

DRAFT

2022 - 2026

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Grassland east of Fort Widley
2017

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0.1 Preamble

This management plan has been drawn up by the Portsdown Hill Countryside Service, which is currently responsible for most of the publicly owned land on Portsdown Hill, including the adjacent Site of Special Scientific Interest (SSSI). The plan covers the land outside the SSSI and it should be read in conjunction with SSSI Management Plan, Jones (2021) and successor documents.

The purpose of this document is to describe, evaluate and propose management for the sites. The aim is to protect wildlife and its habitat whilst promoting public enjoyment. The land is divided up into the field numbers allocated by the Rural Land Registry and is a mixture of former arable fields, grassland, woodland and chalk pits.

The plan's format is based on the Countryside Management System, Alexander, (2005).

0.2 Summary

Portsmouth City Council land on Portsdown Hill that lies outside the SSSI contains substantial fragments of calcareous grassland. These are relics from the time when the hill and adjacent area was much less developed and subject to intensive land use. There is also a variety of wildlife rich habitats such as former arable land, scrub, grassland, hedges, wooded and non-wooded chalk pits.

The most significant feature is that of former calcareous grassland that has been cultivated or managed for amenity without reference to its wildlife value. There is an opportunity to continue to restore species-rich grassland to the land that was formally farmed and increase the biodiversity of mown open space. Other habitats such as hedgerows, woodland and scrub form a mosaic of habitats that increase the biodiversity and amenity of the local area. The aim is to manage the complex of sites outside Portsdown Hill SSSI in such a way that they complement the ecological value SSSI by extending and connecting with similar habitats across the wider landscape.

Management has to be mindful of the area's rich archaeology and history which, along with the prominent geology, adds visitor interest. Interconnected flower-filled grassland with a variety of viewpoints makes the hill an attractive destination and a network of paths and walkways will encourage people to appreciate the area.

Considerations of the wider environmental issues are factored in so that appropriate recognition is given to problems of climate change, biodiversity loss and unsustainable activity. In essence if the land not used for countering climate change and biodiversity loss there should be a very good reason.

DESCRIPTION

1.1 General information

This plan refers to a group of sites that are relatively small in the context of the wider landscape. They are widely scattered and have different land use histories. Generic information that refers to all sites is given below under the relevant heading. Additional site-specific information is given in Section 1.1.5.

Table 1 Non-SSSI Land on Portsdown Hill Information Summary		
Site: Portsdown Hill, also known as Ports Down , see OS maps	Local authority: Portsmouth City Council.	OS Sheets: 1:50,000 - 196, Explorer -119, 1:10,000 - SU60NE & SU60NW
Status: Public open space	OS Grid. Ref: SU 623068 in west to SU 666064 in east.	Photographic cover: Archive: Map library University of Portsmouth, Portsdown Hill Countryside Service.
Soil Survey: Soils of south east England No 6 (1:250000)	Geological survey: Fareham No 316 (1:63,360)	Owners: Portsmouth City Council.
Site Manager: Richard Jones Line manager Adrian Rozier	Address: Portsdown Hill Countryside Service, Fort Widley, Portsdown Hill Road, Portsmouth. PO6 3LS 023 9238 9623 Richard.jones2@portsmouthcc.gov.uk	Total area: 58 ha
		Plan prepared by: Richard Jones
		Last updated: 14/09/2021
Holding numbers: 15/130/8002		

1.1.1 Location

Portsdown Hill lies immediately to the north of the City of Portsmouth. It is on the urban fringe and clearly marks the boundary between the northern boundary of Portsmouth and Fareham and rural South East Hampshire. The area described in this plan is crossed by several roads, notably Portsdown Hill Road (B2177), Widley Walk and the London Road out of Cosham.

1.1.2 Tenure

This is not a legal document.

The land is owned by Portsmouth City Council.

1.1.3 Relationships with any other Plans or Strategies

Many sites covered in this plan are adjacent to [Portsdown Hill SSSI](#), which is covered by a management plan, Jones, (2021). This plan has the same relationships of that plan with other plans and legislation/strategies apart from those relating to SSSIs. All of the basic administrative and house-keeping functions that are come to both plans are described in the plan that covers the SSSI land.

See [Portsmouth City Council's Adopted Plan](#) area, Portsmouth City Council, (2012).

There is no Biodiversity Action Plan for Portsmouth.

1.1.4 Management Infrastructure

Management of the sites is carried out by Portsdown Hill Countryside Service (PHCS), which is based at Fort Widley. The PHCS has a single employee (Portsdown Hill Countryside Officer). 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. Under the control of the Park's department (and in coordination with conservation management aims produced by the PHCS) staff mow areas of amenity grassland and clear litter.

A friends group ([the Friends of Portsdown Hill](#)) represent some of the local views on the site and the wider area, in particular taking an interest in the site's history and wildlife; there are close links between the FoPH and the conservation volunteers.

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.

Most of the land is directly managed by the PHCS. Other areas are the responsibly of Portsmouth City Council's Parks department who administer the grass cutting and litter clearance which the PHCS.

Some roadside verges and grassland areas surrounded by roads are managed by Colas through a PFI. Liaison with Colas results in the management of this land being in accordance with the aims of this plan.

1.1.5 Sites

This plan refers to 20 sites of which 18 are registered under Rural Land Registry field numbers as parcels of land. Where the sites are similar, share a common history and are adjacent they are grouped together, see Table 2.

Table 2 Sites covered in this plan

(A)	3	Widley Dell	su6508293	
(A)	4	Two Dells Trail	su65064677	
(A)	5	Fort Widley Nature Trail, Triangular Meadow	su65068553	
(A)	1	Children's Wood Field and walkway	su65069967	
(A)	2	Land around Widley Farm field	su66061055	
(A)	3	Verge North of viewpoint car park	su66062345	
(B)	1	Land surrounding Main Viewpoint car park	su66063137	
(B)	2	Candy's Pit	su66065934	
(B)	3	Large road island south of The George PH	su66068237	
(B)	4	Open space east of Old A3	su66067025	
(B)	5	Farlington Avenue Meadow	su67062530	
(B)	6	Land south-west of Cliffdale Gardens	su66061011	
(C)	1	Land south of Fort Purbrook	su67068432	
(C)	2	Land east of Crookhorn lane	su68061831	
(C)	3	Verges south Fort Purbrook Farlington Redoubt	su680063	
(D)	1	Paulsgrove Chalk pit	su63065157	
(E)	1	Top field	su64063967	
(E)	2	Mill Lane Southwick road walkway	su645067	
		For information		
		Field numbers relating to SSSI		
		SSSI comps 7-10	su65067931	
		SSSI comps 1-6	su64062852	

