



Berry Head visitor, scrub & grazing plan



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1. Introduction

Background to work

- 1.1 The Berry Head to Sharkham Point component of the South Hams SAC is designated for its European dry heaths¹; semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*)¹; vegetated sea cliffs of the Atlantic and Baltic coasts²; caves not open to the public²; *Tilio-Acerion* forests of slopes, screes and ravines²; and Greater Horseshoe Bat (*Rhinolophus ferrumequinum*)³.
- 1.2 A report by Footprint Ecology (Lake & Liley 2014) identified that the level of growth proposed by the Torbay Local Plan⁴ could realistically increase the recreational pressure on the SAC habitats. The habitats of the SAC are known to be susceptible to degradation through scrub invasion, erosion by walkers and eutrophication through dog fouling. The report concludes that the potential of significant effects cannot be ruled out and mitigation measures will be necessary. It also suggests that there is a zone of influence of new development of approximately 5km driving distance, roughly equivalent to development in the SDB1 Brixham Peninsula policy area of the Torbay Local Plan. Potential mitigation measures outlined in the report are:
- the development of a detailed management plan addressing habitat management and visitor use;
 - habitat management to increase the resilience of the site over and above that already required to maintain the interest features of the site;
 - increased visitor engagement work; and
 - management work at Sharkham Point to provide an alternative location here for dog-walkers if visitor surveys suggests this may be effective.
- 1.3 In advance of significant future development (for example 173 new dwellings are proposed at the Wall Park site adjacent to Berry Head); Torbay Coast and Countryside Trust (TCCT) therefore commissioned a baseline vegetation survey of the distribution and condition of the sensitive Annex I habitats within the SAC, a visitor survey, and the production of a detailed management plan addressing habitat management and visitor use.
- 1.4 The objectives of the vegetation survey were to update the results from previous vegetation surveys (Wheeler, Wilson & Reed 2009, Wilson 2008; Wilson 2009; Byfield 2011) to help inform the preparation of a habitat and visitor management plan for the site, to provide baseline data on the distribution and condition of plant communities

¹ Annex I habitats that are a primary reason for selection of this site.

² Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site.

³ Annex II species that are a primary reason for selection of this site.

⁴ Torbay Council. [Adopted Torbay Local Plan \(December 2015\)](#)

and to establish an annual monitoring framework to allow comparison against the baseline. The vegetation survey has been completed and reported on (see Wilson & Wheeler 2016).

- 1.5 The objectives of the visitor survey were to understand how visitors currently use the site, to understand how visitor use may be able to be influenced in the future (potentially through the use of zoning and creation of exclusion zones) and to enable confirmation of the zone of influence. This work has also been completed and is reported on separately (see Panter & Lake 2016)
- 1.6 This report comprises the scrub management, visitor management and grazing plans based on the findings of the visitor survey and vegetation survey, plus aerial photographs and discussions with TCCT staff. It distinguishes between the habitat and visitor management required to maintain the interest features of the site based on current levels of recreation, and those additional measures required to mitigate the impacts of future development based on the level of growth proposed by the Torbay Local Plan adopted in December 2015.

Berry Head - context

- 1.7 A brief overview of Berry Head summarising key points relevant in this context is provided here - see the current management plan (Torbay Coast and Countryside Trust 2007) and SSSI citation⁵ for further information. Berry Head is a high limestone headland supporting open limestone and neutral grassland, maritime cliff communities, scrub, woodland and a small area of limestone heath. The Berry Head component of the South Hams SAC also includes the cliffs of St Mary's Bay and Sharkham Point. Here, the underlying geology changes from limestone to Devonian slates, mudstones and limestone and generally support a less distinctive flora.
- 1.8 A Napoleonic fort (North Fort), a coastguard lookout and lighthouse are located on Berry Head and a secondary fort (The Old Redoubt) is located to the south. The northern side of the headland has been extensively quarried for limestone and the quarry walls fall almost vertically almost to sea level. Areas of hardstanding are still in place between the quarry and the sea, but the quarry floor itself has been vegetated by scrub and grass, and the caves support a population of Greater Horseshoe Bats.
- 1.9 The area between the two forts consists of an exposed sea cliff-top plateau supporting limestone grassland (some of it sheep grazed) and dense scrub. On the seaward side of the plateau, the ground generally slopes steeply down towards the top of the sea cliffs and is vegetated with maritime cliff communities and scrub. Inland of the maritime plateau, there is an area of mown grassland adjacent to the car park, which is used as an amenity area by visitors. This area is visually enclosed by an area of scrub to the south, a band of scrub to the east on the landward edge of the maritime plateau, and an area of broadleaf woodland edged by scrub to the north and west. Beyond this, a

