e.g. *Senecio jacobaea* (ragwort) or are spiny e.g. *Cirsium* (thistles). Plants that are actively selected by grazers and are unable to grow back quickly will eventually be driven from the site.

The nature of the grazing has important implications for the invertebrate fauna. The correct grazing pressure can retain short species-rich turf whilst maintaining areas of tall grass habitat. An uneven sward, with a variety of microhabitats is suitable for a wider range of species. Livestock remove vegetation gradually and so do not have the catastrophic effect on invertebrates, as mowing. Small mammals and reptiles also benefit from a range of vegetation densities.

The timing of any grazing will also affect the grassland's response. Many plant species have flowering periods restricted to only part of the growing season. If grazing animals remove all the flowers then the recruitment of new seedlings will be adversely affected. In plants with long-lived seeds and/or perennial species the loss of a year's seed will not affect the population, however, it may affect any invertebrates that are dependent on the seeds or flowers. *Rhinanthus minor* (Yellow rattle) is an example of an annual plant with short-lived seed that will be reduced by early summer grazing. The grazing preferences of different stock is another important factor.

### Grazing - trampling

Livestock, especially cattle, break up accumulated dead vegetation and create bare ground as they move about the site. A low level of such ground disturbance is beneficial as it stimulates the regeneration of plants from the seed bank. Patches of soil exposed to the sun's warmth are important during the underground larval stage of many invertebrates. Where excessive trampling by heavy livestock occurs, susceptible plants may be lost.

Plants are more sensitive to disturbance when they are actively growing. Therefore, the timing of grazing has important considerations. Heavy grazing at the beginning of the growing season will adversely affect one suite of species whilst leaving other (late growing) species little affected.

### Grazing - manuring

Chalk grassland is a nutrient-poor habitat. Livestock deposit urine and dung and therefore have the potential to raise the nutrient status and thus cause a shift in the

vegetation towards coarse competitive species. Provided that supplementary feeding does not occur and livestock only eat vegetation from the site all they are doing is concentrating some of the nutrients that are already present. When they leave the site they are, in effect, removing nutrients and perpetuating conditions that give rise to downland by reducing soil fertility.

Whilst grazing animals lower the nutrients within a system they can increase the rate at which they are recycled. Nutrients locked up in dead or old vegetation are available for new growth.

The physical removal of dung may speed up the export of nutrients although it should be remembered that there are many invertebrates and fungi that benefit from dung, as do the predators that in turn feed on them. It is important that livestock are not wormed using a prophylactic bolus that administers an Avermectin based compound. This drug persists in the dung and prevents invertebrates from colonising.

With the right grazing pressure, all habitats can be retained and the need for other active management greatly reduced.

### Stocking rates and timing of grazing

From the experience of the first ten years it takes approximately 8 weeks of winter grazing at the stocking rate of 1 horse per ha to remove the annual growth of grass. The time taken to do this is less than it was at the outset of grazing because the dominant grass is now less vigorous and produces less biomass. Also, much of the fodder value associated with the scrub has been eaten and it is unable to regenerate to pre-grazing levels.

A guide to the carrying capacity of calcareous grassland is 0.25 LU/ha/yr, see Crofts and Jefferson (1999). A LU (livestock unit) is 550 kg of animal and is a means of comparing livestock of differing age and species. e.g. 4 adult ewes at 60 kg are equal to a 1 year old beef animal at 240 kg – both equal approximately 0.5 LU, Crofts and Jefferson, (1999).

The livestock that have grazed all compartments have been approximately equivalent to 1 LU, giving a stocking level of 0.16 LU/ha/yr. Agriculturally improved grassland rates are several times higher (2.0 LU/ha/yr) than this, which suggests that the grassland on Portsdown is unproductive. However, it should be remembered that much of the area is covered in scrub and there is little grass regrowth during the winter when the site is grazed.

On dry south-facing slopes like Portsdown Hill, winter grazing with livestock has produced the desired effect of suppressing the *Bromopsis erectus* (upright brome) and opened the sward and allowed other species to grow. Grazing has been restricted to a relatively short time during a time of year when most plants and animals are dormant. Although there is some evidence of poaching on paths there seems to be little trampling damage on the best areas of grassland. Existing areas of



fine downland turf retain their characteristic species *e.g.*, *Thesium humifusum* (bastard toadflax).

From a grassland management perspective, winter grazing at 1 head of livestock per ha is increasing botanical diversity and suppressing *Bromopsis*. Scrub is not controlled by livestock grazing, neither are scrub seedlings that have established themselves in the grassland. In order to control scrub a more elaborate grazing regime is necessary for example grazing during the growing season and the use of scrub-eating livestock such as goats.

### Grazing - choice of livestock

Each livestock species has unique grazing characteristics that will in turn have a distinct effect on the vegetation. The essential characteristics for sheep, cattle, goats and ponies are given below. Differences in breed and age also affect grazing behaviour.

#### Sheep

Sheep are the preferred animal at many sites, (Bacon, 1990, 1993). Their nibbling mouth action is recognised as producing the best (*i.e.* finer) downland turf. They are capable of grazing on steep slopes and cause less soil erosion than larger animals. They are not as susceptible to the toxic effects of ragwort as other livestock and some breeds will eat a certain amount of scrub.

They are selective feeders that tend to take flower spikes but leave grass stems, tussocky grass and dead vegetation. Unpalatable species tend to be avoided. A management consideration of sheep is the threat of dog worrying and likelihood of becoming entangled in brambles.

#### Cattle

Cattle are good at removing coarse grass and feed non-selectively by wrapping their tongue around the vegetation and biting it off. Feeding in this way they have produced a short sward on Portsdown. They are less susceptible than sheep to dog worrying and other problems caused by the close proximity of an urban area. Cattle will push deep into scrub looking for ivy and therefore make subsequent scrub clearance much easier. If droppings are to be removed, they make this procedure much easier by producing cowpats. They can easily cause excessive trampling, especially in wet weather.

#### Goats

Goats graze, strip bark and browse. They will eat a variety of scrub and herbaceous vegetation often concentrating on one vegetation type for a while before turning their attention to something different. From trials with domestic goats on the site and in

Fort Widley as well as with semi-feral goats in Fort Southwick it is clear they are efficient at controlling scrub of any type and grazing off rank grass. There is plenty of scope for their use on the site. Unfortunately like sheep, they are vulnerable to dog worrying.

Goats heft, that is they tend not to stray from a chosen location. On Portsdown they moved barely 200 m from where they first introduced to the site in 3 months. This means they graze and browse a small area thoroughly.

### Horses and ponies

Horses can graze very close to the ground due to their forward pointing incisors and so potentially have a role in managing chalk grassland. On a nearby field a good mixture of downland species is maintained by low level horse grazing.

Low level horse grazing may be an appropriate option provided adequate control is maintained, (Gibson, 1996).

### Grazing - wild grazers

There are roe deer (*Capreolus capreolus*) on the site, but too few to have a noticeable effect on the vegetation. Rabbit grazing has been significant on Portchester Common from the beginning in of the plan period, 1995. The rabbit population has increased considerably in the last ten years to the extent that it has reduced the need for grazing throughout the year.

The potential for rabbits to influence the need for grazing management is considerable and rabbit numbers should be monitored. Over most of the site the rabbits make beneficial contribution to the grazing effort and their presence is welcome. It is significant that the rabbits live within the blocks of scrub. There is the potential to influence rabbit numbers by adjusting the area of scrub.

#### **1.2.4.2 Grazing - summary of ecological considerations**

The effects of grazing depend on when the site is grazed, the stocking rate, and the animals used. This is due to the interaction of the effects of grazing with the life strategies of the different plant species. In principle, if the grazing is not prolonged, intensive and simultaneously applied to the entire site, it will be beneficial. Ongoing defoliation and nutrient removal by grazing animals is the best way promoting a grassland habitat. The choice of livestock and grazing regime should reflect the aim of gradually reducing coarse vegetation without damaging the remaining patches of species-rich grassland.

### 1.2.4.3 Scrub

In the fifty years after WWII the area of scrub across the site increased from 5% to over 65%. In the last ten years it has been reduced to approximately 40%. Bushes and brambles were replacing chalk grassland and most grassland would have gone within a few years if management hadn't occurred. All grassland areas have small, but established scrub plants. Work is ongoing to clear much of this scrub.

Once scrub is established it spreads effectively as it increases the fertility of adjacent soil through leaf and seed fall. Scrub species are deep-rooted and so can draw moisture from deeper in the soil profile than grass and herbs. This means that plant growth and organic accumulation continues, even when drought restricts the growth of herbaceous plants.

Although a threat to calcareous grassland, scrub is also a valuable habitat for many insects and birds. Many species are associated with the scrub edge habitat and downland species benefit from the shelter provided by bushes. Scrub adds value to a site's conservation value. However, the habitat associated with scrub, changes as it grows. If scrub is to be retained on a site there is a case for managing it on a coppice cycle, (Oates, 1990).

As mentioned earlier, rabbits require the shelter scrub for their burrows. If the grazing action of rabbits is to be maintained, scrub will be necessary.

#### Advantages and effects of coppicing scrub:

- it prevents retained scrub from becoming over-mature and degenerate, thus losing most of its conservation value;
- it promotes vigorous regrowth which benefits those butterflies that have scrub species as food-plants;
- it prevents retained scrub areas from maturing and thus producing seeds which lead to colonisation of nearby grassland sites;
- it retains scrub as an impenetrable barrier, which can be desirable in some situations;

Scrub regrowth forms a distinct, if temporary, habitat in its own right and benefits invertebrates such as Bush Crickets. The flowering ruderal plants that occupy some of the cleared ground provide nectar and pollen for a variety of insects. In addition, the taller vegetation offers more shelter from bad weather and opportunities for invertebrates to over winter.

Whilst a programme of long-term scrub coppice may have some advantages it poses the problem of disposal of arisings. Some of the arisings can be used in dead hedging created on the western boundary and much of the rest can be burnt on selected sites outside the main SSSI area.

### Converting scrub back to grassland

Effective scrub clearance is difficult. Most scrub species coppice vigorously when cut and so it should be uprooted, poisoned or repeatedly defoliated in order to kill it - sometimes all three as it often regenerates from severed roots. If it can be removed, it leaves behind an area of enriched soil (laden with scrub seeds) that does not favour re-colonisation by downland species.

The most appropriate method of clearance depends on the structure of the scrub. Individual bushes or discrete scrub blocks surrounded by intact grassland are best felled and removed intact and the stumps treated or extracted. Large expanses of springy thickets are best shredded *in situ* with a tractor-mounted flail.

Inevitably, much of the scrub is a mixture of established shrubs surrounded by a younger halo of privet, clematis and bramble. Therefore, a staged clearance is more appropriate. The mass of tangled, pliable scrub can be cut out of the way revealing the more substantial bushes that can be treated separately. The steepness of the slope and the proximity of extraction point and/or species-rich grassland influence the choice of technique.

Where scrub has been cleared to ground level, the site has been smothered in vigorous bramble-dominated regrowth after a growing season. There will also be opportunistic ruderal species, e.g. groundsel and thistles. However, a small number of downland plants which germinate from the seed bank, e.g. violets do regenerate. To achieve grassland on these areas, regular mowing with clearance and/or grazing is necessary to stunt the scrub species and favour grassland plants. This can take years or even decades. Alternatively, it is possible to use a stump grinder to release and expose the deep root systems which can be removed. This is costly but experience on Portchester Common (compartment 11) has shown it to be effective.