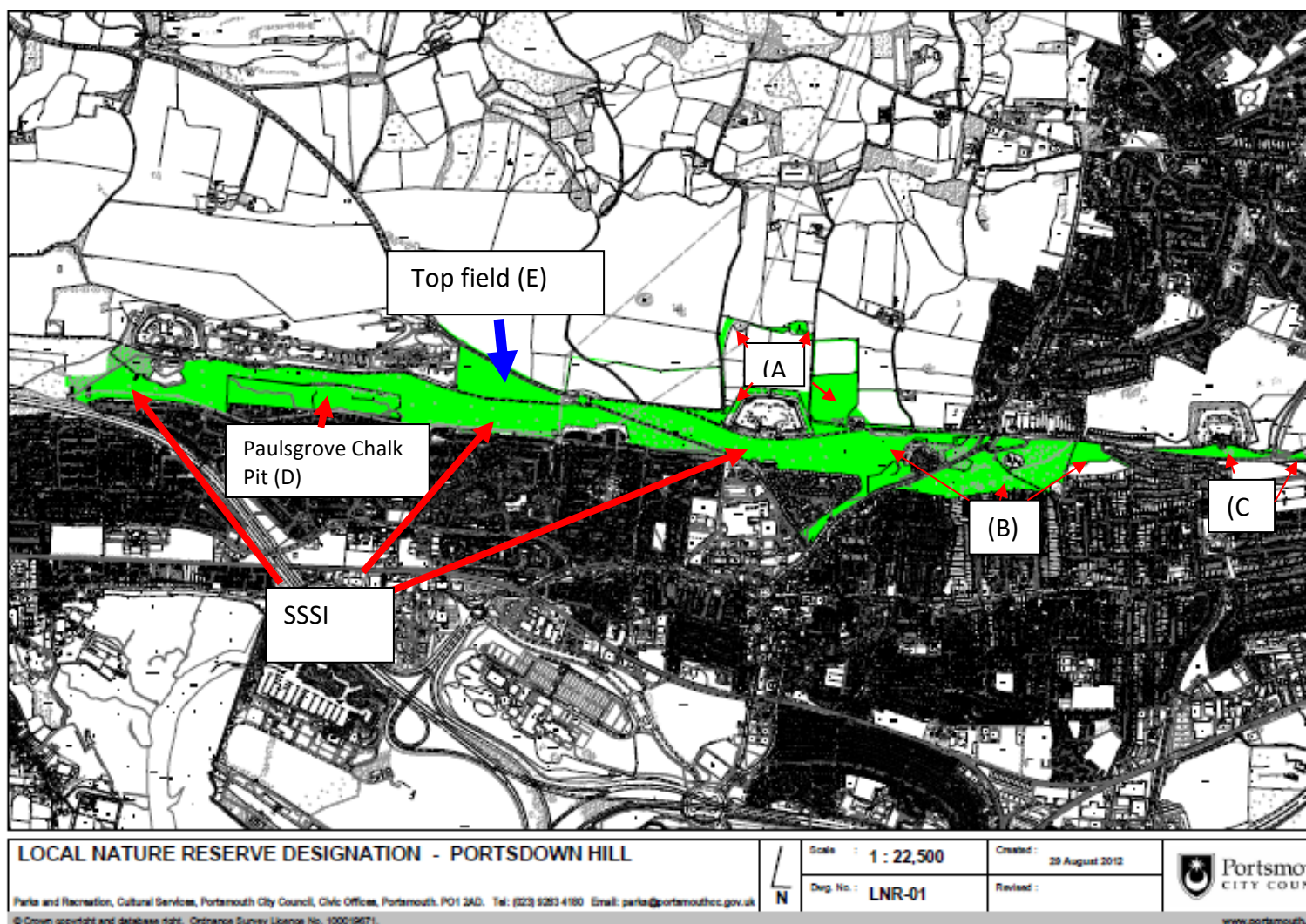


Fig 1 Map of sites and location of SSSI

1.1.5.1 Open Space North of Portsdown Hill Road (A)

Land east of Fort Widley / Land west of Fort Widley
 Fort Widley Nature trail and Triangular Meadow
 Children's wood field
 Land around Widley Farm field
 Two Dells Trail
 Verge North of Viewpoint car park

There are 8 fields north of Portsdown Hill. The road runs along the ridge of the hill resulting in those fields on top of the Hill having a greater presence of chalk and therefore a greater

proportion of calcareous grassland. The ground falls away to the north and chalk is overlain with tertiary, non-calcareous deposits.

These sites can be considered together as they form a geographic unit, with the same aspect and similar land use history except the verge north of the viewpoint car park.

Land east of Fort Widley / Land west of Fort Widley

These two sites are of a similar area, aspect and appearance. They largely comprise open grassland with isolated mature hawthorn bushes. The grassland is generally diverse with localised areas of low diversity. Like much of the mown amenity grassland on Portsdown it is made up of downland, which has been partially reseeded and enriched with topsoil.

The two sites are close to Fort Widley and would have been disturbed during the building of the fort during the 1860's and road building.

Two Dells Trail / Widley Dell

Two strips of predominantly grassland in which a walkway is bounded by either fences or hedges. It was under agricultural grass until the 1980s. Widley Dell is a wooded chalk pit off Widley Walk that marks the Eastern end of the Two Dells Trail. Mature Ash, Lime and Sycamore trees dominate the canopy. Hazel forms part of the understory and Elm is present. Pedestrian access is via a circular path with entrance points to the east and west.

Fort Widley Nature Trail / Triangular Meadow

These areas are immediately next to the dry moat that surrounds Fort Widley. Some the land lies within the Scheduled Ancient Monument designation associated with Fort Widley and consideration needs to be given to preservation of historic features alongside those of habitat conservation. During the construction of the fort the whole area would have been extensively disturbed. It seems likely that that calcareous grassland would have been established on the bare chalk and scrub would have been suppressed during the maintenance of the fort's defences.

Scrub developed in the years leading up to the 1990s as the areas received little management during this time. In recent years scrub clearance aimed at preventing bushes encroaching on the grassland and some grassland management, (haymaking and cut and clear) has occurred. In the 1990s a hedge was planted to connect scrub to the roadside hedgerow system.



Figure 2 View north on Two Dells Trail off Mill lane

Children's wood field

Situated north-west of the Churchillian pub. It slopes downhill to the north and was formerly an agricultural field under grass. Since the early 1990s it has been open public access and has largely been mown as amenity grassland. From 2000 approximately 1 ha has been cut as a late hay crop in order to increase the botanical diversity.

In 1991 and 1992 five blocks of woodland were planted at the edge of the site. This has produced a mixed deciduous woodland. Hazel, ash, blackthorn, holly, field maple, hawthorn are present. Some of the plantations are subject to heavy pressure and littering and most of the understorey has been flattened.



Land around Widley Farm Field

This is a fenced walkway of approximately 5m wide around an arable field. It

was established in 2007. Since it was established it has grassed over with a sward dominated by *Arrhenatherum elatis*, false oat grass.

Figure 3 Preparing grass for baling Children's wood field (top)

Seed heads of flowers established on former species poor grass ley (bottom)

Verge North of Viewpoint car park

It is continuous with the land around Wildly Farm field but is largely separated by a tall wide blackthorn dominated hedge. It contains evidence that it was fine calcareous grassland with localised attempts to enrich the soil.

1.1.5.2 Open space south and east of SSSI (B)

Candy's pit

Open space east of London Road*

Islands south of The George *^

Farlington Avenue Meadow

Land south west of Cliffdale Gardens*

Land surrounding Main Viewpoint car park*

* indicates PCC Parks department has some responsibility for general mowing and bin provision

^some areas managed by Colas

Largely on the same contour as the SSSI is a complex of 7 areas that are recognised as fields. They are a mixture of open space amenity grassland of a variety of levels of ecological interest to chalk pit dominated by secondary woodland.

Candy's pit

It is one of a group of 4 chalk pits. On the opposite (eastern) side of the road is a smaller chalk pit known by some as Foxdell, which can be considered a continuation of Candy's Pit. Immediately to the south is a larger chalk pit that is now a mobile home park, known as Cliffdale Gardens. To the east (220 m) is Collyer's Pit a small chalk pit containing private housing. Neither Cliffdale Gardens nor Collyer's pit form part of this plan

The chalk pit and associated surrounding land occupies 1.56 ha. The site is immediately west of the London Road, approximately 1 km north of Cosham, grid reference SU666064. It lies 200m east of Portsdown Hill SSSI.

The chalk pits has been put to many uses over time other than chalk extraction. They have been used for defensive and recreational purposes. There are no houses in the pit now; however, there were at least two in the past. They were demolished in the 1940s and 1980s. The houses had tea gardens and many naturalized cultivated plants are found in the pit.

Open space east of London Road.

The majority is mown amenity grassland, managed in the main by Portsmouth City Council's Parks department. Some conservation management is carried out by the PHCS. Despite extensive reseeding and disturbance chalk grassland species are present, so the grassland is reasonably diverse. Areas supporting a diverse flora have a mowing regime consisting of a single winter cut and clear.