⁵ http://www.sssi.naturalengland.org.uk/citation/citation_photo/1001416.pdf

continuation of the approach road to Berry Head leads down a moderately steep wooded combe to the Berry Head Hotel and into the eastern edge of Brixham.

- 1.10 The areas of open grassland and cliff slope support rich and diverse plant communities characteristic of limestone, including a community possibly unique to Berry Head. Species present include the rare White Rock-rose *Helianthemum appenninum*, Portland Spurge *Euphorbia portlandica*, Rock Sea-lavender *Limonium binervosum*, Goldilocks Aster *Aster linosyris*, Rock Stonecrop *Sedum forsterianum* and Blue Fescue *Festuca longifolia*. Areas of short turf also support the rare Honewort *Trinia glauca*, Small Hare's-ear *Bupleurum baldense* and Small Restharrow *Ononis reclinata*. Several species with a restricted distribution in Devon occur, including Wild cabbage *Brassica oleracea* and Autumn squill *Scilla autumnalis*.
- 1.11 Within the woodland and scrub on the western side of the plateau, more acidic conditions have enabled a small area of limestone heath to develop, with Heather *Calluna vulgaris* and Bell Heather *Erica cinerea* and much Bramble *Rubus fruticosus*, Bracken *Pteridium aquilinum* and European and Western Gorse (*Ulex Europaeus* and *U. galli*).
- 1.12 The closed-sward maritime grassland, scrubby grassland, rock outcrops, heathland and calcareous seepages all support populations of key invertebrates. Many of these are particularly associated with south-facing maritime grassland with patches of bare ground. Cattle-grazed areas are important in helping to provide a foraging resource for Greater Horseshoe Bats.
- 1.13 Trends in species richness and size of populations of rare plants have suggested that the quality of the limestone grassland is declining (e.g. Torbay Coast and Countryside Trust 2007). This decline is thought to be due to the lack of grazing in the 20th Century (both agricultural and rabbits), which has resulted in the rapid spread of scrub and woodland. Another issue is erosion and trampling by walkers (and in the past also vehicles) and eutrophication (enrichment) of the soils from dog faeces and urine. TCCT have installed a surfaced path in one of the most eroded areas, and encourage dog-walkers to pick up dog faeces, but this is not always adhered to, particularly when staff are not present.