Soil is a complex environment with many interacting living and mineral components. Soil fungi and bacteria are fundamental to the functioning of the soil. Scrub removal that disturbs the soil will have a dramatic effect on microbiological life. As the soil dries out, mycorrhizae will be damaged or killed.

Whilst it is clear scrub cover should be reduced, the previous comments also suggest that some scrub should be retained, monitored and managed. The conservation benefits of scrub can be maintained in a much-reduced area. The greatest biological value of the site is found in chalk grassland.

### **1.2.4.3 Hedges**

Hedges provide shade for stock, protection from the wind and guard against soil erosion. Hedges are an attractive feature and a valuable wildlife habitat. They provide a rich source of food for birds and small mammals. Hedges may also link otherwise isolated wildlife habitats. Once planted, hedgerows require only periodic maintenance to provide a permanent barrier.

In some areas, linear bands of scrub have been cut and laid to form hedges. This technique protects fences from vandalism and adds to diversity to the site. It also provides areas of dense scrub where livestock and people cannot easily trample. Much of the southern perimeter of Portchester Common has been created by the Highways agency from a combination of chain link fencing and wooden frame. It is intended that existing scrub is shaped to form a hedge line where possible and a combination of hawthorn, blackthorn and deadwood is planted to make this boundary a complete line. The western boundary does have some existing hedge line which needs laying and other sections need gapping-up.

#### 1.2.4.4 Species considerations

It is difficult to identify all the environmental requirements of a species. Using *Lysandra coridon* (Chalkhill Blue Butterfly) as an illustrative example, it shows how involved some life cycles are. *Hippocrepis comosa* (horseshoe vetch), which is found to the east of the Common is necessary as a larval food-plant, certain ants belonging to the genus *Lasius* and *Myrmica* protect the larvae, a range of flowers are needed to provide nectar sources for the adults. Sheltered roosting sites in tall vegetation greatly assist its survival. Other controlling factors are predators and pathogens that attack it throughout its life cycle. In addition, the weather has a dramatic effect on the breeding success. A very bad year can wipe out a weak colony. Once insects have failed to breed on a site they need re-colonise from elsewhere. Unlike plants, insects cannot survive adverse conditions as seed.

Management cannot fine-tune the environment to suit a few desirable species. Management has to provide a habitat in which the desired appropriate species can live in association with everything else in an ecosystem. The ecosystem that developed across the site did so under a form of low-intensity livestock based agriculture and the best way of retaining it is to sustain a similar form of management.

For the purposes of illustration, listed below are the important environmental factors associated with several of the key species found on Portchester Common:

*Cupidio minimus* (small blue butterfly) – The Portsdown Hill complex was described as supporting one of the largest colonies in Hampshire. Two consecutive bad years in terms of weather reduced the colonies significantly. Butterfly scrapes within the Common are being established with aim of re-establishing the numbers.

*Odonteus armiger* - Notable A. Listed in a published Red Data Book as category "3" This beetle has larvae that are dependent on rabbit dung. They are restricted to warm grassland.

*Asilus crabroniformis* (hornet robber fly) The fly's larvae are believed to prey on the larvae of large dung beetles and the adult flies feed on a variety of insects, including grasshoppers, dung beetles and flies. As such, it requires suitable grassland sward

to support its prey community. As a dung species, it is thought to be adversely affected by the presence of persistent anti-parasite compounds (ivermectins) in animal dung.

### 1.3 Bibliography

- Alexander, M.** (ed) (1993). *Management Planning Handbook*. Countryside Council for Wales.
- Avery, B.W.** (1980). *Soil classification for England and Wales. Soil Survey Technical monograph No. 14*. Harpenden. Soil classification for England and Wales.
- Brookes, A** (ed). (2000). *Butterflies of the Portsmouth region*. Butterfly conservation.
- Appleton, D., Bryant, M., Dickson, R., Else, G.,** (1975). *The Insects and Plants of Portsdown Hill*. Duplicated and Published by R. Dickson. Available at the PHCS and Portsmouth Museum.
- Bacon, J.C.** (1990). *The use of livestock in calcareous grassland management, Calcareous Grasslands - ecology and management*. Proceedings of a BES /NCC symposium at University of Sheffield, 14-16 September 1987 (ed. S.H. Hillier, D.W.H. Walton and D. W. Wells), pp.121-127. Bluntisham Books, Bluntisham.
- Cobbett, W.** (1830). *Rural Rides*. London: William Cobbett
- Corney, A.** (1967). A prehistoric and Anglo-Saxon burial ground, Portsdown. *Proc. Hants. Field Club and Archaeological Soc.* vol. 24
- Cox, J.** (1987). *England Field Unit Survey of Hampshire Grasslands*. NCC
- Crofts, A. & Jefferson, R.G.** (eds.) (1999). *The Lowland Grassland Management Handbook* 2<sup>nd</sup> edition. English Nature / Wildlife trusts.
- Gibson, C.W.D.** (1996). *The effects of horse grazing on species-rich grasslands*. English Nature Report number 146
- Grime, J.P.** (1990). *Mechanisms promoting floristic diversity in calcareous grasslands*. Calcareous Grasslands - ecology and management. Proceedings of a BES/NCC symposium at University of Sheffield, 14-16 September 1987 (ed. S.H. Hillier, D.W.H. Walton and D. W. Wells), pp.51-56. Bluntisham Books, Bluntisham.
- Hampshire County Council** (2000). *Hampshire Biodiversity Action Plan Lowland Calcareous Grassland - A Habitat Action Plan*.
- Hampshire Biodiversity Information Centre** (2010). SINC Survey
- Kampf, H.** (2000). *The role of large grazing animals in nature conservation - a Dutch perspective*. British Wildlife, 12, 37-46.
- Johnson, C.M.T.** (1985). *A management plan for Portsdown Hill*. MSc dissertation. University College London, London.
- Jones, R.N.** (1994,1999) Management plan for Portsdown Hill SSSI.
- Oates, M.** (1990). *The National Trust Scrub Management handbook, Second Draft*. The National Trust, Cirencester, Gloucestershire.

**Oates, M** (1993). *The Management of Southern Limestone Grasslands*. British Wildlife, 4, 73-82.

**McIntosh, S.** (1997). *Vegetation composition of obsolete pathways with special reference to Portsdown Hill, Hampshire*. Dissertation for HND Wildlife Management Sparsholt College.

**Norton, J** (2000) HCC Chalk Grassland Survey 2000 Description for Portsdown Hill SSSI

**Portsmouth City Council** (1988) *Management plan for Portsdown Hill*.

**Ratcliffe, D. A.** (ed) (1977). *A Nature Conservation Review*. Cambridge University Press.

**Rodwell, J.S.** (ed) (1992). *British Plant Communities Volume 3 Grasslands and montane communities*. C.U.P. Cambridge.

**Rudkin D.J.** (1989). In *The Portsmouth Region* Eds. Stapleton, B. and Thomas, J.H.

**Smith C.J.** (1980). *The Ecology of English Chalk*. London: Academic Press.

**Wells, T.C.E.** (1971). A comparison of the effects of sheep grazing and mechanical cutting on the structure of botanical composition of chalk grassland. In *The Scientific Management of Plant and Animal Communities for Conservation*, (ed. E. Duffey & A.S. Watt,) pp. 497-515 Oxford: Blackwell.

**WILSON, P** (2010) NVC SURVEY AND CONDITION ASSESSMENT OF PORTSDOWN HILL SSSI AND HIGH TOR SINC



## **PART 2 EVALUATION AND OBJECTIVES**

### **2.1 Evaluation of features**

This chapter evaluates the information from the preceding description. It identifies and confirms the important features and finally identifies and allocates the priorities of the site management objectives.

#### **2.1.1 Evaluation**

Several criteria are commonly used when assessing nature reserves and when these are applied to Portsdown Hill and Portchester Common it is clear that they remain valuable sites, despite a considerable decline due to successional change from species-rich grassland to rank grassland and scrub. The conservation value of the site increases when other examples of the same habitat are lost, this is especially true for chalk downland. There has been a dramatic loss and fragmentation of chalk downland during this century (Keymer and Leach, 1990). Nationally, 95% of Britain's chalk grassland has been lost since 1949. Of the 97,069 ha of chalk outcrop that occurs in Hampshire about 2,000 ha is now described as downland. Much of this contains habitats such as woodland or scrub. The loss of chalk grassland is mostly due to agricultural intensification, with tree planting, urbanisation and inappropriate management accounting for the remainder.

The S.S.S.I. is positioned half way along the length of the hill and therefore it has the important role of acting as an ecological corridor for the numerous calcareous grassland fragments to either side of it. As part of the Hampshire Biodiversity Action Plan a habitat plan for lowland calcareous grassland has been prepared (HCC, 2000). In the plan Hampshire's calcareous grasslands are described as one of the most important semi-natural habitats in the county being of key importance for 50 Hampshire priority species.

##### **2.1.1.1 Size**

The importance of a site generally increases with size (Ratcliffe, 1977). Larger sites can maintain larger, more viable populations and provide a wider range of habitats. Portsdown Hill and Portchester Common S.S.S.I. is important because it is one of the largest expanses of semi-natural vegetation on chalk in Hampshire.

### **2.1.1.2 Diversity**

In a survey of Hampshire's grasslands (Cox, 1987) the Portsdown S.S.S.I. was placed in the top-quality class (class 1 out of 5 classes) on account of its diverse flora. Due to the remaining downland patches, there is considerable species diversity. In addition to downland the presence of different seral stages, *i.e.* varied grassland types and scrub increases the range of habitats. Shallow soils on steep inclines tend to retain what short grassland there is.

A maritime element in the flora has been noted by some surveyors. Diversity is one of the most important attributes of high quality sites, and on this criterion Portsdown/Portchester can be considered especially valuable.

### **2.1.1.3 Potential**

There is an enormous potential to improve both the conservation and recreational value of the site. With continued and extended management of the type that has occurred since 1995, this site could support an attractive chalk grassland habitat and still be a treasured site for quiet enjoyment.

A safe, well-managed site would enhance the quality of life for local people and visitors and the landowners could be proud of an attractive and significant landscape feature. Increased legitimate use of the hill would raise appreciation and discourage misuse.

An opportunity exists to provide a valuable educational resource close to a large centre of population. There is considerable scope for environmental education as there is both abundant biodiversity and easily demonstrated ecological processes available.

### **2.1.1.4 Intrinsic value**

The intrinsic value of the site is extremely high as it offers excellent views over Portsmouth, the Solent and Isle of Wight. Chalk grassland supports many attractive species, such as butterflies, and colourful plants. It is the nearest open countryside to the Portsmouth area and if made more accessible, by scrub clearance, the public usage will almost certainly increase. The intrinsic value could be increased if a well-cared for attractive environment is continued to be provided.

### **2.1.3 Summary of Important Features**

#### Vegetation

Short species-rich chalk grassland has a higher ecological and recreational value than the other vegetation types found on the site. The historical precedent is also that of open close-cropped grassland, with very little scrub. Therefore, most of the site should be managed as short species-rich grassland. The beneficial habitat diversification associated with scrub and coarse grassland can be achieved by retaining 30% of the site as a mosaic of these habitats.

Over the last fifty years natural succession has led to the near total replacement of species-rich calcareous grassland with scrub. Scrub cover is currently about 40% and decreasing due to the implementation of an ongoing programme of grazing and scrub control. The cleared scrub produces a low scrub habitat where grasses, herbs and scrub vie for light. If managed by grazing and mowing then herbaceous plants will dominate and the area will become grassland. If left unmanaged the scrub will re-establish itself. Light management produces intermediate vegetation types. It is a dynamic equilibrium.