A wooded chalk pit, (Foxdell) occupies a central position in the site. Trees and scrub extend from the pit. Sycamore dominates but there is a mix of beech, ash and hawthorn. The understory is dominated by ivy.

Islands south of the George Pub

These areas of grassland are surrounded by roads and have been substantially disturbed by road realignment work in the 1970s. The bare chalky nature of the soil has led to the establishment of diverse calcareous grassland. An Iron Age enclosure was discovered during the road works.



Figure 4 Grassland on traffic islands

are cut and cleared annually. There are areas of bramble and scrub with emergent trees, notably sycamore and black poplar.

Land surrounding Main viewpoint car park

Intensively used mown grassland dominated by ryegrass surrounds the main car park. Isolated hawthorn trees are scattered over the grassland. Where the area abuts the fenced off top of Clifdale Gardens secondary woodland dominated by sycamore has established. Substantial areas retain a diverse assemblage of calcareous grassland plants and areas taken out of the standard mowing regime support a many characteristic species of calcareous grassland.

1.1.5.3 Open space near Fort Purbrook (C)

Land south of Fort Purbrook

Land off Crookhorn Lane

Verges south of Fort Purbrook and Farlington Redoubt *

* indicates PCC parks department has some responsibility for general mowing and bin provision

Three parcels of land near Fort Purbrook

Land south of Fort Purbrook

A linear strip parallel to the road and separated from it by a hedge/band of scrub. A well-used track runs the length of it. The ground has been disturbed by the construction of the fort. This was colonised by grassland and then more recently scrub. Although little grassland remains what remains there is botanically diverse. Substantial numbers, several thousand, of

Farlington Avenue Meadow

This is predominantly a grassland site. *Arrhenatherum elatis* (false oatgrass) dominates the sward with calcareous grassland species well represented. The site is cut and cleared if haymaking doesn't occur. Planted scrub occupies 15% of the area.

In 2009 the eastern limb of the site was considerably widened by realigning the boundary fence that separated a narrow walkway from a grazing paddock. The land was then for conservation and public access.

Land south west of Clifdale Gardens

Predominantly amenity mown grassland that shows signs of reseeding and disturbance. Areas of calcareous grassland that have been taken out the standard mowing regime support diverse flora. They

Anacamptis pyramidalis (pyramidal orchid) are found. Recent clearance work suggests that grassland species will return following scrub clearance.

Land off Crookhorn lane

A triangle of land surrounded by tall established hedges. Calcareous grassland has been overtaken by scrub invasion. Much of this scrub has been cleared but its re-growth is vigorous.



Figure 5 Cut and clear south of Fort Purbrook

Verges south of Fort Purbrook and Farlington Redoubt

Mostly verges on the northern side of Portsdown Hill road between mature hedges and roadside pavement. The verges the eastern extreme of the land extends 5 metres beyond the hedge line into the field to a fence.

1.1.5.4 Paulsgrove chalk pit (D)*

* indicates PCC parks department has some responsibility for general mowing and bin provision

Paulsgrove chalk pit is a former quarry site on the southern edge of the SSSI. It has been re-landscaped for public access; of this the western end, 2.91 ha, is still designated as part of the adjacent SSSI. The prominent chalk cliffs are a landmark feature.



Figure 6 *Hippocrepis comosa* In Paulsgrove chalk pit

The floor of the older eastern end of the chalk pit was levelled and reseeded in the 1970s. It has a moderately diverse flora dominated by meadow fescue. The western end of the site was substantially re-landscaped in 1998. It was reseeded using seed from the adjacent SSSI and harvested seed from chalk grassland sites in Dorset. *Brachpodium pinnatum* (Tor grass) is the spreading here, the only place on the hill where it is growing. It is likely that it was introduced in the seed from Dorset. PCC parks department has some responsibility for general mowing

and bin provision

1.1.5.5 Top field and walkway between Mill Lane and Southwick Road (E)

Top field

The top field is a 7 ha field site that extends over the ridge of the Hill. Roughly triangular in shape it is bounded by roads to the north (B2177) and south (James Callaghan Drive). The Western boundary is formed by the perimeter fence of a prominent naval research establishment.



Figure 7 Cattle grazing Top Field

There is very little topsoil; chalk and flint dominate. Soil analysis indicates a low level of phosphate, index 1. This makes it suitable for reversion to species-rich grassland.

Historically, the field was downland until the early 1960s. The site was under arable production until 2010. The site has been reseeded using seed from downland vegetation on adjacent areas of the hill. Scrub blocks have been established and a hedgerow surrounding the site.

The scrub and hedges provide shelter for reptiles and nesting birds, and to act as a windbreak for downland species. An insect survey, Pinchen (2014), recorded several RDB species.

It occupies an exposed prominent hilltop position and has impressive views north and south.

Southwick Road – Mill Lane walkway

A walkway (1.5km) around the field margins of some 6 metres width extends from the North side of Southwick Road (B2177) to Mill Lane. It crosses Pigeon House Lane.

The walk has been delineated from the farmland with a fence and access points installed. The walkway and hedge was overgrown in places. Access has been improved and the hedge laid and replanted with the help of The Tesco Bags of Help Scheme in early 2017.

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 17.5°C). The lowest monthly average is in January and February, (approximately 5.0°C).

Portsmouth Hill is a relatively 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 can be found within the scrub, woodland and chalk pits whatever the wind direction.

High summer temperatures occur due to the sites with southerly aspects. The average yearly rainfall is 800 mm, which is 100 mm higher than the coast.

1.2.1.2 Geology

The underlying cretaceous deposits are responsible for the topography and soil chemistry, thus it is highly significant.

The chalk extraction has exposed prominent cliffs. Unlike the large quarries at Wymering and Paulsgrove, the cliff at Candy's Pit is cut through the fold of the anticline in a north south orientation. This gives an uncommon view of the strata and is of interest from a geological perspective.



Figure 8 Chalk exposure Candy's Pit

Portsdown 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. Details of the geology are viewable at the [UK Onshore Geological Library](#).

The highest point of Portsdown's ridge is 120 metres. Within the plan the height ranges from 50 to 116 metres. The highest point is within the Top Field.

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.

Analysis of soils suggests it is suitable for conservation of calcareous grassland. Soil chemistry results on all sites in 2016 show pH to be high (> 7.7) c.f. guidelines of pH 6.5 and phosphorous to be low (< 10ppm) c.f. of 26ppm. The guidelines are based on minima for agricultural for productivity rather than conservation. See appendix 2

1.2.2 Biological

Many biological records exist and [vegetation](#) surveys have been carried out in the last ten years. Other older records often relate only to 'Portsdown Hill' and pre-date the designation of the SSSI so it is not possible to separate them, (Appleton *et al*, 1975). However, most of the characteristic calcareous grassland species which are well represented on the SSSI are

also found elsewhere on Portsdown Hill. The process of compiling the available information is ongoing. See [species list](#).

1.2.2.1 Flora

Many species of plant found on the SSSI are also found elsewhere on Portsdown Hill. Many characteristic species of chalk downland are found in grassland that has been taken out of the standard amenity mowing regime. Surveys of grassland sites reveal diverse calcareous grassland with a history of disturbance.

In the Top Field arable plants, *e.g.* Venus Looking Glass, Prickly Poppy and Rough Poppy are present along with many other plants associated with arable cropping. See fig 9.



Figure 9 Rough poppy and Venus Looking-glass

1.2.2.2 Fauna

1.2.2.2.1 Invertebrates

No up to date investigation of invertebrates has been apart from the Top field, (Pinchen, 2014) it can be assumed a diverse fauna exists as the habitats range from open calcareous grassland, long-established hedgerows woodland and sheltered chalk pits.