2007- 2017 Management plan

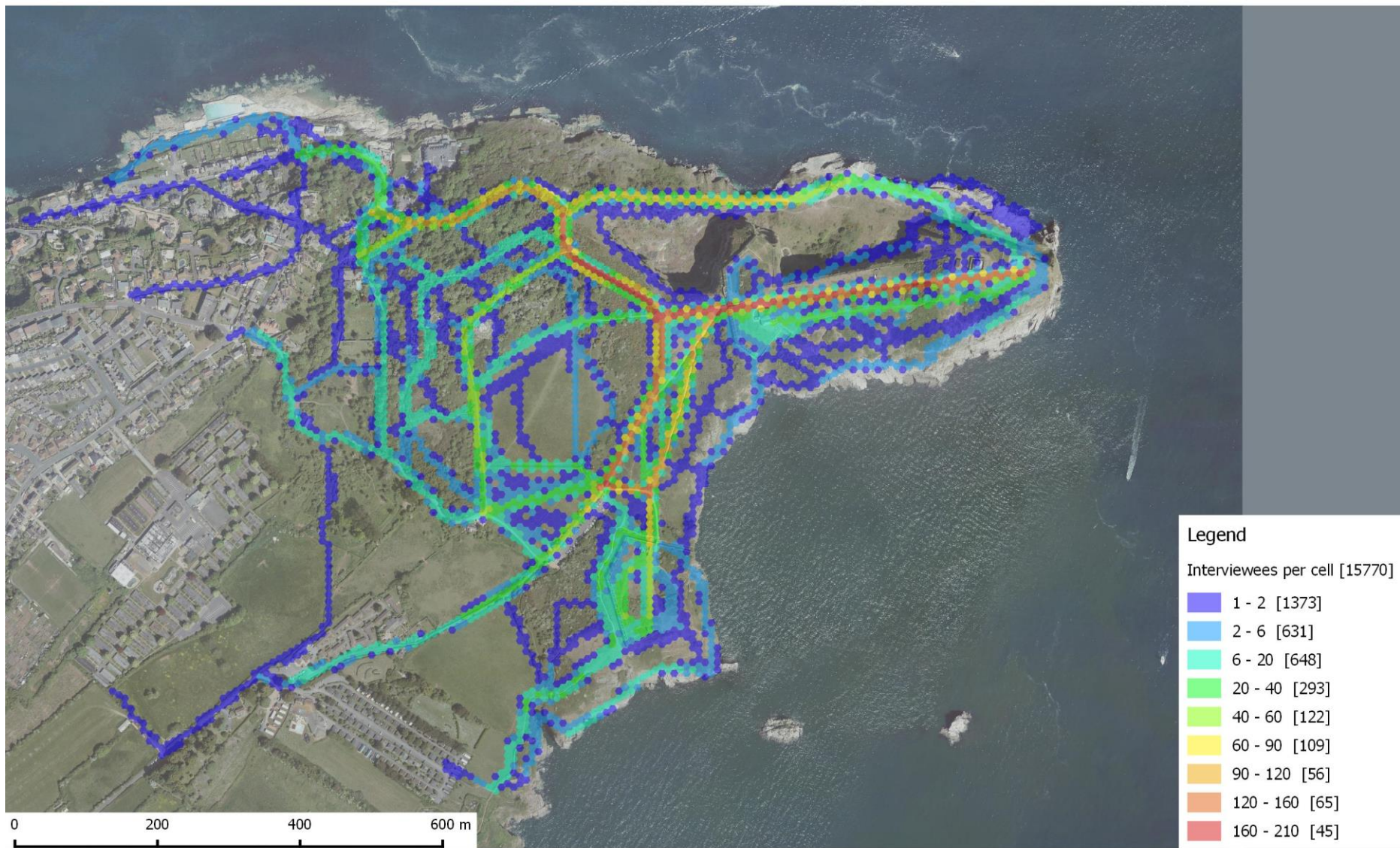
- 1.14 Following comprehensive consultations and research, a management plan for the period 2007-2017 for Berry Head was prepared by the Torbay Coast and Countryside Trust (TCCT) and has been formally adopted by the TCCT, Berry Head Forum and Torbay Council.
- 1.15 The plan gives a detailed description of the history, archaeology, earth heritage, biodiversity, and landscape of the site and includes as an Appendix, an access, audience development and interpretation plan to take account of the importance of the site for between 100-200,000 visitors each year.

- 1.16 The plan notes that the trends in heritage condition are not favourable with the archaeology, biodiversity and landscape of the site in need of increased conservation. The plan describes how the calcareous grassland plant and invertebrate communities are vulnerable to scrub invasion following a decline in grazing from the 1940s, erosion due to visitor trampling, and dog fouling. The small area of heathland is also suffering from a lack of grazing and growth of gorse scrub. However, it is recognised that scrub is also a valuable habitat in its own right, not only for invertebrates but also for breeding birds including the rare Cirl Bunting *Emberiza cirlus*. In addition, scrub and woodland removal has to be carried out with aspects of landscape conservation in mind.
- 1.17 Grazing is needed not only to conserve the valuable calcareous plant and invertebrate communities but also for the benefit of the colony of Greater Horseshoe bats *Rhinolophus ferrumequinum* which forage over grazed habitats, while scrub clearance is also needed but in a way that maintains a mosaic for the conservation of a wider flora and fauna. At the same time ways need to be found to reduce the impact of visitors whilst still catering for the needs of the large number who visit, enjoy and value Berry Head.