As more scrub is cleared the need to dedicate time to prevent its re-establishment hinders the site manager's ability to clear more scrub. More intense management pressure is needed to oppose the expansion of scrub and maintain the diversity of the remaining grassland.

#### Species

The remaining fragments of chalk grassland support a rich fauna and flora. In conjunction with other habitats, the Hill and the Common are a reservoir for many uncommon species that were formerly widespread. Several rare insects that are dependant on food plants and other habitat features restricted to chalk grassland retain breeding populations on the site. The long-term retention of these chalk grassland species is dependent on the effective management of the vegetation.

#### Access and recreation

Unrestricted public access on the urban fringe means that arson, vandalism, and rubbish dumping are commonplace. The most effective form of management, grazing, is vulnerable to such problems. There is also the constraint of maintaining access, as the site is an important area for informal recreation. This very important recreational value has to be recognised and accommodated in such a way that it does not have a detrimental effect on the site's ecological value.

### **2.1.4 Long-term /Ideal Management Objectives**

1. To improve boundary hedging and maintain existing habitats and associated fauna and flora.
2. To improve, maintain and increase (to 70%) the area of species-rich calcareous grassland.
3. To safeguard all notable species.
4. To provide for public access and educational use of the site and to enhance public awareness and appreciation of downland habitat, except where it compromises objectives 1, 2 and 3.

## **2.2 Factors influencing the achievement of long term management objectives**

### **2.2.1 Internal natural factors**

Seral succession is the most important factor on the site and much of the relevant information regarding this is given in section 1.2.3. There is direct colonisation of the short grassland by scrub, particularly hawthorn, spindle and bramble. This process is now in reverse. Much of the Common grassland is becoming more diverse under grazing pressure and the bushes are being suppressed by extensive scrub clearance.

Near-continuous management pressure (grazing, with mechanical scrub control) is required to counter the tendency for scrub and rank grass to dominate the vegetation. If management ceases succession will once again lead to the loss of chalk grassland.

### **2.2.2 Internal human-induced factors**

The site has the status of public open space and some areas have many visitors. People radiate out from nearby housing and a significant car parking area at the bottom of the hill. There is a requirement to maintain paths that can be used all year. Legitimate public usage brings the serious problem of accommodating people and their dogs whilst grazing livestock are present. Dogs may worry animals or chase them.

As a public open space, any work on the site has to allow for people who wish to use the Common within the legal limits.

The proximity of housing increases the potential for vandalism and requires that the site be checked regularly, especially when livestock are present. This creates a staffing shortage that is so far only overcome by the efforts and goodwill of staff and volunteers.

As a public access to the site there is a strong need for public awareness of the grazing, scrub removal and other management work. A leaflet drop initiated by PCC from the outset of the grazing programme and on-site signs does seem to have helped reduce public opposition to the work.

Rubbish dumping, litter, some examples of vehicle wrecking and arson are other problems that should be dealt with quickly when they pose a threat to visitors, wildlife or livestock. Most of these problems decrease during the winter. However, these problems are persistent.

## **2.2.3 Legislation and Obligations**

The following legal and non-legal obligations, among others must be considered in carrying out any management operations:

The Health and Safety at Work Act; 1974

Agreements arising from the site's status as a S.S.S.I.

Wildlife and Countryside Act 1981

Occupiers Liability Act

Higher Level Stewardship Agreement (tbc)

Animal welfare and livestock regulations

Countryside and Rights of Way Act 2000

Formal agreements, such as those with English Nature, which require notification regarding potentially damaging operations.

Environmental Protection Act 1990

Waste Management Licensing Regulations 1994

From 2006 a biodiversity duty within the Natural Environment and Rural Communities (NERC) Act 2006 obliges Local Authorities to consider biodiversity in its activities.

Section 40 of the NERC Act 2006 states

**“Every public authority must, in exercising its functions, have regard, as far as is consistent with the proper exercise of these functions, to the purpose of conserving biodiversity”.**

[www.defra.gov.uk/wildlife-countryside/biodiversity/index.htm](http://www.defra.gov.uk/wildlife-countryside/biodiversity/index.htm)

## **2.2.4 Resources**

There is a lot of work to do if the site's ecological interest is to be maintained. It requires:

- the continued restoration and management of boundary hedges,
- the continued management of the chalk downland by substantial scrub maintenance
- follow up management of ongoing grazing to prevent scrub regrowth and to increase the diversity of the remaining grassland.
- further development of grassland habitats suitable to increase lepidoptera species and that of the existing invertebrates and small mammals

Operations likely to achieve all the management objectives will require more resources than are currently available.

Financial assistance for the management of the site for the last five years has been made possible as a result of the Higher Level Stewardship Agreement 2012 - 2023. The achievements during this period are listed below.

## **2.2.5 Higher Level Stewardship Agreement Achievements 2013-17**

### **2.2.5.1 Hedges**

#### Planting

Under the Capital Works measures a selection of hawthorn, blackthorn and privet were planted to plug the gaps on the southern boundary in 2015. The planting regime followed that prescribed within the HLS agreement.

Dead hedges were also incorporated into all boundaries where it was not possible to burn the organic debris created after scrub clearance. This has proved effective where the stock fencing is weak and the existing vegetation cannot be laid. In addition, standard hedge saplings have been planted and correspond with the existing dead hedge support stakes. These saplings will be pruned regularly with a view to provide living stakes and a dense living hedge in the fullness of time.

## Laying

The existing vegetation on the southern boundary was thinned initially and then allowed to grow in height to form suitable pleachers. The hedge laying work commenced in December 2016 and was completed in February 2017. Further hedge laying was started on the northern boundary and is ongoing. The vegetation comprises of dog wood, privet, hawthorn and some blackthorn.

## Cutting

The hedge along the northern boundary had never been cut and under the Capital Works Programme, a contractor was hired to use a tractor and flail arm to cut the top and two sides in the late autumn of 2015. Standard trees which are predominantly hawthorn, were left alone. The height was reduced to 2mtrs as per the specifications laid out in the HLS agreement.

In addition, the parallel hedges on either side of High Tor path a.k.a. the 'butterfly corridor', was cut on the inside faces in 2015 by hand. The top and south

face of the southern hedge was cut in the winter of 2016/17 with a tractor and flail arm and the top and north face of the northern hedge was cut in late 2017.

The remaining north face is to be cut in January/ February 2018. Once again, the standard trees were left in place. The trees include walnut and hawthorn.

The existing hedges referred to above appear not to have been deliberately planted and prior to any work under the current action plan, they lacked density and structure. Moreover, gaps in the base of the northern boundary hedge did not make them stock proof.

## Standard Hedge Trees

All the standard trees are choked with ivy preventing them from fruiting effectively. This is an exposed site and the dense ivy could increase the chances of wind damage. Where access allowed the thick ivy ropes have been cut as low down the tree as possible and the stumps poisoned. The existing vegetation has been left to die naturally on the trees and will only be removed if it becomes a danger to members of the public and the stock.

The ivy growing around the standard trees within the north boundary hedge is impossible to reach at present and any further actions need to be thought out clearly to prevent creating gaps which will compromise the stock proofing.

Restoration work is still at an early stage and it is planned to adopt a cutting rotation recommended by Hedgelink (see management plan).

### **2.2.5.2 Scrub Clearance**

#### By hand

Under the HLS agreement, one of the primary targets was to clear 70% of the existing scrub. The scrub included dense patches peppered around the grasslands, some of which lay under the electricity cables. Scrub was also dense within the butterfly corridor and along the base of the boundary hedges making it difficult to reach and cut them.

Volunteers cleared large sections of privet, dog wood, bramble, hawthorn and blackthorn and where practicable the stumps were poisoned to prevent regrowth. A stump grinder was also used to dig out those sections which included very young shoots. Both measures have proved effective and natural grass and wild flower growth has been good. However, there is a lot of common ragwort in the seedbank in certain areas of the site and this has become a management priority. Spraying with a suitable herbicide is being considered.

#### Mechanical

Under the capital works programme, a contractor was hired to clear some of the very dense sections with a mulcher. A tractor and flail arm was also used to cut the lighter patches.

In all instances, the debris was either burnt, raked and stacked to make insect habitats or used to create dead hedges. The most notable dead hedges exist along the western boundary where the stock fencing is irreparable. There are short sections along the northern boundary.

The small mammal survey identified that the dead hedges do provide connectivity along the otherwise gappy western boundary.

#### Herbicide

The greatest level of scrub regeneration is associated with privet and dog wood. In 2017, Natural England suggested using a herbicide called SBK to control it. Initial trials toward the western end of the site have proved successful and further action will be taken across the site in the future. The scrub does need to be sprayed twice a year and it is important to spray the stems if this method is to be successful.

Poor weather during two consecutive winters prevented continuous work on the site and delayed the capital works programme. However, Natural England agreed to extend the timetable on both occasions and the target has been met with little damage to the site. However, scrub regeneration is an ongoing issue and further plans to control or combat it need to be developed.

In addition, the scrub under the power lines must be closely controlled to prevent the SSE from applying for access to what is now a well-balanced site.



### **2.2.5.3 Grazing and cutting regime**

Since 2011 the site has been grazed by between 9 and 12 Cobs provided by a grazier on the Southwick estate. The ponies are brought to the site in early January and left on site for six to eight weeks.

Cobs are notoriously fussy grazers and will leave those sections of grass around the very young sections of hawthorn, blackthorn and bramble regrowth. With Natural England's permission, a 'cut and collect' programme was established after the horses had gone to eradicate this problem. Over two days in late February, early March, a contractor cuts the whole site and collects all the debris. The debris, which includes the horse manure, is left on site in large piles at strategic points along the north and south boundaries. There are also three dumping points on the south side of the butterfly corridor hedge.

These 'compost heaps' reduce quickly and initial survey work indicates that they make good basking points for reptiles and nesting points for the small mammals.

The butterfly corridor is treated as a separate entity. The floor of this 'green lane' needs to be cut in late summer or early autumn because the scrub regeneration is prolific. It is a welcome shelter break for the lepidoptera and also proves popular with the walkers when the wind is strong. As a consequence, this section is kept very 'tidy'. A contractor is hired to 'cut and collect' the length of the corridor and the debris is left in one pile at the western end.

The costs of sustaining the development will need extra funding. The presence of livestock generates a workload of bureaucracy and animal welfare considerations that cannot easily be sustained without extra financial assistance.

Scrub maintenance requires hard conscientious work, especially when carried out by hand. Volunteers have undertaken much of this work to date but it will be necessary to work with contractors on a more regular basis to keep significant areas of scrub in check on a regular basis and to cut the hedges on a rotation basis.

The provision of suitable livestock is dependent on good relations with trustworthy graziers who are willing and able to supply, transport and attend to livestock and deal with the associated paperwork. This has been possible so far. The current grazier, the 5<sup>th</sup> since 1995, is keen to provide suitable animals (Cob ponies). He has provided ponies for the last 8 years.

## **2.2.6 Other achievements 2011-2017**

### **2.2.6.1 Infrastructure**

Up until 2011, the site was accessible to scramblers who would regularly ride across the grasslands. The most vulnerable point of access was on the southern boundary which formed the entrance/ exit for a public footpath. This footpath straddles the M27 via a footbridge and originally both sides of the bridge had wooden swing gates and fences. The gates and immediate fencing was often vandalised making it easy to ride a motor bike onto the site. However, it was decided to spend the moneys necessary to replace the gates and the fencing with galvanised metal fixtures and fittings. The gates need to allow buggies through and following consultation with a contractor, a special design was selected which prevented the bikes but provided suitable access to all others means of light weight access. This move immediately stopped the unwanted scrambler activity.