1.2.2.2.1.1 Insects

Many species found on the SSSI are also found elsewhere on Portsdown Hill, these include, *Asilus crabroniformis*, (Hornet Robber fly). Areas of flowery grassland support many pollinating insects.

An environmental survey of Paulsgrove Chalk pit (Hampshire Ecological Services, 1995) carried out prior to the 1998 landscaping work noted a predominantly bare chalk habitat with small areas of calcareous grassland and an abundant insect community. Several red data book (RDB) insect species were found. The subsequent landscaping work aimed to retain these species and to safeguard their habitat.



Figure 10 *Nemophora metallica* on Field Scabious

Two insect surveys of the Top Field, (Pinchen, 2014, 2018) listed several BAP species including Brown banded bumblebee, (*Bombus humilis*)

1.2.2.2.1.2 Molluscs

Snails are abundant on all of the sites but there is as yet no survey data. An observer noted a considerable number and diversity of snails on the chalk rubble at the base of the cliff face in Candy's Pit. It was thought that moisture and shelter provided by the chalk debris produced ideal conditions for algal growth and thus the snails.

1.2.2.2.2 Birds

The variety of habitats and the prominence of Portsdown Hill provide good habitat for birds either for breeding or stopping over during migration. Skylarks hold territories in the Top Field throughout the breeding season and Peregrines nest in Paulsgrove Chalk pit. Yellowhammer breed on the site. The post arable vegetation attracts finches and stonechats and many other migrants are seen on passage in the spring and autumn. The sites host winter thrushes and summer warblers. Passage migrants such as Redstart, Spotted flycatchers and Wheatears are regularly seen.

1.2.2.2.3 Mammals

Notable species include Harvest Mouse and Hare in the Top field. Elsewhere Rabbits, Badgers, Foxes, Field Mouse, Yellow-necked Mouse, Common Shrew are reported. Roe deer and Muntjac are present.

1.2.2.3 Communities

1.2.2.3.1 Arable plants

Around half a hectare of the Top Field is managed to maintain notable arable plants. It is cultivated each year to maintain this habitat.

1.2.2.3.2 Grassland

There is a variety of grassland types that reflect the management history. Most, if not all, are influenced by the underlying calcareous geology.

Within Paulsgrove chalk pit different landscape restoration techniques have given rise to different types of grassland. The grassland in the western end of the site is open, and botanically diverse with many species associated with chalk grassland e.g. *Hippocrepis comosa*, (Horseshoe Vetch), *Anthyllis vulneraria* (Kidney Vetch), *Crepis* sp Hawkbeards. The site is beginning to scrub over with *Ulex europaeus*, Gorse.

The grassland in the eastern end of the chalk pit is a tall vigorous sward dominated by *Festuca pratensis*. Other features are bunds, scrub (including planted blocks), a pond and chalk cliffs.

The Top Field supports a recently established diverse, grassland community (largely introduced from elsewhere on Portsdown).



Figure 11 Cultivating ground for the benefit of arable plants

Mown amenity grassland comprises a large part of the plan area and it shows signs of a mix of factors. Disturbance through engineering projects of different ages, trampling, enrichment, top-soiling and reseeded, agriculture and measures to improve the habitat diversity. This has given rise to enriched species-poor areas ranging to substantial areas of calcareous grassland where the original grassland community is at least partially intact. Where overlying non-calcareous soil occurs in sufficient depth i.e., on the northern slopes of the hill and where past soil importation has occurred then mesotrophic grassland communities occur. These are generally botanically diverse though several years of sympathetic management.

Haymaking and cut and clear operations have been widely applied since 2000. The extent of this management is influenced by the residual grassland biodiversity and the requirement to maintain short turf for public access near car parks.

1.2.2.3.3 Woodland

Woodland is characteristically sycamore-dominated secondary woodland. In Candy's Pit and areas near to an understory of hawthorn and ivy is interspersed with many cultivated species, which reflect the past use as gardens. A small amount of calcareous grassland remains in glades. The woodland developed relatively recently. Photographs from the 1950s and earlier show it to be much less wooded than present.



Widley Dell is a mix of sycamore, ash, lime, hazel. The presence of (*Ulmus*) elm is adds interest. Dutch elm resistant elm have be planted on the site with the intention of encouraging white letter hairstreak butterflies.

In the Children's Wood Field there are several small, recently planted (early 1990s) plantations with a diverse composition, hazel, ash, beech and hawthorn.



South west of the main view point is a commemorative plantation, the Falklands Plantation, planted in 1982. It was established as a beech wood with supporting ash trees. The density of the trees is such that most trees will fail so thinning of ash trees is ongoing.

Figure 12. Hedge north of Children's wood planted in 1996 laid in 2006 (top) and as it is in 2021 (bottom)

1.2.2.3.4 Scrub and hedges

Hedgerows and bands of scrub are distributed across the plan area. On the north side of the hill they are botanically diverse and so appear to be relatively old. It is likely they were cleared (and kept clear for some decades) when the hill

forts were built in the 1860s. There is a substantial amount of scrub at the Fort Purbrook site.

Several hundred metres of hedge planting occurred in the 1990s in the Fort Widley area so that the plants are now tall. Even hedges that have been laid have had time to re-grow to a considerable height, see fig 12.

1.2.3 Cultural

1.2.3.1 Archaeology/past land use

The land described in this plan has a complex archaeology. As part of the HLS application process two Historic Environment Records have been produced [See Historic Environment Record 1](#) and [2.....](#)

1.2.3.1.1 Archaeology

The entire Portsdown Hill area is of archaeological interest any management that includes ground disturbance must have regard for underground features. A notable area of archaeological interest is near Candy's pit. The pit is very close to the site of a Long Barrow and an Iron Age enclosure. Like much of the rest of the Hill it is likely that the area once contained archaeological evidence from many different cultures. The expansion of the pit, road construction and other disturbance destroyed most of this evidence. Chalk extraction has occurred for several centuries and there is evidence of a lime kiln.

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 20th 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 a varied soil profile and surface layer.

1.2.3.1.2 Quarrying and re-landscaping

Several sites of chalk extraction occur across the plan area. Candy's pit and Widley Dell are largely wooded but recognizably the result of quarrying on closer inspection. The largest quarry is Paulsgrove chalk pit. Chalk extraction at occurred from at least the 1850's. A chalk pit of approximate 2 ha is shown on the 1857 6" to one mile map. It has expanded considerably since then, most notably during the 1970s when its chalk was used for motorway construction. The quarry was owned and operated by EEC at this time and has since passed into the ownership of Portsmouth City Council.

Most of the landscaping of Paulsgrove Chalk pit was carried out in two phases. The eastern section was levelled, top soiled and sown with a standard grass mix in the 1980s. Landscaping in the western section was carried out in 1998 as part of a house building scheme in the chalk pit. The chalk and quarrying waste was used to form an infill to create a sloping access to the northwest corner of the chalk pit. The planting specification had several recommendations to promote the establishment of calcareous grassland. They included the

limited use of seeds from elsewhere on Portsdown Hill and the mostly use of seeds from other chalk grassland sites in Dorset.

Areas of calcareous grassland that have established naturally in the chalk pit were scraped together prior to the landscaping work and redistributed after the landscaping work was completed.

1.2.3.2 Present land use

All sites are public open space. Pressure is concentrated around the main viewpoint car parks. Activities include dog walking, picnics and kite flying.

1.2.3.2 Past Conservation management

Conservation management of Portsdown Hill began in 1991 with the formation of the Portsdown Hill Countryside Management Project, which became the Portsdown Hill Countryside Service in 1997. Most efforts have gone into the restoration of the SSSI.

Work on non-SSSI land concentrated on maintaining access features and hedge planting. By the use of third parties some grassland management has been achieved though haymaking. Amendments to the amenity grass mowing regime were implemented by contractors responsible for the grass cutting and latterly by in house Parks staff. The area of land taken out of regular amenity mowing has been increasing year on year. See map, fig 12.