Current visitor use

- 1.18 A visitor survey was carried out in July-August 2016 (see Panter & Lake 2016). This found that most visitors to Berry Head were local, although about one third had come from further afield. Most visitors were dog walkers or walkers, and had come to Berry Head because of the views and scenery. People also came for fishing, outings with family, and a variety of other activities. For those who visited regularly, previous experience was a key factor in their choice of route, while factors were more varied for first time visitors. There was little indication that visitors would be interested in visiting alternative nearby sites, but most said they would be willing to consider alternative routes at Berry Head, if these allowed them access to key areas such as the forts, quarry and woodland, and if they had sea views and natural surfacing.
- 1.19 Visitors were asked to map their routes, and a map showing relative intensity of use was created (see Map 1). For further detail regarding visitor use of the site please see Berry Head Visitor Survey - Summer 2016 (Panter & Lake 2016).

Map 1: Density of interviewees routes recorded per 15 m hexagonal grid cell.



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10 year s106 agreement for Wall Park development

- 1.20 Torbay Council have secured an s106 agreement for the Wall Park development in Brixham in relation to the likely impacts of increased recreational pressure on the Berry Head component of the South Hams SAC as a result of the development. Over a ten year period, this will cover the following:
- Baseline Vegetation Survey (completed - see Wilson & Wheeler 2016)
 - Production of scrub clearance, grazing and visitor management plan (this plan)
 - On-going (annual) vegetation monitoring
 - Review of the management plan in years 5 and 10 of the plan
 - Visitor Engagement (exact measures may vary slightly from below) including:
 - Design, printing and installation of 5 interpretation boards to help direct visitors, provide zoning of the site and raise awareness of impacts associated with recreation (includes re-design and replacement in Year 10)
 - Monthly guided walks for new community to raise awareness of sensitivity of site
 - Annual leaflet for new community to provide information about sensitivity of site and notifying them of guided walks etc. where they can find out more
 - Habitat Management: new grazing compartment on the south facing slopes including the south fort
- 1.21 The current status of habitats and plant species at Berry Head and specific management recommendations are summarised in section 2 below. This information is then used together with information from the 2016 visitor survey to outline management plans for visitors, scrub and grazing in relation to recreational impacts in the following sections.

2. Summary of current status of habitat and species at Berry Head

Vegetation communities

- 2.1 The 2016 vegetation survey (see Wilson & Wheeler 2016) describes the vegetation in each of the SSSI units and maps the various National Vegetation Classification communities. It also identifies areas of ecological sensitivity and provides the location and population status of 20 nationally rare and scarce plant species. Within Unit 1 (the bulk of Berry Head, excluding the quarry – see Map 2), the report identifies 2.23 ha of calcareous grassland, a further 0.68 ha of calcareous grassland/scrub mosaic, and 0.27ha of severely degraded calcareous grassland. Only 1.06 ha of calcareous grassland is considered to be in good condition. Around 0.58 ha of calcareous grassland is also present in Unit 8 (the quarry) in a mosaic with scrub, and some is of good quality. Above the sea cliffs, 5.35 ha of maritime cliff vegetation is present and a further 0.74 ha of maritime grassland/scrub mosaic. Overall, 9.91ha of calcareous grassland and maritime cliff vegetation is present over the whole site (including Sharkham Point); 1.2 ha of this includes scrub mosaics.
- 2.2 The calcareous grassland and maritime cliff communities are described briefly in Table 1 for ease of reference. Again, reference is made to scrub invasion, trampling and grazing where this information is available. Vernacular names for communities follow Rodwell (Undated) and for plants Stace (2010). Full descriptions can be found in Rodwell 1992 and 2000.

Table 1: Summary of NVC communities that make up the Annex I habitats found at Berry Head.