The site has a mains fed water trough for the grazing stock (see below) which by 2011 was dilapidated. This in turn was replaced by a contractor and currently works well.

There are five other gates on site. Two pedestrian width swing gates allow access between the Portsmouth City Council land and that owned by the Council.

These gates are the responsibility of PCC and despite recent attempts to steal one of them, they both work effectively.

The remaining gates form the main entrance on Skew Road. The posts on which the two 4mtr wide metal gates hang were badly damaged by fire as a result of vandalism. These have since been repaired and retreated with creosote. The public footpath finger post and kissing gate have also been refurbished by Fareham Borough Council.

The site has only one vehicular entrance which is kept locked to prevent fly tipping and travellers. Until 2017, parking was restricted to two vehicles in a narrow layby at the main entrance. It was possible to offer parking to volunteers on task days when the gate is open however, the hardstanding was far from ideal especially if the surface was wet.

In 2017, the surface was scrapped clean of all debris, sprayed with herbicide and 5 tonnes of scalping's spread evenly across the entrance section. This immediately added two suitable parking spaces.

In addition, the site name board was refurbished and three A3 information boards were created and mounted. Two panels provide information about the flora and fauna associated with the site. The third, is used to display a more detailed information sheet relating to specific plants. These sheets are changed monthly and can be found on the Council's website under 'plant of the month'.

## **2.2.6.2 Surveys**

### Lepidoptera

The Butterfly Conservation Trust (BCT) undertake regular surveys between March and September along predetermined routes. They provide the results at the end of each season. 26 butterflies and 4 day flying moth species have been recorded. Results 2017 are provided in appendix 3. BCT results have reflected the changes in the weather patterns but results for 2017 do show a good diversity and high numbers of more of the more familiar varieties.

The small blue was seen for the first time in five years on more than one occasion and following previous discussions with a local prominent ecologist, the BTC and Natural England it was decided to develop two butterfly scrapes.

The templates follow that designed by the BCT and were originally cut into a south facing bank which forms part of the butterfly corridor in the summer of 2017.

The scrapes have been sprayed with herbicide on three occasions in an effort to eliminate all regrowth. The scrapes will be weeded before being planted with kidney vetch and horseshoe vetch after the grazing stock have left in 2018. The seed is currently being propagated within a greenhouse and/or a conservatory.

The kidney and horseshoe vetch are the major food plant for the small blue butterfly. These two forms of vetch are not particularly common on the site and this form of an intense food source is part of a new project designed to enhance the numbers of this Red Data Book species.

A moth survey was last carried out by the Fareham Moth Society in 2010 (see appendix 2) but following discussions in October 2017, the FMS have agreed to dedicate some survey time to the site in 2018.

### Small Mammals

During the October and November 2017, a comprehensive small mammal survey was undertaken. Features like the hedges, scrub of varying density and aspect were taken into consideration. There is a very healthy and wide ranging population of wood mouse and a smaller population of field vole apparent across the site.

The field voles appeared only in the established hedges and in some of the dead hedges on the western boundary. All the cut and collect piles have been adopted by wood mice. The wood mice are also prevalent in those islands of scrub which are within four to five meters of the more established banks of dense existing scrub. Many of these 'islands' had previously been thinned out or reduced in size as part of the original capital works programme and it is good to see they still provide a suitable habitat.

Wood mice have also adopted the newly laid hedges and were recorded along each of the relevant sections along the southern boundary. See appendix 3 for the survey results.

## **2.2.7 Summary of factors influencing the achievement of long-term objectives**

### **2.2.7.1 Internal natural trends**

The most important management consideration is that natural succession is leading to the loss of chalk grassland through the encroachment of scrub and the coarsening of the remaining grassland. Management via grazing, scrub control and mowing is reversing this process.

### **2.2.7.2 Resources**

The need for capital work is much less than previous years but still remains high if good quality continuous hedging along the boundaries is to be achieved. Most of the dense scrub has now been cleared, the site is fully grazed, and a reliable, local grazer able to provide livestock. With the input of a volunteer group, specialist contractors and a successful HLS bid it should be possible to continue with the improvement of the site and achieve the long-term objectives.

## **2.3 Operational Objectives**

This section considers how the long-term objectives may be modified by the impact of trends and constraints. This leads to the formulation of short term or operational objectives that can be achieved by the end of the plan period. The operational objectives present a route by which the long-term objectives can ultimately be achieved.

### **2.3.1 Rationale and Operational Objectives**

#### **2.3.2 Long term Objectives 1 and 2:**

- 1. To improve boundary hedging to level 6 on the Hedgeline management scale and maintain existing habitats and associated fauna and flora.**
- 2. To improve, maintain and increase the area of species-rich calcareous grassland.**

Long term objectives 1 and 2 can be considered together as they both relate to the dominant vegetation cover. The seral progression of short, species-rich chalk grassland, to coarse, species-poor grassland, to scrub and then woodland, is undesirable in terms of both conservation and public access. Neither scrub nor tall grassland is rare or restricted to a single soil type. They are comparatively easily

replicated elsewhere, whereas species-rich chalk grassland requires a more complicated, balanced management.

As there are so many species associated with chalk grassland, there is a strong case for maintaining it at the expense of invasive scrub, especially as most of England's chalk grassland has disappeared in the last few decades and it has been a key landscape feature on chalk hills for many centuries.

If left unmanaged, scrub cover would increase, and the remaining fragments of downland will be lost and with them the dependant fauna and flora. The areas cleared of scrub would once again revert to scrub. The species dependant on scrub and tall grassland can be retained in smaller areas than currently exist on site thus the emphasis must be to retain and encourage the more valuable downland habitat, whilst the scrub cover is kept below 30%. There is also value in maintaining the scrub in its existing density and structure as we now know that it forms a valuable network of cover and habitat for the small mammal populations. Further studies of the current invertebrate species would add to the better understanding of this habitat and their needs. An up-to-date invertebrate study would be costly (£1,600 approx).

Grazing and scrub control is necessary to retain the species-rich plant communities and to encourage them to expand over ground that until recently was coarse grassland or scrub. Under appropriate management pressure, the vegetation types take up different proportions.

The landowners are in agreement with the above objectives, and it is now a legal requirement for management to be carried out to protect Sites of Special Scientific Interest. The ideal management to achieve the objectives over the whole site is some form of grazing. The use of livestock will reproduce the conditions that originally brought about the site's wildlife interest. Grazing is a sustainable and ecologically effective option, a conclusion that meets with the universal support of all relevant conservation bodies, e.g. The Hampshire Wildlife Trust and Natural England, and is in line with the proposals within the Hampshire Biodiversity Action Plan.

Although grazing benefits the grassland at low levels, it requires higher levels to control scrub. Incidents of vandalism have decreased in recent years so that is now possible to graze for longer. However, the continued use of mechanical scrub management is necessary to augment the scrub control achieved by grazing animals. This is a costly but necessary.

### **2.3.3 Operational Objective 1 & 2- To produce and maintain, throughout Portchester Common, a mosaic of the existing habitats with their associated flora and fauna whilst maintaining 70% of the area as species-rich calcareous grassland.**

Providing management pressure is maintained it is now possible to change the current proportions of the vegetation types (see section 1.2.2.3) to 70% species-rich calcareous grassland and 30% scrub/ woodland/coarse grassland mosaic.

The habitat created by the regrowth that follows scrub clearance is of interest in its own right. A small amount, *i.e.* less than 5%, will add diversity to the site and so the work programme should always aim to retain this habitat in conjunction with scrub clearance and follow up work.

The continued restoration and maintenance of hedges to provide secure livestock fences and a diverse habitat and food for the relevant fauna is of significant importance. This and providing trample-free zones in the scrub and to give a managed appearance to the site should be pursued.

Management that will produce downland in the long term will create a range of intermediate low scrub and grassland vegetation types in the short term. Future operational objectives should be devised in the light of the response of the vegetation to the management.

### **2.3.4 Long term Objective 3**

#### **Safeguard all notable species.**

The long-term retention of all notable species can best be achieved by successfully fulfilling long-term objectives 1 and 2. It is essential that fragments of species-rich grassland are not damaged during any scrub clearance and fencing/ hedging operations. It would require fewer resources to simply maintain many of the notable species in small, carefully managed areas without attempting to manage habitats across the entire site. However, this is undesirable in the long term as genetic diversity is likely to be reduced and small populations are vulnerable to sudden extinction. Where notable species are threatened, they should be retained by intensive local management.

It would be too labour intensive to find and identify all notable species therefore a more reasoned approach would be to concentrate on conserving certain easily monitored species and rely on the successful fulfilment of preceding objectives to maintain all the notable species. The work of surveying the more cryptic species is suited to student projects and enthusiastic amateur naturalists, thus this should be actively encouraged. Should extra funding become available, a full entomological survey would be of benefit.

### 2.3.5 Long term Objective 4

**To provide for public access and educational use of the site and to enhance public awareness and appreciation of downland habitat, except where it compromises objectives 1, 2 and 3.**

The sites' location on the urban fringe gives it a valuable role for informal countryside recreation. Extensive scrub and tall vegetation are incompatible with this and so the maintenance of open grassland and easily negotiated paths is desirable from a public access point of view. This accords with operational objectives 1 and 2 that seek to conserve landscape and biodiversity interest. The provision of public access is likely to be met with the achievement of operational objectives 1 and 2 so there is no need to amend long-term objective 4 as it relates to public access.

The achievement of long-term objective 4 assists in the previous objectives as public interest plays an essential role in safeguarding the site's nature conservation interest. A major constraint on the grazing programme is vandalism and livestock worrying. Misuse of the site is discouraged by a well-informed and interested visiting public. Pressure on sensitive vegetation can be avoided by careful routing of paths and positioning of access points.

The local communities will only support/tolerate management that includes grazing and extensive scrub clearance if they have an appreciation of the downland habitat and the threat caused by the lack of management. Grazing is necessary to achieve the operational objectives 1,2 and 3. It is highly desirable to form an association of the site with grazing livestock in the public mind.

Activities such as cycling and horse riding are not permitted as they damage the vegetation and discourage people from walking.

The resources required to achieve this long-term objective (often just talking to people) are less than those associated with the previous objectives and many of these are in place. Therefore, the long-term objective need not be modified.

#### Limits

The following limits can be identified:

No dumping of rubbish

No paths or other routes should be directed over remaining areas of species-rich downland turf.

No camping

No BBQ's/ Seasonal Fires or fireworks.

## **PART 3 PROJECT RECORDS AND REVIEW**

### **Operation objectives and Outline Prescriptions (Compartment 11)**

Operational Objective 1 & 2- To produce and maintain, throughout Portchester Common, a mosaic of the existing habitats with their associated flora and fauna, whilst maintaining 70% of the area as species-rich calcareous grassland.

Outline prescription 1.1 Monitor the effects of management

Outline prescription 1.2 Maintain grazing

Outline prescription 1.3 Prevent scrub invasion

Outline prescription 1.4 Improve hedge structure & habitat

Outline prescription 1.5 Develop and monitor the butterfly scrapes

### Operational objective 3 Safeguard notable species

Outline prescription 3.1 Collate existing records and establish status of notable species

Outline prescription 3.2 Prevent human activity from threatening notable species

Outline prescription 3.3 Protect threatened species

Operational objective 4 To provide for public access and educational use of the site and to enhance public awareness and appreciation of downland habitat, except where it compromises long term objectives 1, 2 and 3.

Outline prescription 4.1 Monitor public use of the site

Outline prescription 4.2 Maintain footpaths and other access, interpretative features

Outline prescription 4.3 Provide the public/ interest groups with the opportunity to learn more about the site via public events.