Figure 13 Land outlined in red has been taken out of the amenity mowing regime (as of 2021) and is allowed to grow through the summer. It is variously cut for hay or cut and cleared at the end of the season.

A 10-year Higher Tier Countryside Stewardship Scheme covering both the SSSI and most land described in this plan began in 2017. It funded and formalised the conservation management of many of the parcels of land outside the SSSI. It contained options and capital works aimed at promoting species-rich grassland, well-managed hedges and diverse woodland.

1.2.4 Environmental relationships which may have implications for management

1.2.4.1 Considerations of land to be managed as species-rich grassland

Historically most of the sites would have supported calcareous grassland. Much of this grassland has been disturbed and reseeded at some time in the past and has been mown for amenity purposes for many years. Other areas were cultivated for crops or short term grass leys.

Downland species were largely eradicated from the cultivated land and nutrient levels increased, thus the plants that grow back when the land is returned to conservation management tend to be vigorous species of limited conservation interest. The effects of post-war agriculture on biodiversity are described in Robinson and Sutherland, (2002). Before embarking on an attempt to re-establish calcareous grassland on former arable land it is important to know the levels of nutrients, especially phosphorous.

Repeated cultivation, plus the use of fertilisers and herbicides will have disturbed the soil structure. Characteristic grassland fungi will have been lost along with the effect of their mycorrhiza on plant/soil functioning. The most ecologically diverse grassland is known to be very old. It will obviously take many years for such disturbed ground to once again support a species rich downland plant community again.

The establishment and maintenance of calcareous grassland is greatly assisted by an appropriate level of grazing. Sheep, cattle and horses can all be used. Gibson, (1996); Bacon, (1990).

It has been noted that on land that was previously arable elsewhere on Portsdown Hill downland plant species established themselves within a few years, e.g. *Euphrasia nemorosa*, (Eyebright), *Lotus corniculatus*, (Birdsfoot trefoil), *Leontodon hispidus*, (Rough Hawkbit), *Trisetum flavescens*, (Yellow oat grass), *Clinopodium vulgare*, (Wild Basil).

Fragments of botanically diverse grassland remain in the amenity grassland. It is impractical to graze most of the sites due to heavy public pressure and small size, so it can be mown sympathetically, with arisings being removed, to prevent the build-up of nutrients and thus conserve its ecological interest. A small manoeuvrable tractor with a cut and collect mower is available.

The expanding presence of *Brachypodium pinnatum* (Tor Grass) in Paulsgrove chalk pit has reduced the diversity of the grassland. It appears to be spreading and has the potential to adversely affect the site.

The definition of species-rich can be taken from the DEFRA document [Assessment of eligibility for permanent grassland](#)

How to assess species richness to qualify as semi-improved or species-rich grassland or unimproved, at least 2 of the relevant thresholds for the criteria below must be met.

Criteria 1. Cover of rye-grass and white clover is 10%-30% (GS2/GS5), or less than 10% (GS6/OT2).

2. Cover of wildflowers and sedges is 10%-30% (GS2/GS5) or greater than 30% (GS6/OT2) (excluding creeping buttercup, white clover and injurious weeds).

3. There must be 9 species per square metre or greater (GS2/GS5) or 15 species per square metre or greater (GS6/OT2) identified - list the species identified and for wildflowers their frequency across the field parcel.

1.2.4.2 Arable plants

In land that was recently arable, notable arable plants have appeared. Habitat supporting these plants is rare and it is also of value to overwintering birds and invertebrates. In order to retain this habitat, designated areas will have to be cultivated annually to prevent grassland establishing.

1.2.4.3 Woodland

Where secondary woodland has developed it is dominated by *Acer pseudoplatanus* (Sycamore). Management aimed at encouraging other species (Ash, Elm, Holly, Hazel, Hawthorn), that are present in the woodland at the expense of the Sycamore would increase diversity. Following guidance, (Humphrey and Bailey, 2012), on the provision of dead wood habitats would also increase biodiversity. Dutch elm resistant strains have been planted in order to provide habitat for white-letter hairstreak butterflies. This may be of value in maintaining woodland structure should ash trees be afflicted by ash dieback.

1.2.4.4 Hedgerow and scrub



Figure 14 Paths by hedges have to be kept clear

Hedges and scrub are a valuable addition to the area's wildlife habitats. Nesting birds, reptiles, invertebrates and mammals benefit from this habitat, both as a place to complete their lifecycle and a means of connecting to similar habitats in the wider countryside. The existing hedgerow network is adequate on well-established sites, however on the recently acquired former arable land (Top Field) there is scope for an increase in both hedgerow and scrub.

1.2.4.5 Planting and reseeded provenance

When establishing vegetation, the importance of using suitable local provenance plant and seed sources has been well-stated, Ennos, 2000. All new material should be as local as possible to avoid issues with different morphology, phenology, biochemistry that reduce fitness and obscure the patterns in vegetation variation and its history. (Everett, 2002). Self-establishment, local transplanting, collection of seed elsewhere on the hill are the favoured techniques. The provenance of the hedges and trees planted in the early and mid-1990s is not known.

1.2.4.5 External considerations - climate change, wider landscape biodiversity and the maintenance of ecosystem services

Any land management plan must consider wider environmental issues, notably climate change and the loss of biodiversity from the surrounding landscape. It would be possible, but undesirable to have an effectively managed site with a disproportionately large carbon footprint or other polluting effects that failed to address loss of biodiversity in the adjacent area and beyond. Any land management must have reference to these issues, even if the land is managed for conservation. These issues are addressed at length in the SSSI management plan, 3.6.3

It is important to remove contamination and invasive species from the site and this approach should be encouraged on adjacent land as well. Harmful land use that results in agriculturally related contamination e.g. agrochemicals, excessive faecal bacteria/ phosphate/nitrogen, has no place on the site. Likewise, it should be discouraged in the neighbourhood. Tree planting should avoid the use of tree guards as they will either require removal and disposal or add plastic to the environment if they are left *in situ*. The considerations around using them or not are discussed by Chau *et al*, (2021).

There are stands of vegetation on the plan area and the SSSI that could be profitably used as a seed source for botanically impoverished sites within the plan area or on external sites in the local neighbourhood. Seed collection and green hay strewing has been used effectively and its continued use has many benefits. Bringing in material is to be avoided.

As the sites are not intensively managed for agriculture or recreation, the sites can be considered natural resources that provide ecosystem services to benefit the wider environment. The value of them should be defined and publicised.

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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

These sites can be considered valuable natural capital assets in that they generate obvious ecosystem services if they are maintained to support biodiversity.

A considerable value comes from the fact the sites are an extension of wildlife-rich habitat beyond the SSSI to other areas that are also managed for wildlife. The beneficial effect of calcareous grassland corridors is the most notable of these. The wider issues raised in Sutherland *et al* (2006) help place the evaluation in context.

The SSSI is positioned half way along the length of the hill and it therefore has the important role of acting as an ecological core 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 is important because it is one of the largest expanses of semi-natural vegetation on chalk in Hampshire. Most of this is accounted for by the SSSI, however land described in this plan adds to this area and connects it to other calcareous grassland sites, e.g. grasslands associated with Fort Nelson in the west and the Crookhorn area in the east.

2.1.1.2 Diversity

In addition to a range of grasslands there are hedges, chalk pits and wooded areas. Unusually on chalk, there is a pond.

2.1.1.3 Potential

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. Historical, archaeological and geographical principles can be conveniently conveyed on site.