Community	English name	Brief description and key species
Annex I habitat: 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>)		
CG1b <i>Festuca ovina</i> - <i>Carlina vulgaris</i> grassland <i>Scilla autumnalis</i> - <i>Euphorbia portlandica</i> sub-community	Rockrose rocktop	<ul style="list-style-type: none"> • Very localised sub-community considered unique to Berry Head • Comprises short, fragmented turf of Sheep's Fescue <i>Festuca ovina</i> scattered with Autumn Squill <i>Scilla autumnalis</i> and Portland Spurge <i>Euphorbia portlandica</i> on dry, thin soils • Rare and scarce species here include Honework <i>Trinia glauca</i>, White Rockrose <i>Helianthemum apenninum</i>, Small Hare's-ear <i>Bupleurum baldense</i>, Dwarf Mouse-ear <i>Cerastium pumilum</i>, Early Gentian <i>Gentianella anglica</i>, Autumn Squill, Rock Stonecrop <i>Sedum forsterianum</i>, Small Restharrow <i>Ononis reclinata</i>, Autumn Gentian <i>Gentianella amarella</i>. • 11 patches mapped totalling 1.15 ha. • <i>Openness primarily controlled by physical characteristics of substrate, but grazing can maintain low grass cover and reduce scrub invasion (e.g. rapidly developing bird-sown scrub in crevices, slow expansion of scrub from adjacent deeper soils). Can become eroded with over-trampling</i>
CG2a <i>Festuca ovina</i> - <i>Avenula pratensis</i> grassland <i>Cirsium macraule</i> - <i>Asperula cyananchica</i> subcommunity	Oat-grass pasture	<ul style="list-style-type: none"> • More widely distributed. • A continuous, closed, short and springy sward of fine grasses (Sheep's Fescue and Meadow Oat-grass <i>Avenula pratensis</i>). Rosette-forming herbs and sprawling small woody species are frequent; Salad Burnett <i>Sanguisorba minor</i>, Crested Hair-grass <i>Koeleria macrantha</i> and Glaucous Sedge <i>Carex flacca</i> are usually constant. Found on natural and artificial slopes over deeper, calcareous soils • Rare and scarce species here include Dwarf Mouse-ear <i>Cerastium pumilum</i>, Early Gentian <i>Gentianella anglica</i>, Nit Grass <i>Gastridium ventricosum</i> • 10 patches mapped at Berry Head totalling 1.41 ha. • <i>Community is generally dependent on a degree of rabbit/sheep grazing. Over trampling and eutrophication leads to impoverished mesotrophic swards.</i>
CG3 <i>Bromus erectus</i> grassland	Brome pasture	<ul style="list-style-type: none"> • Rank, tussocky grassland typical of areas with low levels of grazing, widely distributed on lowland limestone. Less species-rich. • Constant species include Upright Brome <i>Bromus erectus</i>, Glaucous Sedge, Sheep's Fescue, Bird's-foot Trefoil <i>Lotus corniculatus</i>, Ribwort Plantain <i>Plantago lanceolata</i>, Salad Burnett. • No rare species generally associated with this community, although records of both Autumn Squill and White Rockrose were made at Berry Head. • 4 patches mapped at Berry Head totalling 0.29 ha. • <i>Derived from CG2 as a result of lack of grazing. Hard grazing may be required to reverse change; spring cutting may control Upright Brome.</i>