## WORK PROGRAMME 2023 2027

Annual Operations	Cmpt.	Resources	Timescale	23/24	24/25	25/26	26/27
<b>Objective 1 &amp; 2 – Habitat Management &amp; Site Integrity</b>							
Maintain grassland/scrub ratio (70/30%)		Staff	Ongoing	☑	Y	Y	Y
Maintain grazing		Staff	Nov - Dec	☑	Y	Y	Y
Scrub Control	Site	Staff/Vols	Jan - Feb	☑	Y	Y	Y
Hedgerow cutting	1	Staff	Jan - Feb	☑	Y	Y	Y
Maintain scrapes	1	Staff/Vols	March	☑	Y	Y	Y
Monitor the effects of management	Site	Staff	June - Aug	Y	Y	Y	Y
Investigate Commons Stewardship with NE	Site	Staff	Jan - April			Y	
Comments: 2023/24 - grazing, scrub control + hedgerow cutting fulfilled.							
<b>Objective 3 – Safeguard Notable Species</b>							
Collate existing records + status of notable sp	Site	Staff	Ongoing	Y	Y	Y	Y
Monitor human activity/pressures	Site	Staff/Vols	Ongoing	Y	Y	Y	Y
Protect sensitive areas + notable sp.	Site	Staff/Vols	Ongoing	Y	Y	Y	Y
Comments:							
<b>Objective 4 – Public Access &amp; Education</b>							
Monitor public use of the site		Staff	Ongoing	Y	Y	Y	Y
Maintain entrances and footpaths		Staff	Ongoing	Y	Y	Y	Y
Maintain signage, interpretation material etc		Staff	Ongoing	Y	Y	Y	Y
Provide & engage with public/interest groups information through literature and events/walks		Staff	ongoing	Y	Y	Y	Y
Comments: Calcareous grassland guided walks X2 in 2023							

## APPENDICES

## Appendix 1. HBIC Flora Survey 2010.

### Portsdown SSSI - Compartment 11 (Portchester Common)

#### Survey Details

#### National Vegetation Classifications Area

CG3a, *Bromus erectus* grassland: Typical subcommunity

W21d, *Crataegus monogyna*-*Hedera helix* scrub: *Viburnum lantana* subcommunity

#### Taxon Name Taxon Common Name Frequency Notable

*Achillea millefolium* Yarrow LO  
*Agrimonia eupatoria* Agrimony O  
*Agrostis stolonifera* Creeping Bent LO  
*Anacamptis pyramidalis* Pyramidal Orchid R  
~ *Anthyllis vulneraria* Kidney Vetch LF  
~ *Asperula cynanchica* Squinancywort LF  
~ *Blackstonia perfoliata* Yellow-Wort OF  
*Brachypodium sylvaticum* False-Brome OF  
~ *Briza media* Quaking-Grass F  
~ *Bromopsis erecta* Upright Brome A  
~ *Campanula rotundifolia* Harebell R  
*Campylium chrysophyllum* *Campylium chrysophyllum* R  
*Carduus nutans* Musk Thistle R  
~ *Carex caryophyllea* Spring Sedge LF  
~ *Carex flacca* Glaucous Sedge A  
~ *Carlina vulgaris* Carline Thistle O  
*Centaurea nigra* Common Knapweed O  
~ *Centaurea scabiosa* Greater Knapweed OF  
~ *Centaureum erythraea* Common Centaury R  
~ *Cirsium acaule* Dwarf Thistle F  
*Clematis vitalba* Traveller's Joy LF

*Clinopodium acinos* Basil Thyme LO Y  
*Clinopodium vulgare* Wild Basil LO  
*Cornus sanguinea* Dogwood F  
*Cotoneaster horizontalis* Wall Cotoneaster R  
*Crataegus monogyna* Hawthorn F  
*Dactylis glomerata* Cock's-Foot O  
*Daucus carota* Wild Carrot O  
*Echium vulgare* Viper's Bugloss LO  
*Eupatorium cannabinum* Hemp-Agrimony O  
*Euphrasia nemorosa* Eyebright O  
~ *Festuca ovina* Sheep's Fescue F-A  
*Festuca pratensis* Meadow Fescue R  
~ *Festuca rubra* Red Fescue LF  
*Galium mollugo* Hedge Bedstraw O  
~ *Galium verum* Lady's Bedstraw LF  
~ *Helictotrichon pratense* Meadow Oat-Grass LO  
*Heracleum sphondylium* Hogweed R  
*Hieracium* Hawkweed R  
*Holcus lanatus* Yorkshire-Fog LF  
*Homalothecium lutescens* Homalothecium lutescens LO  
*Hypericum perforatum* Perforate St. John's-Wort O  
*Hypochaeris radicata* Cat's-Ear R  
*Inula conyzae* Ploughman's-Spikenard R  
*Juglans regia* Walnut R  
~ *Leontodon hispidus* Rough Hawkbit F-A  
~ *Leucanthemum vulgare* Oxeye Daisy O  
*Ligustrum vulgare* Wild Privet A  
*Linaria vulgaris* Common Toadflax R  
~ *Linum catharticum* Fairy Flax O  
*Lolium perenne* Perennial Rye-Grass R

~ *Lotus corniculatus* Common Bird's-Foot-Trefoil F  
*Malus domestica* Apple R  
*Medicago lupulina* Black Medick LO  
*Odontites vernus* Red Bartsia R  
*Ononis repens* Common Restharrow LO  
*Origanum vulgare* Wild Marjoram LF  
*Pastinaca sativa* Wild Parsnip R  
*Picris hieracioides* Hawkweed Oxtongue LF  
~ *Pilosella officinarum* Mouse-Ear-Hawkweed O  
~ *Pimpinella saxifraga* Burnet-Saxifrage LO  
~ *Plantago lanceolata* Ribwort Plantain F  
*Plantago media* Hoary Plantain F  
*Poa humilis* Spreading Meadow-Grass R  
~ *Polygala vulgaris* Common Milkwort O  
*Potentilla reptans* Creeping Cinquefoil R  
~ *Primula veris* Cowslip LO  
\* *Prunus avium* Wild Cherry LO  
~ *Ranunculus bulbosus* Bulbous Buttercup O  
*Reseda lutea* Wild Mignonette O  
*Rhamnus cathartica* Buckthorn O  
*Rubus fruticosus* agg. Bramble LF  
~ *Sanguisorba minor* Salad Burnet A  
~ *Scabiosa columbaria* Small Scabious O  
*Silene vulgaris* Bladder Champion R  
*Sorbus aria* Whitebeam R  
*Sorbus intermedia* Swedish Whitebeam R  
*Taraxacum* Dandelion Agg. R  
*Taxus baccata* Yew R  
~ *Thymus polytrichus* Wild Thyme F-A  
*Trifolium pratense* Red Clover O

*Trifolium repens* White Clover R

*Trisetum flavescens* Yellow Oat-Grass O

*Verbascum thapsus* Great Mullein R

~ *Viola hirta* Hairy Violet OF

*Weissia microstoma* Weissia microstoma LF

### **Species Summary**

**No. of AWVP indicators : 1**

**No. of chalk grassland indicators : 30**

**Total no. of species : 86**

**No. of woodland species : 24**

## Appendix 2

### Results of moth and insect survey 15/08/18 (Nighttime)

#### Survey Data compiled by Richard Dickson

Classification	Taxon	Vernacular	Individuals	Status	Comment
Wasps & ants	<i>Lasius alienus</i> sens. str.	an ant	1		Ant of hot dry chalky slopes
Wasps & ants	<i>Lasius flavus</i>	an ant	5		The anthill maker
Wasps & ants	<i>Lasius fuliginosus</i>	Jet Black Ant	1		Tree species
Wasps & ants	<i>Myrmica sabuleti</i>	an ant	5		The red ant of the downs.
Wasps & ants	<i>Myrmica scabrinodis</i>	a red ant	1		
Wasps & ants	<i>Vespa crabro</i>	The Hornet	5		Workers
Wasps & ants	<i>Vespula vulgaris</i>	Common Wasp	2		Workers
Bugs	<i>Sigara falleni</i>	a water bug	1	Very common	◆◆◆
Bugs	<i>Sigara lateralis</i>	a water bug	5	Very common	females
Bugs	<i>Adelphocoris lineolatus</i>	a plant bug	5	Common	5+
Bugs	<i>Monalocoris filicis</i>	a plant bug	1	Very common	On ferns
Bugs	<i>Lygus rugulipennis</i>	the tarnished plant bug	10	Very common	About 10.
Bugs	<i>Neolygus contaminatus</i>	a plant bug	1	Very common	◆◆◆
Bugs	<i>Oncotylus viridiflavus</i>	a plant bug	2	Widely scattered	On knapweed
Bugs	<i>Orthops campestris</i>	a plant bug	1	Very common	On wild parsnip
Bugs	<i>Phytocoris reuteri</i>	a plant bug	1	Widely scattered	On hawthorn &c.
Bugs	<i>Phytocoris varipes</i>	a plant bug	5	Common	
Bugs	<i>Pinalitus cervinus</i>	a plant bug	1	Very common	
Bugs	<i>Plagiognathus arbustorum</i>	a plant bug	1	Very common	On nettles
Bugs	<i>Polymerus unifasciatus</i>	a plant bug	1	Local	On bedstraws
Bugs	<i>Stenodema calcarata</i>	a plant bug	1	Common	
Bugs	<i>Himacerus mirmicoides</i>	a damsel bug	1	Common	A ◆◆◆ with full wing development (macropterous) which is fairly unusual.
Bugs	<i>Nabis ferus</i>	a damsel bug	1	Common	
Bugs	<i>Acanthosoma haemorrhoidale</i>	Hawthorn Shieldbug	1	Common	
Bugs	<i>Elasmostethus interstinctus</i>	Birch Shieldbug	1	Common	
Bugs	<i>Pentatoma rufipes</i>	Red-legged Shieldbug	1	Common	

Leafhoppers & froghoppers	Aphrophora alni	a froghopper	5	Common	
Leafhoppers & froghoppers	Philaenus spumarius	Spittle Bug	5	Common	
Leafhoppers & froghoppers	Ledra aurita	a froghopper	4	Local	A wonderful insect, our largest froghopper and of quite bizarre shape.
Leafhoppers & froghoppers	Acericerus vittifrons	a leafhopper	1	Local	On maple
Leafhoppers & froghoppers	lassus lanio	a leafhopper	2	Common	On oak.
Beetles	Liopterus haemorrhoidalis	the Pile Beetle	1		
Beetles	Amara apricaria	a groundbeetle	6		
Beetles	Harpalus rufipes	Strawberry Seed Beetle	3		
Beetles	Bradycellus harpalinus	groundbeetle	1		
Beetles	Bradycellus verbasci	groundbeetle	1		
Beetles	Hydrobius fuscipes	a water beetle	1		
Beetles	Nicrophorus interruptus	a Sexton Beetle	1	Nb	One of the orange-and-black species
Beetles	Nicrophorus vespillo	a Sexton Beetle	1		One of the orange-and-black species
Beetles	Geotrupes spiniger	a dor beetle	4		Very close to The Dor Beetle, on large herbivore dung, affected by the use of Ivermectin to protect animals from worms.
Beetles	Heterocerus fenestratus	a beetle	1		
Beetles	Stenagostus rhombeus	a click beetle	1		Dead wood species
Beetles	Rhagonycha fulva	a soldier beetle	1		
Beetles	Soronia grisea	a beetle	1		
Beetles	Halyzia sedecimguttata	Orange Ladybird	1		
Beetles	Harmonia axyridis	Harlequin Ladybird	300		A plague of these: the number could be much higher. Crawling over everything, including us.
Beetles	Pyrrhalta viburni	Guelder-rose Leaf Beetle	1		
Beetles	Curculio glandium	Acorn Weevil	1		
Beetles	Ophonus ardosiacus	groundbeetle	1	Nb	
Flies	Erioptera lutea	a crane fly	1		?? genitalia examinedd
Flies	Lonchoptera lutea	a fly	1		
Flies	Herina nigrina	a picture-winged fly	3		
Flies	Acinia corniculata	a picture-winged fly	1	RDB1	?? On knapweed. Known from Portsdown, but a good find.