2.1.1.4 Intrinsic value

The intrinsic value of the site is extremely high as it offers excellent views over to the north to the South Downs and south to Portsmouth, the Solent and Isle of Wight. Chalk grassland supports many attractive species, such as butterflies and colourful flowers. It is the nearest open countryside to the Portsmouth area and if accessibility is retained the public usage will almost certainly increase. The intrinsic value could be increased if a well-cared for attractive

environment were provided over the length of Portsdown Hill to complement the SSSI land. The value of such a large area of high-quality open space for mental and physical wellbeing is considerable.

2.1.3 Summary of Important Features

2.1.3.1 Vegetation

Botanically diverse, (largely calcareous) grassland is a prominent feature of the sites in this plan, the adjacent SSSI and the Portsdown Hill area. Historically it was dominant; today it is fragmented and appears alongside a mix of woodland, scrub and amenity grassland. The grassland can be enhanced and connected whilst maintaining other habitats which increase the area's biodiversity and aesthetics.

2.1.3.2 Species

Uncommon and characteristic species of plant and animal that are associated with lowland calcareous grassland are widespread. Surveys indicate that many taxa are well represented.

2.1.3.3 Access and recreation

Accessible pedestrian routes extend from entry points to form a network of paths that enable a visitor to enjoy wildlife and scenery in the context of a historically significant landscape.

2.1.4 Long-term /Ideal Management Objectives

Management is to be carried out for the foreseeable future with the following objectives

- 1. To maintain, improve, and increase the area of species-rich grassland**
- 2. To maintain and increase biodiversity on areas not managed as species-rich grassland**
- 3. To provide for public access, awareness, appreciation and educational use of the site except where it compromises objectives 1 and 2**
- 4. Incorporate wider environmental considerations into the plan by: ensuring climate change considerations are accounted for; opportunities to improve and connect biodiversity across Portsdown are defined and sought; ensuring land management is sustainable**

2.2 Factors influencing the achievement of long term management objectives

2.2.1 Owners objectives

The sites covered in the plan are entirely owned by the Portsmouth City Council. PCC's relevant service plan and Local Plan, (2012), propose that the land is set aside for conservation of biodiversity and public access.

2.2.2 Internal natural factors

There is a requirement to manage open grassland in order to maintain its conservation interest and to retain accessibility. Left alone any species-rich grassland will become rank and subsequently be overtaken by brambles and scrub. Bushes will block paths.

Several particularly invasive species are present, which are well known to spread effectively and thus dominate chalk grassland and thus reduce its diversity, e.g. Cotoneaster and tor grass. Sycamore is already the dominant tree, in wooded areas.

2.2.3 Internal human induced factors

The site has the status of public open space and has a high level of visitor usage concentrated in relatively small parts of the sites plan area. Litter, trampling, fires, vehicle usage, metal detecting and vandalism are issues that encumber management. The most significant factor is dog walking as it makes the use of grazing animals difficult without extensive measures. The adverse effects caused by dog waste, increased soil fertility and invertebrate poisoning from veterinary products are an issue.

2.2.4 Legislation and Obligations

The following obligations, among others have to be considered in carrying out any management operations:

The Health and Safety at Work Act 1974

Wildlife and Countryside Act 1981

Occupiers Liability Act

Ancient Monuments and Archaeological Areas Act 1979 (as amended);

Animal welfare and livestock regulations

Countryside and Rights of Way Act 2001

2.2.5 Physical Constraints

Unlike the adjacent SSSI the sites are relatively level therefore the use of tractor-based machinery is easier. However, the need to maintain site security hinders access.

2.2.6 Resources

Many areas of amenity grassland are managed via Portsmouth City Council's Parks established mowing arrangements. Amendments to these bring about considerable wildlife gain. Other areas of grassland are cut for hay and are cost neutral. There is sufficient access to necessary mowing machinery to maintain other grassland on the sites. A small manoeuvrable tractor with a cut and collect mower is available. However, constraints of time and weather make it difficult to carry out all operations at the optimal time.

Staff and contractor time, supplemented by volunteer input is sufficient to maintain the essential estate work.

There is no departmental budget from Portsmouth City Council for the implementation of this plan. Operational enhancements, such as mowing regimes on grassland outside the

amenity mowing area, tree work, hedge maintenance, scrub control, costs associated with establishing grazing, etc., require external funding.

2.2.7 Summary of factors influencing the achievement of long term objectives

Internal natural trends:

Decreasing biodiversity through scrub expansion in the absence of suitable management.

Resources:

The cost of mowing amendments to diversify grassland are within the budget of Parks department. The fine-grained management works such as; cut and clear, localised haymaking, seed collection/distribution, monitoring will be within the scope of the PHCS provided volunteer input remains high and external funding continues. There is a synergy with resources available to the adjacent SSSI.

Internal human-induced trends:

Pressure and constants arising from public access. Litter, vandalism and adverse effects on grassland from nutrient enrichment. Damage arising from recreation.

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 *i.e.* January 2026. The operational objectives present a route by which the long term objectives can ultimately be achieved.

2.3.1 Rationale and Operational Objectives

2.3.1.1 Consideration of long-term objectives to derive the Operational Objectives

Long term Objective 1 and 2

To maintain, improve, and increase the area of species-rich grassland

To maintain and increase biodiversity on those areas not managed for species-rich grassland

The first two long term objectives can be considered together as they require similar resources and both influence land use decisions that should reflect on historical and ecological factors that vary across the sites. It is possible to achieve these objectives as resources are in place. The outline prescriptions and projects should reflect the best way of achieving the objectives.

The prominence of botanically diverse, largely calcareous, grassland, across all the sites leads towards the presumption that the first management option should aim to enhance this habitat. Grassland dominates currently and historically.

Nationally and internationally, it is now an uncommon habitat that has undertaken a dramatic reduction in the last sixty years. The sites described in this plan are adjacent to, and share the same escarpment as, Portsdown Hill SSSI, the designation of which values its chalk grassland. The SSSI and this plan area are fragments of chalk grassland that once extended

over much of the hill. It is worth noting that other areas of calcareous grassland exist in land controlled by a variety of agencies across the top of Portsdown.

There exists a range of grassland types ranging from relatively untrampled diverse flower-rich sward to heavily used improved ryegrass dominated mown turf. The natural geology on the northern slopes gives rise to more neutral grassland and past soil deposition in other sites means chalk is overlaid with neutral soils giving rise to botanically diverse but non calcareous grassland. Management for species-rich grassland on the hill's free draining ground is the same whether it is calcareous or not.

There is little point trying to encourage species-rich grassland on the areas adjacent to the main car parks. The use of these areas for enjoyment of the view or making use of the facilities associated with the car park is an essential component of the Portsdown Hill experience for many visitors. Away from these areas diversification of the grassland should continue using the techniques described earlier, i.e., arable reversion to grassland, haymaking, cut and clear, minimal mowing collection and redistribution of seed. The proportion of grassland to other habitats should remain the same.

The proportion of land given over to woodland, scrub and hedges is high by the long term historical context. However, it contributes a variety of habitats and vegetative structure that supports a greater range of wildlife and in turn makes the hill a more interesting place to visit. It can be maintained at its current level. Hedges should be maintained with regard to best practice with minimal trimming and in the long term by hedge-laying. The habit of scrub is to encroach into adjacent grassland. In order to retain the scrub grassland proportions as they are, it requires ongoing scrub control.

Woodland structure and diversity should be managed to control the spread of invasive species and retain a range of ecological niches. There is a legitimate case for maintaining a network of characteristic lowland habitats other than, and in conjunction with, species-rich grassland. Being mindful of threats to native trees, e.g. ash dieback, diversifying the tree stock by planting disease resistant strains or even fruit trees should be further explored.

Long term Objective 3

To provide for public access, awareness, appreciation and educational use of the site except where it compromises other objectives

The provision of a safe and enjoyable access to the land assists with its wildlife conservation. Legitimate access discourages misuse. Also, it encourages respect and pride in the quality of the local environment. Maintained infrastructure, unobstructed paths and access points along with interpretation passively encourage people to explore the area. Guided walks, talks and interaction with specific groups e.g. Forest Schools further assists with this aim.