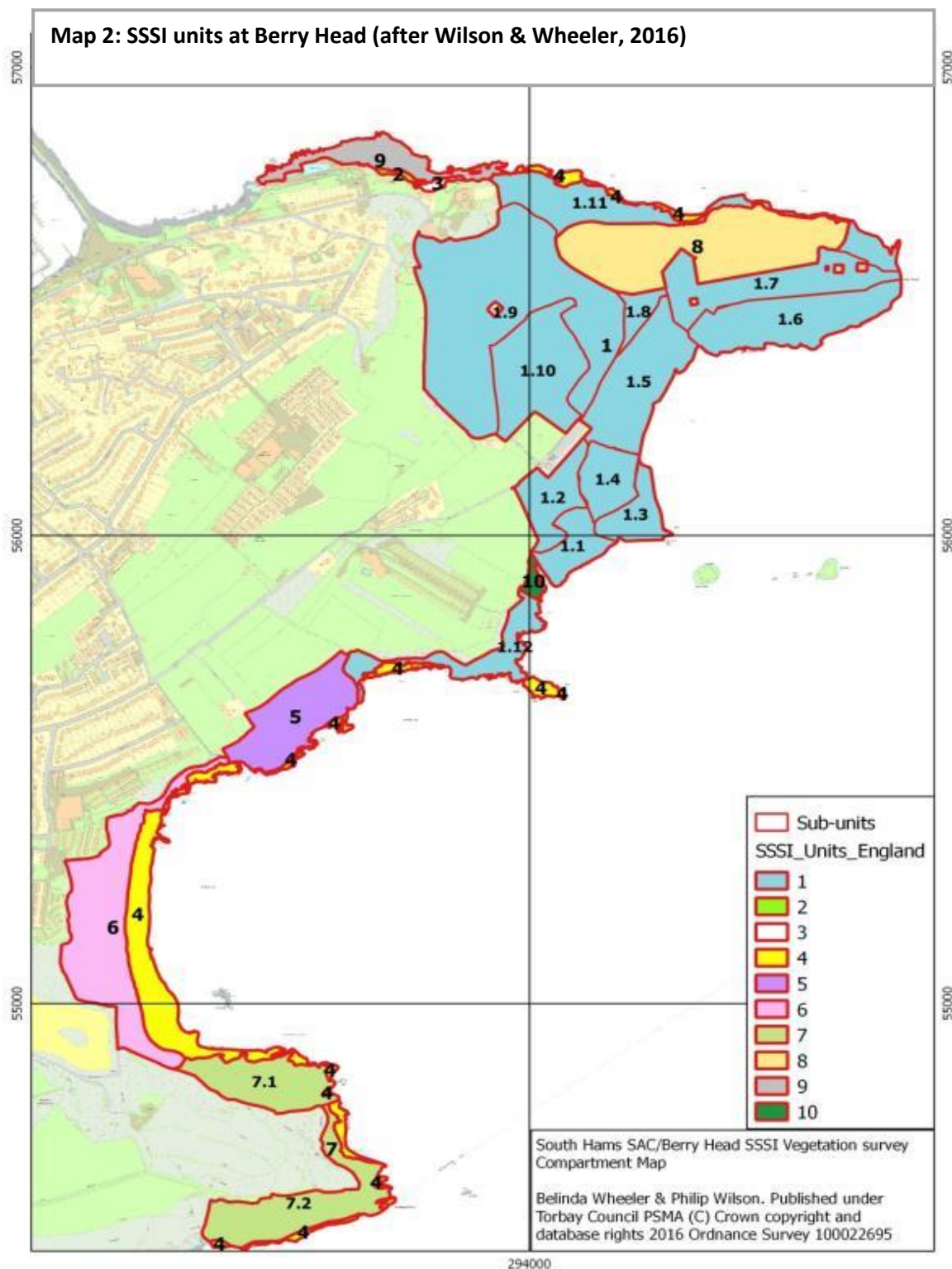
BERRY HEAD VISITOR, SCRUB & GRAZING PLAN