Flies	Anomoia purmunda	a picture-winged fly	1		
Flies	Limnia unguicornis	a snail killing fly	2		◆◆◆◆◆
Flies	Tetanocera elata	a snail killing fly	1		
Flies	Scathophaga stercoraria	the Dung Fly	1		
Flies	Spaziphora hydromyzina	dung fly family	2		A wetland species.
Moths & butterflies	Mesapamea secalis agg.	Common Rustic agg.	9		All examined were females.
Moths & butterflies	Coptotriche marginea	a moth	1		
Moths & butterflies	Yponomeuta cagnagella	Spindle Ermine	3	Common	On spindle
Moths & butterflies	Yponomeuta plumbella	a moth	1	Local	On spindle
Moths & butterflies	Ypsolopha scabrella	a moth	3	Common	
Moths & butterflies	Plutella xylostella	Diamond-back Moth	9	Migrant	
Moths & butterflies	Argyresthia albistria	a moth	1	Common	
Moths & butterflies	Syncopacma taenirolella	a moth	1	Local	c.4, but only one critically examined.
Moths & butterflies	Bryotropha terrella	a moth	1	Common	
Moths & butterflies	Bryotropha senectella	a moth	1	Local	det◆◆◆d genitalia
Moths & butterflies	Coleophora argentula	a moth	1	Common	◆◆◆ det◆◆◆d genitalia
Moths & butterflies	Elachista biatomella	a moth	1	Nationally Scarce B	
Moths & butterflies	Blastobasis adustella	a moth	9	Common	
Moths & butterflies	Blastobasis rebeli	a moth	6	Adventive	
Moths & butterflies	Pandemis corylana	Chequered Fruit-tree Tortrix	1	Common	
Moths & butterflies	Pandemis cerasana	Barred Fruit-tree Tortrix	1	Common	
Moths & butterflies	Pandemis heparana	Dark Fruit-tree Tortrix	2	Common	
Moths & butterflies	Epiphyas postvittana	Light Brown Apple Moth	1	Common	
Moths & butterflies	Acleris variegana	Garden Rose Tortrix	1	Common	
Moths & butterflies	Pseudargyrotoza conwagana	a moth	2	Common	
Moths & butterflies	Cochylimorpha straminea	a moth	1	Common	
Moths & butterflies	Agapeta hamana	a moth	2	Common	
Moths & butterflies	Agapeta zoegana	a moth	4	Common	
Moths & butterflies	Eupoecilia angustana	a moth	1	Common	
Moths & butterflies	Cochylis roseana	a moth	1	Local	

Moths & butterflies	Cochylis molliculana	a moth	1	Local	
Moths & butterflies	Cochylis atricapitana	a moth	1	Common	
Moths & butterflies	Celypha lacunana	a moth	1	Common	
Moths & butterflies	Endothenia marginana	a moth	6	Common	
Moths & butterflies	Spilonota ocellana	Bud Moth	2	Common	
Moths & butterflies	Eucosma cana	a moth	1	Common	
Moths & butterflies	Eucosma hohenwartiana	a moth	2	Common	
Moths & butterflies	Eucosma campoliliana	a moth	1	Common	
Moths & butterflies	Gypsonoma dealbana	a moth	1	Common	
Moths & butterflies	Cydia splendana	a moth	4	Common	
Moths & butterflies	Cydia amplana	a moth	2	Migrant	
Moths & butterflies	Lathronympha strigana	a moth	2	Common	
Moths & butterflies	Maniola jurtina	Meadow Brown	1		
Moths & butterflies	Aphomia sociella	Bee Moth	1	Common	
Moths & butterflies	Galleria mellonella	Wax Moth	2	Common	Larva in bee hives. Having an exceptional year.
Moths & butterflies	Cryptoblabes bistriga	a moth	1	Local	
Moths & butterflies	Dioryctria abietella	a moth	1	Common	
Moths & butterflies	Nephoterix angustella	a moth	1	Local	
Moths & butterflies	Acrobasis advenella	a moth	4	Common	
Moths & butterflies	Euzophera pinguis	a moth	1	Common	
Moths & butterflies	Homoeosoma sinuella	a moth	2	Common	
Moths & butterflies	Pyrausta despicata	a moth	5	Common	
Moths & butterflies	Pyrausta aurata	a moth	15	Common	
Moths & butterflies	Pyrausta purpuralis	a moth	3	Common	Easily confused with the species above. We do not find it commonly.
Moths & butterflies	Pleuroptya ruralis	Mother of Pearl	3	Common	
Moths & butterflies	Evergestis forficalis	Garden Pebble	3	Common	
Moths & butterflies	Eudonia mercurella	a moth	1	Common	
Moths & butterflies	Agriphila tristella	a moth	2	Common	
Moths & butterflies	Agriphila straminella	a moth	2	Common	

Moths & butterflies	Catoptria pinella	a moth	1	Common	
Moths & butterflies	Watsonalla binaria	Oak Hook-tip	4	Common	
Moths & butterflies	Drepana falcataria	Pebble Hook-tip	1	Common	
Moths & butterflies	Cilix glaucata	Chinese Character	1	Common	
Moths & butterflies	Lasiocampa quercus	Oak Eggar	1	Common	◆◆◆
Moths & butterflies	Idaea subsericeata	Satin Wave	9	Common	
Moths & butterflies	Idaea biselata	Small Fan-footed Wave	5	Common	
Moths & butterflies	Timandra comae	Blood-Vein	2	Common	
Moths & butterflies	Cyclophora annularia	Mocha	1	Nb	On maple
Moths & butterflies	Cyclophora punctaria	Maiden's Blush	5	Local	
Moths & butterflies	Xanthorhoe spadicearia	Red Twin-spot Carpet	2	Common	
Moths & butterflies	Camptogramma bilineata	Yellow Shell	1	Common	
Moths & butterflies	Epirrhoe alternata	Common Carpet	6	Common	
Moths & butterflies	Epirrhoe galiata	Galium Carpet	2	Local	On bedstraw. In our area, confined to the downs.
Moths & butterflies	Cosmorhoe ocellata	Purple Bar	1	Common	
Moths & butterflies	Horisme vitalbata	Small Waved Umber	3	Common	
Moths & butterflies	Melanthia procellata	Pretty Chalk Carpet	6	Common	
Moths & butterflies	Perizoma alchemillata	Small Rivulet	1	Common	
Moths & butterflies	Perizoma bifaciata	Barred Rivulet	4	Local	On the seeds of red bartsia.
Moths & butterflies	Gymnoscelis ruffasciata	Double-striped Pug	3	Common	
Moths & butterflies	Eupithecia inturbata	Maple Pug	1	Local	Number of records seems to be increasing ◆◆◆ or is that because we recognise it more?
Moths & butterflies	Eupithecia centaureata	Lime-speck Pug	7	Common	
Moths & butterflies	Eupithecia absinthiata	Wormwood Pug	3	Common	
Moths & butterflies	Eupithecia icterata	Tawny Speckled Pug	2	Common	
Moths & butterflies	Aplocera efformata	Lesser Treble-bar	2	Common	
Moths & butterflies	Acasis viretata	Yellow-barred Brindle	2	Local	
Moths & butterflies	Abraxas grossulariata	Magpie Moth	1	Common	
Moths & butterflies	Ligdia adustata	Scorched Carpet	3	Local	
Moths & butterflies	Macaria alternata	Sharp-angled Peacock	2	Local	

Moths & butterflies	Opisthograptis luteolata	Brimstone Moth	14	Common	
Moths & butterflies	Ennomos fuscantaria	Dusky Thorn	1	Common	
Moths & butterflies	Crocallis elinguaris	Scalloped Oak	2	Common	
Moths & butterflies	Peribatodes rhomboidaria	Willow Beauty	3	Common	
Moths & butterflies	Hemithea aestivaria	Common Emerald	1	Common	
Moths & butterflies	Notodonta dromedarius	Iron Prominent	7	Common	
Moths & butterflies	Pterostoma palpina	Pale Prominent	1	Common	
Moths & butterflies	Rivula sericealis	Straw Dot	9	Common	
Moths & butterflies	Lymantria monacha	Black Arches	1	Local	???
Moths & butterflies	Euproctis similis	Yellow-tail	3	Common	
Moths & butterflies	Orgyia antiqua	Vapourer	1	Common	???
Moths & butterflies	Spilosoma lutea	Buff Ermine	1	Common	
Moths & butterflies	Phragmatobia fuliginosa	Ruby Tiger	3	Common	
Moths & butterflies	Euplagia quadripunctaria	Jersey Tiger	3	Nb	One of the yellow hindwing form. A lovely moth, having an exceptional year.
Moths & butterflies	Mitlochista miniata	Rosy Footman	2	Local	
Moths & butterflies	Eilema griseola	Dingy Footman	5	Common	
Moths & butterflies	Schrankia costaestrigalis	Pinion-streaked Snout	1	Local	At rest on the bonnet of one of our cars at the end of the session.
Moths & butterflies	Abrostola tripartita	Spectacle	2	Common	
Moths & butterflies	Autographa gamma	Silver Y	23	Migrant	23+
Moths & butterflies	Plusia festucae	Gold Spot	6	Common	6+. Not rarity, but numbers have been high this year.
Moths & butterflies	Colocasia coryli	Nut-tree Tussock	2	Common	
Moths & butterflies	Acronicta rumicis	Knot Grass	2	Common	
Moths & butterflies	Amphipyra pyramidea	Copper Underwing	1	Common	
Moths & butterflies	Amphipyra tragopoginis	Mouse Moth	1	Common	Sadly, no longer common. Not a very attractive species, but sad to witness its decline all the same. So named because it scuttles away rather than fly.
Moths & butterflies	Cryphia algae	Tree-lichen Beauty	1	Rare migrant	Seems to be breeding in our area.