It will be necessary to keep rubbish under control with ongoing litter picking. It is a combined effort with Parks staff supplemented by PHCS volunteers and other volunteer agencies. Problems with undesirable behaviour, unauthorised encampments and vehicle access require barrier features to be maintained.

The utility infrastructure that occurs on site, e.g., buried service access covers can fail or be damaged and thus become dangerous. It should be possible to make safe by intervening, e.g. barriers, and informing the relevant agency.

In-house infrastructure such as fences, benches and steps should be maintained as necessary, directly or by engaging PCC staff.

The resources required to achieve the long term objective 3 are less than those associated with the previous objectives 1 and 2 and many of these are in place. Therefore, to some extent the long term objectives need not be modified. Many more resources could be used to produce ever more literature and signage, etc. There is no realistic upper limit to the objective, so as opportunities present themselves to achieve an increased public perception of the site they should be pursued.

Any promotion of recreation activities should avoid those that damage the vegetation and discourage people from walking.

Long term Objective 4

Incorporate wider environmental considerations into the plan by: ensuring climate change contributions are addressed; seeking opportunities to improve and connect biodiversity across Portsdown; ensuring sustainable land management is carried out

The intention is to ensure wider environmental concerns are addressed as management proceeds. This means assessing and mitigating contributions to climate change and other polluting activities and incorporating these considerations in operations. This means the climate change consequences of vegetation management and procurement should be accounted for in the projects. The aim will be to reuse, repair and recycle equipment. Where possible the same principle will apply to waste disposal. Parks cleansing team remove collected rubbish, however pre-sorting to various waste streams can reduce the impact of disposal.

Sustainable land use of the sites should be pursued. The value of the land as an ecological service provider should be defined and time spent doing this accounted for in the plan. These findings should feed into the promotion of the site.

Calcareous grassland and scrub habitats can be extended onto non-SSSI land within this plan. Habitats can be provided on non-SSSI land that wouldn't be possible on the SSSI, e.g. ponds, arable plants and tree planting. Integration of this management activity will considerably increase overall biodiversity of PCC land on Portsdown Hill.

It is appropriate to seek opportunities to achieve favourable wildlife conservation outcomes beyond the area of the plans that complements the work within the plans. It requires an assessment of the potential to join and enlarge wildlife-supporting land management across the Portsdown escarpment and encouragement of land managers to do this.

The above actions feature in the SSSI management plan, thus they can be carried out as part of that plan and referred to in this plan's register and any modifications relating to this site noted.

2.3.1.2 Operational Objectives

From the previous discussion the long-term Objectives are unmodified thus the Operation objective of the plan are:

- 1. To maintain, improve, and increase the area of species-rich grassland**
- 2. To maintain and increase biodiversity on those areas not managed for species-rich grassland**
- 3. To provide for public access, awareness, appreciation and educational use of the site except where it compromises objectives 1 and 2**
- 4. Incorporate wider environmental considerations into the plan by: ensuring climate change considerations are accounted for; opportunities to improve and connect biodiversity across Portsdown are defined and sought; ensuring land management is sustainable**

PART 3 ACTION PLAN

The operational objectives are achieved by the completion of a series of outline prescriptions each of which in turn is achieved through a group of projects. To enable comparison with other organisations projects have standardised codes and names written in a stylised form.

The project codes begin with R (record) M (management) or A (administration). A second letter subdivides them *e.g.* V (archive) F (flora). A number further subdivides codes to the level where the short stylised description of the project is added,

e.g. RV10 List/collect photographs ground

The project is further qualified by a site specific number and may be subdivided further with a short phrase. Unlike the project code, the project number and associated phrase are devised by the management planner. The final project identification may appear like this:

RV10/01 List/collect photographs ground - fixed point

3.1 Project register

The project register lists all projects within the hierarchical structure of:

Operational objective > Outline prescription > Project

The CMS handbook recommends a full description and details of costs, time spent, *etc.* This time consuming and rather precise approach is not possible within the management structure of this site. To prevent the unnecessary diversion of resources into providing and updating a detailed list of projects and the achievement of each project a simplified approach has been adopted see a simplified [project register, description and review](#)

3.3 Operational objectives and Outline Prescriptions

Operational Objectives	Outline prescriptions
Operational Objective 1 To maintain, improve, and increase the area of species-rich grassland	Outline prescription 1.1 Monitor habitats
	Outline prescription 1.2 Maintain, enhance species-rich grassland
Operational Objective 2 To maintain and increase biodiversity on those areas not managed for species-rich grassland	Outline prescription 2.1 Maintain, enhance habitat for arable plants Top Field
	Outline prescription 2.2 Maintain hedges and successional scrub
	Outline prescription 2.3 Maintain trees and woodland to conserve biodiversity
	Outline prescription 2.4 Investigate suitable sites for ponds
Operational Objective 3 To provide for public access, awareness, appreciation and educational use of the site except where it compromises other objectives	Outline prescription 3.1 Monitor public use of the site
	Outline prescription 3.2 Maintain footpaths and other access, interpretative features
	Outline prescription 3.3 Ensure the site is a pleasant, welcoming, safe place to visit
Operational Objective 4 Incorporate wider environmental considerations into the plan by: ensuring climate change considerations are accounted for; opportunities to improve and connect biodiversity across Portsdown are defined and sought; ensuring land management is sustainable	Outline prescription 4.1 Incorporate climate change prevention and adaptation into management projects
	Outline prescription 4.2 Facilitate improvements in biodiversity elsewhere on Portsdown Hill and in the local area
	Outline prescription 4.3 Incorporate sustainable land management practices into plan projects

Outline Prescription 1.1 Monitor habitats

Project code	Description	Delivery date
RF02/01 Collect data, monitor vegetation - carry out botanical survey/Top Field	Carry out Phase 2 vegetation survey on Top Field.	Once During Plan Period
RF03/02 Collect data, monitor vegetation - carry out botanical survey/ other sites	Carry out vegetation survey on sites. Produce a species list with abundance of species-rich grassland indicator species.	Once During Plan Period
RV10/01 List/collect photographs/	Photograph sites, record	Annually
RF62/01 Collect data, fungi, survey	Survey waxcap fungi note position on a map	As and when fungi are found

Outline Prescription 1.2 Create and maintain species-rich grassland

Project code	Description	Delivery date
AP10/01 Prepare / revise work programme	Produce annotated map of sites showing area of grassland (indicate species-rich/calcareous, neutral), hedges, regenerating scrub, woodland, arable plant habitat and path network. Indicate management regime on each feature.	Jan 2022
MH12/01 Manage habitat, grassland,	Augment grazing in Top Field by cutting and clearing rank vegetation. Remove arisings from site. Clear major accumulations of dung.	Annually as necessary

MH12/02 Manage habitat, grassland, by mowing	Cut and clear areas designated as species-rich grassland in AP10/01. Remove arisings through cut and clear or haymaking.	Annually
MH10/01 Manage habitat, controlled grazing, Top Field	Graze Top Field with no more than 1.0 livestock unit over 3 months from October - March.	Annually
ME01/01 Boundary structures - maintain fences and gates	Maintain fences and associated features necessary for grazing the Top Field.	As necessary
MG00/01 Husband grazing stock.	Check livestock daily when on site. Ensure all are in good condition and have water available. Assess level of fodder and ensure that livestock will be moved before they run out to avoid supplemental feeding. Follow animal welfare guidance and legislation.	As necessary when livestock are present
MH13/01 Manage habitat, grassland, by sowing/planting/ turf laying	Collect seed from desirable species and spread on botanically impoverished areas.	Annually

Outline prescription 2.1 Maintain, enhance habitat for arable plants Top Field

Project code	Description	Delivery date
MA07 Manage habitat, artificial, by ploughing	Cultivate 0.5 ha - the established area of Top Field	Late winter, annually