Moths & butterflies	Hoplodrina ambigua	Vine's Rustic	5	Local	Certainly not local in South Hampshire!
Moths & butterflies	Thalpophila matura	Straw Underwing	3	Common	Typical moth of the downs
Moths & butterflies	Phlogophora meticulosa	Angle Shades	3	Common	
Moths & butterflies	Eremobia ochroleuca	Dusky Sallow	2	Common	
Moths & butterflies	Nonagria typhae	Bulrush Wainscot	1	Common	Clearly not breeding here!
Moths & butterflies	Coenobia rufa	Small Rufous	2	Local	
Moths & butterflies	Apamea monoglypha	Dark Arches	1	Common	
Moths & butterflies	Mesoligia furuncula	Cloaked Minor	6	Common	
Moths & butterflies	Cosmia trapezina	Dun-bar	5	Common	
Moths & butterflies	Lacanobia oleracea	Bright-line Brown-eye	4	Common	
Moths & butterflies	Mamestra brassicae	Cabbage Moth	2	Common	
Moths & butterflies	Hecatera bicolorata	Broad-barred White	1	Common	
Moths & butterflies	Mythimna pallens	Common Wainscot	6	Common	
Moths & butterflies	Mythimna albipuncta	White-point	3	Migrant	
Moths & butterflies	Agrotis exclamationis	Heart and Dart	5	Common	
Moths & butterflies	Agrotis puta	Shuttle-shaped Dart	4	Common	
Moths & butterflies	Agrotis ipsilon	Dark Sword-grass	2	Migrant	
Moths & butterflies	Ochropleura plecta	Flame Shoulder	12	Common	12+
Moths & butterflies	Noctua pronuba	Large Yellow Underwing	4	Common	
Moths & butterflies	Noctua fimbriata	Broad-bordered Yellow Underwing	1	Common	
Moths & butterflies	Noctua comes	Lesser Yellow Underwing	1	Common	
Moths & butterflies	Noctua interjecta	Least Yellow Underwing	5	Common	
Moths & butterflies	Noctua janthina	Langmaid's Yellow Underwing	3	Migrant	All our records up to now have been singletons, and it is still a bit of a thrill to see it.
Moths & butterflies	Noctua janthe	Lesser Broad-bordered Yellow Underwing	13	Common	
Moths & butterflies	Xestia c-nigrum	Setaceous Hebrew Character	7	Common	
Moths & butterflies	Earias clorana	Cream-bordered Green Pea	1	Nb	On willows, so not resident on the reserve. Has been unusually common this year.
Lacewings	Sisyra fuscata	a lacewing	1		

Lacewings	Psectra diptera	a lacewing	1	Local	Odd species, often incapable of flight <b>???</b> though this was the fully winged form.
Lacewings	Chrysopa commata	a lacewing	1		Not recorded by us before.
Lacewings	Chrysoperla lucasina	a lacewing	1		Very close to the common green lacewing.
Crickets & grasshoppers	Tettigonia viridissima	Great Green Bush Cricket	1		A <b>???</b> walking over the footpath at night.
Crickets & grasshoppers	Conocephalus discolor	Long-winged Conehead	1	Na	<b>???</b> . The status is well past its Use-by-date: it is now common in our area in suitable areas of rank vegetation.
Caddisflies	Mystacides azurea	a caddisfly	1		
Caddisflies	Mystacides longicornis	a caddisfly	1		Distinctive species.
Parasitic wasps	Enicospilus ramidulus	an ichneumon	1		An easy species in what is otherwise a difficult group of insects.
Parasitic wasps	Stauropoctonus bombycivorus	an ichneumon	1		A very fine large and colourful wasp, parasitic on the Lobster Moth. Once considered a rarity, but we see it regularly at light.
Parasitic wasps	Netelia cristata	an ichneumon	2		Males
Parasitic wasps	Netelia virgata	an ichneumon	1		<b>???</b>
Parasitic wasps	Netelia infractor	an ichneumon	4		Males
Sawflies	Athalia rosae	a sawfly	1		

## Results of moth and insect survey 18/10/18 (Daytime)

### Survey Data compiled by Richard Dickson

	Taxon	Vernacular	Individuals	Status	Comment
<b>Classification</b>					
Wasps & ants	<i>Lasius alienus</i> sens. str.	an ant	1		Ant of hot dry chalky slopes
Wasps & ants	<i>Lasius flavus</i>	an ant	5		The anthill maker
Wasps & ants	<i>Lasius fuliginosus</i>	Jet Black Ant	1		Tree species
Wasps & ants	<i>Myrmica sabuleti</i>	an ant	5		The red ant of the downs.
Wasps & ants	<i>Myrmica scabrinodis</i>	a red ant	1		
Wasps & ants	<i>Vespa crabro</i>	The Hornet	5		Workers
Wasps & ants	<i>Vespula vulgaris</i>	Common Wasp	2		Workers
Bugs	<i>Sigara falleni</i>	a water bug	1	Very common	???
Bugs	<i>Sigara lateralis</i>	a water bug	5	Very common	females
Bugs	<i>Adelphocoris lineolatus</i>	a plant bug	5	Common	5+
Bugs	<i>Monalocoris filicis</i>	a plant bug	1	Very common	On ferns
Bugs	<i>Lygus rugulipennis</i>	the tarnished plant bug	10	Very common	About 10.
Bugs	<i>Neolygus contaminatus</i>	a plant bug	1	Very common	???
Bugs	<i>Oncotylus viridiflavus</i>	a plant bug	2	Widely scattered	On knapweed
Bugs	<i>Orthops campestris</i>	a plant bug	1	Very common	On wild parsnip
Bugs	<i>Phytocoris reuteri</i>	a plant bug	1	Widely scattered	On hawthorn &c.
Bugs	<i>Phytocoris varipes</i>	a plant bug	5	Common	
Bugs	<i>Pinalitus cervinus</i>	a plant bug	1	Very common	
Bugs	<i>Plagiognathus arbustorum</i>	a plant bug	1	Very common	On nettles
Bugs	<i>Polymerus unifasciatus</i>	a plant bug	1	Local	On bedstraws
Bugs	<i>Stenodema calcarata</i>	a plant bug	1	Common	
Bugs	<i>Himacerus mirmicoides</i>	a damsel bug	1	Common	A ??? with full wing development (macropterous) which is fairly unusual.
Bugs	<i>Nabis ferus</i>	a damsel bug	1	Common	
Bugs	<i>Acanthosoma haemorrhoidale</i>	Hawthorn Shieldbug	1	Common	
Bugs	<i>Elasmostethus interstinctus</i>	Birch Shieldbug	1	Common	

Bugs	Pentatoma rufipes	Red-legged Shieldbug	1	Common	
Leafhoppers & froghoppers	Aphrophora alni	a froghopper	5	Common	
Leafhoppers & froghoppers	Philaenus spumarius	Spittle Bug	5	Common	
Leafhoppers & froghoppers	Ledra aurita	a froghopper	4	Local	A wonderful insect, our largest froghopper and of quite bizarre shape.
Leafhoppers & froghoppers	Acericerus vittifrons	a leafhopper	1	Local	On maple
Leafhoppers & froghoppers	lassus lanio	a leafhopper	2	Common	On oak.
Beetles	Liopterus haemorrhoidalis	the Pile Beetle	1		
Beetles	Amara apricaria	a groundbeetle	6		
Beetles	Harpalus rufipes	Strawberry Seed Beetle	3		
Beetles	Bradycellus harpalinus	groundbeetle	1		
Beetles	Bradycellus verbasci	groundbeetle	1		
Beetles	Hydrobius fuscipes	a water beetle	1		
Beetles	Nicrophorus interruptus	a Sexton Beetle	1	Nb	One of the orange-and-black species
Beetles	Nicrophorus vespillo	a Sexton Beetle	1		One of the orange-and-black species
Beetles	Geotrupes spiniger	a dor beetle	4		Very close to The Dor Beetle, on large herbivore dung, affected by the use of Ivermectin to protect animals from worms.
Beetles	Heterocerus fenestratus	a beetle	1		
Beetles	Stenagostus rhombeus	a click beetle	1		Dead wood species
Beetles	Rhagonycha fulva	a solider beetle	1		
Beetles	Soronia grisea	a beetle	1		
Beetles	Halyzia sedecimguttata	Orange Ladybird	1		
Beetles	Harmonia axyridis	Harlequin Ladybird	300		A plague of these: the number could be much higher. Crawling over everything, including us.
Beetles	Pyrrhalta viburni	Guelder-rose Leaf Beetle	1		
Beetles	Curculio glandium	Acorn Weevil	1		
Beetles	Ophonus ardosiacus	groundbeetle	1	Nb	
Flies	Erioptera lutea	a crane fly	1		?? genitalia examinedd
Flies	Lonchoptera lutea	a fly	1		
Flies	Herina nigrina	a picture-winged fly	3		



Flies	<i>Acinia corniculata</i>	a picture-winged fly	1	RDB1	On knapweed. Known from Portsdown, but a good find.
Flies	<i>Anomoia purmunda</i>	a picture-winged fly	1		
Flies	<i>Limnia unguicornis</i>	a snail killing fly	2		
Flies	<i>Tetanocera elata</i>	a snail killing fly	1		
Flies	<i>Scathophaga stercoraria</i>	the Dung Fly	1		
Flies	<i>Spaziphora hydromyzina</i>	dung fly family	2		A wetland species.
Moths & butterflies	<i>Mesapamea secalis</i> agg.	Common Rustic	9		All examined were females.
Moths & butterflies	<i>Coptotriche marginea</i>	a moth	1		
Moths & butterflies	<i>Yponomeuta cagnagella</i>	Spindle Ermine	3	Common	On spindle
Moths & butterflies	<i>Yponomeuta plumbella</i>	a moth	1	Local	On spindle
Moths & butterflies	<i>Ypsolopha scabrella</i>	a moth	3	Common	
Moths & butterflies	<i>Plutella xylostella</i>	Diamond-back Moth	9	Migrant	
Moths & butterflies	<i>Argyresthia albistria</i>	a moth	1	Common	
Moths & butterflies	<i>Syncopacma taeniolella</i>	a moth	1	Local	c.4, but only one critically examined.
Moths & butterflies	<i>Bryotropha terrella</i>	a moth	1	Common	
Moths & butterflies	<i>Bryotropha senectella</i>	a moth	1	Local	det genitalia
Moths & butterflies	<i>Coleophora argentula</i>	a moth	1	Common	det genitalia
Moths & butterflies	<i>Elachista biatomella</i>	a moth	1	Nationally Scarce B	
Moths & butterflies	<i>Blastobasis adustella</i>	a moth	9	Common	
Moths & butterflies	<i>Blastobasis rebeli</i>	a moth	6	Adventive	
Moths & butterflies	<i>Pandemis corylana</i>	Chequered Fruit-tree Tortrix	1	Common	
Moths & butterflies	<i>Pandemis cerasana</i>	Barred Fruit-tree Tortrix	1	Common	
Moths & butterflies	<i>Pandemis heparana</i>	Dark Fruit-tree Tortrix	2	Common	
Moths & butterflies	<i>Epiphyas postvittana</i>	Light Brown Apple Moth	1	Common	
Moths & butterflies	<i>Acleris variegana</i>	Garden Rose Tortrix	1	Common	
Moths & butterflies	<i>Pseudargyrotoza conwagana</i>	a moth	2	Common	
Moths & butterflies	<i>Cochylimorpha straminea</i>	a moth	1	Common	
Moths & butterflies	<i>Agapeta hamana</i>	a moth	2	Common	
Moths & butterflies	<i>Agapeta zoegana</i>	a moth	4	Common	

Moths & butterflies	Eupoecilia angustana	a moth	1	Common	
Moths & butterflies	Cochylis roseana	a moth	1	Local	
Moths & butterflies	Cochylis molliculana	a moth	1	Local	
Moths & butterflies	Cochylis atricapitana	a moth	1	Common	
Moths & butterflies	Celypha lacunana	a moth	1	Common	
Moths & butterflies	Endothenia marginana	a moth	6	Common	
Moths & butterflies	Spilonota ocellana	Bud Moth	2	Common	
Moths & butterflies	Eucosma cana	a moth	1	Common	
Moths & butterflies	Eucosma hohenwartiana	a moth	2	Common	
Moths & butterflies	Eucosma campolliana	a moth	1	Common	
Moths & butterflies	Gypsonoma dealbana	a moth	1	Common	
Moths & butterflies	Cydia splendana	a moth	4	Common	
Moths & butterflies	Cydia amplana	a moth	2	Migrant	
Moths & butterflies	Lathronympha strigana	a moth	2	Common	
Moths & butterflies	Maniola jurtina	Meadow Brown	1		
Moths & butterflies	Aphomia sociella	Bee Moth	1	Common	
Moths & butterflies	Galleria mellonella	Wax Moth	2	Common	Larva in bee hives. Having an exceptional year.
Moths & butterflies	Cryptoblabes bistriga	a moth	1	Local	
Moths & butterflies	Dioryctria abietella	a moth	1	Common	
Moths & butterflies	Nephoterix angustella	a moth	1	Local	
Moths & butterflies	Acrobasis advenella	a moth	4	Common	
Moths & butterflies	Euzophera pinguis	a moth	1	Common	
Moths & butterflies	Homoeosoma sinuella	a moth	2	Common	
Moths & butterflies	Pyrausta despicata	a moth	5	Common	
Moths & butterflies	Pyrausta aurata	a moth	15	Common	
Moths & butterflies	Pyrausta purpuralis	a moth	3	Common	Easily confused with the species above. We do not find it commonly.
Moths & butterflies	Pleuroptya ruralis	Mother of Pearl	3	Common	
Moths & butterflies	Evergestis forficalis	Garden Pebble	3	Common	
Moths & butterflies	Eudonia mercurella	a moth	1	Common	