Outline prescription 2.2 Maintain hedges and successional scrub

Project code	Description	Delivery date
MH09 Manage habitat, woodland/scrub, by other activities	Trim hedges in accordance with guidance in Higher Tier agreement, and successor agreements. Maintain successional companion scrub through phased clearance. Encourage desirable species, discourage undesirable species.	Ongoing

Outline prescription 2.3 Maintain trees and woodland to conserve biodiversity

Project code	Description	Delivery date
MH02/01 Manage habitat, woodland/scrub, thinning/felling	Encourage species and habitat diversity by controlling species such as sycamore and holm oak where native species will benefit. Leave safe dead wood on site.	Ongoing
MH02/02 Manage habitat, woodland/scrub, thinning/felling Falklands Plantation	Reduce by 90% the presence of ash trees in Falklands Plantation to favour beech trees and maintain short, negotiable ground cover consistent with its role as a commemorative plantation	End of plan
MH01/Manage habitat, woodland/scrub, by planting/sowing	Collect seed/plants from desirable species and establish where they increase diversity.	Ongoing

Outline prescription 2.4 Investigate suitable sites for ponds

Project code	Description	Delivery date
MA07 Plan pond	Plan pond	Jan 2023

Outline prescription 3.1 Monitor public use of the sites

Project code	Description	Delivery date
RH03 Collect data, human impact, count/estimate/measure/census	Produce report on numbers of visitors to site	Within plan period
RH02 Collect data, human impact, monitor	Report litter, damage, vandalism, antisocial behaviour	Ongoing

Outline prescription 3.2 Maintain footpaths and other access, interpretative features

Project code	Description	Delivery date
ME40/01 Provide/maintain paths/rides/roads	Keep paths passible, by mowing and cutting back encroaching scrub. Use work plan from AP10/01 to define works	Ongoing
ME02/01 Other structures / seat and signs.	Seating near car parks repaired as necessary. Maintain interpretation.	Ongoing

Outline prescription 3.3 Ensure the site is a pleasant, welcoming, safe place to visit

Project code	Description	Delivery date
ME02/02 Other structures / bunding	Prevent car parking off Widley Walk with bunding to discourage undesirable behaviour	Jan 23
ME04 Remove rubbish	Clear litter from site through regular litter picks, facilitate community litter picks.	When necessary
MI10 Inform visitors, onsite information	Install and maintain signage to welcome visitors to the site and remind them of the	June 22

	requirements not to damage the area. New interpretation in Paulsgrove chalk pit Remind people of bylaws regarding dogs, metal detecting and camping.	

Outline prescription 4.1 Incorporate climate change prevention and adaptation into management projects

Project code	Description	Delivery date
AR01/01 Prepare report, project review, new projects	Assess the contribution to climate change from management activities, making reference to Local Authority Carbon Neutral targets. Describe how impacts can be reduced.	March 22
AR01/02 Prepare report, project review, new projects	Assess how adaptation to climate change is met by proposed management. Examine if factors such as shade provision and ground infiltration rate can be improved.	March 22
AP10/02 Prepare/revise work programme	Implement findings from AR01/01 - /02 into Work plan AP10/01	April 22

Outline prescription 4.2 Facilitate improvements in biodiversity elsewhere on Portsdown Hill and in the local area

Project code	Description	Delivery date
AR01/03 Prepare report, project review, new projects	Assess how better ecological networks can be achieved across rest of Portsdown and the local area. Produce map to show potential amendments to external	March 23

	land management areas. Show how ecological connections with SSSI and this plan area might be improved.	
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Outline prescription 4.3 Incorporate sustainable land management practices into plan projects

Project code	Description	Delivery date
AR01/04 Prepare report, project review, new projects	Assess how management projects affect pollution, ecosystem functioning. Describe any improvements that can be made. Feed into AP10/01	March 23

Appendix 1 Higher tier stewardship options

Parcel Number	Option Code	Option Title	Total Parcel Area ha	Option Area/length	area length	Option Duration	Option Start Date	Option End Date
5096	BE3	Management of hedgerows	1.0808	370	m	5	01/01/2017	31/12/2021
1074	BE3	Management of hedgerows	0.4583	350	m	5	01/01/2017	31/12/2021
2345	BE3	Management of hedgerows	0.6249	210	m	5	01/01/2017	31/12/2021
5096	GS6	Management of species-rich grassland	1.0808	0.44	ha	5	01/01/2017	31/12/2021
8553	GS6	Management of species-rich grassland	1.7046	0.35	ha	5	01/01/2017	31/12/2021
8558	GS6	Management of species-rich grassland	0.3371	0.27	ha	5	01/01/2017	31/12/2021
5157	GS7	Restoration towards species-rich grassland	9.8871	1.45	ha	10	01/01/2017	31/12/2026
9967	GS7	Restoration towards species-rich grassland	4.6066	1.79	ha	10	01/01/2017	31/12/2026
2530	GS7	Restoration towards species-rich grassland	1.8801	0.7	ha	10	01/01/2017	31/12/2026
5157	WD7	Management of successional areas and scrub	9.8871	1.41		5	01/01/2017	31/12/2021
8432	WD7	Management of successional areas and scrub	2.1964	1		5	01/01/2017	31/12/2021

Appendix 2 Soil analysis 2016

Paulsgrove chalk pit

Analysis	Result	Guideline	Interpretation	Comments
pH	7.9	6.5	High	Possible interference on availability of P, K, Mn, B, Cu, Zn and Fe.
Phosphorus (ppm)	7	26	Very Low	(Index 0.7) 120 kg/ha P2O5 (96 units/acre).
Potassium (ppm)	80	241	Low	(Index 1.3) 80 kg/ha K2O (64 units/acre).
<u>Magnesium (ppm)</u>	55	50	Normal	(Index 2.0) Adequate level.
Organic Matter DUMAS (%)	2.2	3.0	Slightly Low	Incorporate organic material when possible.

Two Dells trail Mill Lane

Analysis	Result	Guideline	Interpretation	Comments
pH	7.7	6.5	High	Possible interference on availability of P, K, Mn, B, Cu, Zn and Fe.
Phosphorus (ppm)	5	26	Very Low	(Index 0.5) 120 kg/ha P2O5 (96 units/acre).
Potassium (ppm)	104	241	Low	(Index 1.7) 80 kg/ha K2O (64 units/acre).
<u>Magnesium (ppm)</u>	67	50	Normal	(Index 2.3) Adequate level.
Organic Matter DUMAS (%)	5.4	3.0	Normal	Adequate level.

Childrens Wood

Analysis	Result	Guideline	Interpretation	Comments
pH	8.0	6.5	High	Possible interference on availability of P, K, Mn, B, Cu, Zn and Fe.
Phosphorus (ppm)	10	26	Low	(Index 1.1) 80 kg/ha P2O5 (64 units/acre).
Potassium (ppm)	95	241	Low	(Index 1.5) 80 kg/ha K2O (64 units/acre).
<u>Magnesium (ppm)</u>	59	50	Normal	(Index 2.1) Adequate level.
Organic Matter DUMAS (%)	7.6	3.0	Normal	Adequate level.

Farlington Avenue

Analysis	Result	Guideline	Interpretation	Comments
pH	8.0	6.5	High	Possible interference on availability of P, K, Mn, B, Cu, Zn and Fe.
Phosphorus (ppm)	7	26	Very Low	(Index 0.7) 120 kg/ha P2O5 (96 units/acre).
Potassium (ppm)	56	241	Very Low	(Index 0.9) 120 kg/ha K2O (96 units/acre).
<u>Magnesium (ppm)</u>	54	50	Normal	(Index 2.0) Adequate level.
Organic Matter DUMAS (%)	3.4	3.0	Normal	Adequate level.