Moths & butterflies	Agriphila tristella	a moth	2	Common	
Moths & butterflies	Agriphila straminella	a moth	2	Common	
Moths & butterflies	Catoptria pinella	a moth	1	Common	
Moths & butterflies	Watsonalla binaria	Oak Hook-tip	4	Common	
Moths & butterflies	Drepana falcataria	Pebble Hook-tip	1	Common	
Moths & butterflies	Cilix glaucata	Chinese Character	1	Common	
Moths & butterflies	Lasiocampa quercus	Oak Eggar	1	Common	???
Moths & butterflies	Idaea subsericeata	Satin Wave	9	Common	
Moths & butterflies	Idaea biselata	Small Fan-footed Wave	5	Common	
Moths & butterflies	Timandra comae	Blood-Vein	2	Common	
Moths & butterflies	Cyclophora annularia	Mocha	1	Nb	On maple
Moths & butterflies	Cyclophora punctaria	Maiden's Blush	5	Local	
Moths & butterflies	Xanthorhoe spadicearia	Red Twin-spot Carpet	2	Common	
Moths & butterflies	Camptogramma bilineata	Yellow Shell	1	Common	
Moths & butterflies	Epirrhoe alternata	Common Carpet	6	Common	
Moths & butterflies	Epirrhoe galiata	Galium Carpet	2	Local	On bedstraw. In our area, confined to the downs.
Moths & butterflies	Cosmorhoe ocellata	Purple Bar	1	Common	
Moths & butterflies	Horisme vitalbata	Small Waved Umber	3	Common	
Moths & butterflies	Melanthia procellata	Pretty Chalk Carpet	6	Common	
Moths & butterflies	Perizoma alchemillata	Small Rivulet	1	Common	
Moths & butterflies	Perizoma bifaciata	Barred Rivulet	4	Local	On the seeds of red bartsia.
Moths & butterflies	Gymnoscelis rufifasciata	Double-striped Pug	3	Common	
Moths & butterflies	Eupithecia inturbata	Maple Pug	1	Local	Number of records seems to be increasing ??? or is that because we recognise it more?
Moths & butterflies	Eupithecia centaureata	Lime-speck Pug	7	Common	
Moths & butterflies	Eupithecia absinthiata	Wormwood Pug	3	Common	
Moths & butterflies	Eupithecia icterata	Tawny Speckled Pug	2	Common	
Moths & butterflies	Aplocera efformata	Lesser Treble-bar	2	Common	
Moths & butterflies	Acasis viretata	Yellow-barred Brindle	2	Local	
Moths & butterflies	Abraxas grossulariata	Magpie Moth	1	Common	

Moths & butterflies	Ligdia adustata	Scorched Carpet	3	Local	
Moths & butterflies	Macaria alternata	Sharp-angled Peacock	2	Local	
Moths & butterflies	Opisthograptis luteolata	Brimstone Moth	14	Common	
Moths & butterflies	Ennomos fuscantaria	Dusky Thorn	1	Common	
Moths & butterflies	Crocallis elinguarua	Scalloped Oak	2	Common	
Moths & butterflies	Peribatodes rhomboidaria	Willow Beauty	3	Common	
Moths & butterflies	Hemithea aestivaria	Common Emerald	1	Common	
Moths & butterflies	Notodonta dromedarius	Iron Prominent	7	Common	
Moths & butterflies	Pterostoma palpina	Pale Prominent	1	Common	
Moths & butterflies	Rivula sericealis	Straw Dot	9	Common	
Moths & butterflies	Lymantria monacha	Black Arches	1	Local	???
Moths & butterflies	Euproctis similis	Yellow-tail	3	Common	
Moths & butterflies	Orgyia antiqua	Vapourer	1	Common	???
Moths & butterflies	Spilosoma lutea	Buff Ermine	1	Common	
Moths & butterflies	Phragmatobia fuliginosa	Ruby Tiger	3	Common	
Moths & butterflies	Euplagia quadripunctaria	Jersey Tiger	3	Nb	One of the yellow hindwing form. A lovely moth, having an exceptional year.
Moths & butterflies	Mitochrista miniata	Rosy Footman	2	Local	
Moths & butterflies	Eilema griseola	Dingy Footman	5	Common	
Moths & butterflies	Schrankia costaestrigalis	Pinion-streaked Snout	1	Local	At rest on the bonnet of one of our cars at the end of the session.
Moths & butterflies	Abrostola tripartita	Spectacle	2	Common	
Moths & butterflies	Autographa gamma	Silver Y	23	Migrant	23+
Moths & butterflies	Plusia festucae	Gold Spot	6	Common	6+. Not rarity, but numbers have been high this year.
Moths & butterflies	Colocasia coryli	Nut-tree Tussock	2	Common	
Moths & butterflies	Acronicta rumicis	Knot Grass	2	Common	
Moths & butterflies	Amphipyra pyramidea	Copper Underwing	1	Common	
Moths & butterflies	Amphipyra tragopoginis	Mouse Moth	1	Common	Sadly, no longer common. Not a very attractive species, but sad to witness its decline all the same. So named because

Moths & butterflies	Cryphia algae	Tree-lichen Beauty	1	Rare migrant	it scuttles away rather than fly. Seems to be breeding in our area.
Moths & butterflies	Hoplodrina ambigua	Vine's Rustic	5	Local	Certainly not local in South Hampshire!
Moths & butterflies	Thalpophila matura	Straw Underwing	3	Common	Typical moth of the downs
Moths & butterflies	Phlogophora meticulosa	Angle Shades	3	Common	
Moths & butterflies	Eremobia ochroleuca	Dusky Sallow	2	Common	
Moths & butterflies	Nonagria typhae	Bulrush Wainscot	1	Common	Clearly not breeding here!
Moths & butterflies	Coenobia rufa	Small Rufous	2	Local	
Moths & butterflies	Apamea monoglypha	Dark Arches	1	Common	
Moths & butterflies	Mesoligia furuncula	Cloaked Minor	6	Common	
Moths & butterflies	Cosmia trapezina	Dun-bar	5	Common	
Moths & butterflies	Lacanobia oleracea	Bright-line Brown-eye	4	Common	
Moths & butterflies	Mamestra brassicae	Cabbage Moth	2	Common	
Moths & butterflies	Hecatera bicolorata	Broad-barred White	1	Common	
Moths & butterflies	Mythimna pallens	Common Wainscot	6	Common	
Moths & butterflies	Mythimna albipuncta	White-point	3	Migrant	
Moths & butterflies	Agrotis exclamationis	Heart and Dart	5	Common	
Moths & butterflies	Agrotis puta	Shuttle-shaped Dart	4	Common	
Moths & butterflies	Agrotis ipsilon	Dark Sword-grass	2	Migrant	
Moths & butterflies	Ochropleura plecta	Flame Shoulder	12	Common	12+
Moths & butterflies	Noctua pronuba	Large Yellow Underwing	4	Common	
Moths & butterflies	Noctua fimbriata	Broad-bordered Yellow Underwing	1	Common	
Moths & butterflies	Noctua comes	Lesser Yellow Underwing	1	Common	
Moths & butterflies	Noctua interjecta	Least Yellow Underwing	5	Common	
Moths & butterflies	Noctua janthina	Langmaid's Yellow Underwing	3	Migrant	All our records up to now have been singletons, and it is still a bit of a thrill to see it.
Moths & butterflies	Noctua janthe	Lesser Broad-bordered Yellow Underwing	13	Common	
Moths & butterflies	Xestia c-nigrum	Setaceous Hebrew Character	7	Common	

Moths & butterflies	Earias clorana	Cream-bordered Green Pea	1	Nb	On willows, so not resident on the reserve. Has been unusually common this year.
Lacewings	Sisyra fuscata	a lacewing	1		
Lacewings	Psectra diptera	a lacewing	1	Local	Odd species, often incapable of flight    though this was the fully winged form.
Lacewings	Chrysopa commata	a lacewing	1		Not recorded by us before.
Lacewings	Chrysoperla lucasina	a lacewing	1		Very close to the common green lacewing.
Crickets & grasshoppers	Tettigonia viridissima	Great Green Bush Cricket	1		A    walking over the footpath at night.
Crickets & grasshoppers	Conocephalus discolor	Long-winged Conehead	1	Na	   . The status is well past its Use-by-date: it is now common in our area in suitable areas of rank vegetation.
Caddisflies	Mystacides azurea	a caddisfly	1		
Caddisflies	Mystacides longicornis	a caddisfly	1		Distinctive species.
Parasitic wasps	Enicospilus ramidulus	an ichneumon	1		An easy species in what is otherwise a difficult group of insects.
Parasitic wasps	Stauropoctonus bombycivorus	an ichneumon	1		A very fine large and colourful wasp, parasitic on the Lobster Moth. Once considered a rarity, but we see it regularly at light.
Parasitic wasps	Netelia cristata	an ichneumon	2		Males
Parasitic wasps	Netelia virgata	an ichneumon	1		  
Parasitic wasps	Netelia infractor	an ichneumon	4		Males
Sawflies	Athalia rosae	a sawfly	1		

### Appendix 3 Butterfly Survey Results 2016 – 2018

Butterfly/ Moth	Total recorded Mar – Sept 2016	Total recorded Mar – Sept 2017	Total recorded Mar – Sept 2018
Six-spotted Burnet	26	0	41
Burnet Companion	3	7	2
Ghost Moth	0	0	1
Riband Wave	1	0	0
Lattice Heath	0	1	0
Silver Y moth	1	2	9
Common Carpet Moth	4	0	0
Small Skipper	10	11	2
Essex Skipper	0	1	0
Large Skipper	0	3	0
Clouded Yellow	1	0	0
Brimstone	53	76	78
Small White	57	19	71
Large White	59	47	119
Green veined White	5	4	8
Orange Tip	4	9	5
Small Copper	0	1	1
Small Blue	0	3	3
Silver Studded Blue	0	0	3
Brown Argus	1	5	4
Common Blue	69	152	275
Chalk-hill Blue	1	0	1
Holly Blue	4	11	5
Adonis Blue	1	0	0
Red Admiral	4	9	1
Small Tortoiseshell	2	2	3
Peacock	7	18	5
Comma	1	2	3
Dk Green Fritillary	0	1	2
Speckled Wood	28	20	22
Marbled White	55	52	113
Gatekeeper	48	24	23
Meadow Brown	436	660	412
Small Heath	1	0	2
Ringlet	14	5	10
<b>Total Recorded</b>	<b>896</b>	<b>1145</b>	<b>1224</b>