Community	English name	Brief description and key species
CG6 <i>Avenula pubescens</i> grassland	Downy oat-grass pasture	<ul style="list-style-type: none"> • Another rank, tussocky grassland typical of areas with low levels of grazing, widely distributed on more mesotrophic, moist soils on lowland limestone. Again, less species-rich. • Constant species include Meadow Oat-grass, Downy Oat-grass <i>Avenula pubescens</i> Red Fescue <i>Festuca rubra</i>, Common Bird's-foot-trefoil, Dandelion, Neat Feather-moss <i>Pseudoscleropodium purum</i>. • No rare species recorded within CG6 at Berry Head. • 7 patches mapped at Berry Head, totalling 0.07 ha. • Community dependent on adequate supply of nitrogen (e.g. possibly from deeper plateau soils, but also dog faeces and urine). May be derived from CG2 through lack of grazing.
Annex I habitat: 1230 vegetated sea cliffs of the Atlantic and Baltic coasts		
MC1 <i>Crithmum maritimum</i> - <i>Spergularia rupicola</i> maritime crevice community	Rock Samphire cliff crevice	<ul style="list-style-type: none"> • Widely distributed on the south and west coasts; low-growing, scattered cover of perennials such as Rock Samphire <i>Crithmum maritimum</i>, Rock Sea-spurrey <i>Spergularia rubicola</i>, Red Fescue and Thrift <i>Armeria maritima</i> • No rare species recorded at Berry Head. • 7 patches mapped at Berry Head, totalling 0.07 ha. • Occupies most maritime zone, maintained through salt spray and exposure where suitable crevices are available.
MC5d <i>Armeria maritima</i> - <i>Cerastium diffusum</i> ssp. <i>diffusum</i> community <i>Arenaria serpyllifolia</i> sub-community.	Sea Mouse-ear rock top	<ul style="list-style-type: none"> • Most frequent on the Channel coast, found in crevices and around outcrops where skeletal soils support a short, open turf with tussocks of Red Fescue, also Cock's-foot, Thyme-leaved Sandwort <i>Arenaria serpyllifolia</i>, Biting Stonecrop <i>Sedum acre</i>, <i>Bromus hordeaceus</i> subsp. <i>ferronii</i>. • No rare species recorded at Berry Head. • 4 patches associated with spoil mapped at Berry Head, totalling 0.17 ha; 1 patch at Sharkham Point of 0.03 ha. • Generally ungrazed (out of the reach of livestock) maintained by physical environment.
MC11 <i>Festuca rubra</i> - <i>Daucus carota</i> ssp. <i>gummifer</i> maritime grassland MC11a <i>Bromus hordeaceus</i> subsp. <i>ferronii</i> subcommunity MC11b <i>Ononis repens</i> subcommunity MC11c <i>Sanguisorba minor</i> subcommunity	Wild Carrot cliff grassland	<ul style="list-style-type: none"> • Found on calcareous sea cliffs where rendzina soils deeper, characterised by short tussocky sward • Constant species are generally Red Fescue, Cock's Foot, and Sea Carrot <i>Daucus carota</i> ssp. <i>Gummifer</i>, also Thrift and <i>Bromus hordeaceus</i> subsp. <i>ferronii</i> (MC11a); Common Restharrow <i>Ononis repens</i> (MC11b) and Ribwort Plantain and Salad Burnet (MC11c). • Rare and scarce species here include: Autumn Squill, Small Restharrow (MC11a); Toothed Medick <i>Medicago polymorpha</i>, Dwarf Mouse-ear, White Rock-rose, Honewort, Blue Fescue <i>Festuca longifolia</i> (MC11b); Rock Stonecrop, White Rock-rose, Lesser Meadow-rue <i>Thalictrum minus</i>, Autumn Squill, Bulbous Meadow-grass <i>Poa bulbosa</i>, Goldilocks Aster <i>Aster linosyris</i> (MC11c) • M11a - 3 patches totalling 0.56 ha at Berry Head; M11b - 7 patches, 1.17 ha at Berry Head, 0.26 at Sharkham; M11c - 9 patches, 3.01 ha at Berry Head.

BERRY HEAD VISITOR, SCRUB & GRAZING PLAN

Community	English name	Brief description and key species
		<ul style="list-style-type: none"> Characteristic of less maritime situations, but confined to thin rendzina soils of calcareous sea cliffs; <i>sometimes grazed which presumably reduces the dominance of grasses</i>. <i>Sanguisorba</i> subcommunity occurs on more moist, stable soils.
Annex I habitat: 4030 European dry heaths		
H8c <i>Calluna vulgaris</i> - <i>Ulex gallii</i> Heath, <i>Sanguisorba minor</i> sub-community	Western gorse dry heath	<ul style="list-style-type: none"> Typically found growing on drift over calcareous soils with Western Gorse <i>Ulex gallii</i>, also Heather <i>Calluna vulgaris</i>, Bell Heather <i>Erica cinerea</i>, Salad Burnet and other more calcareous species Rare species at Berry Head: Lesser Meadow-rue One patch of 0.31 ha surrounded by scrub <i>Requires scrub control and grazing to maintain and increase open vegetation.</i>

- 2.3 Here we provide a summary of vegetation for the SSSI units within which the Annex I habitats present are found. These are based on the vegetation and rare plant survey, supplemented with information from two site visits (June 27th and November 2nd, 2016). Particular reference is made to their condition in relation to trampling, grazing and scrub encroachment (*in underlined text*) and management recommendations are given. Map 2 shows the location of the SSSI units and sub-units. NVC maps can be found in Wilson and Wheeler (2016).



Unit 1.1 - Rabbit Lawn

- 2.4 Good condition, suitable amount of trampling and rabbit grazing to maintain open conditions. However, individual plants are showing trampling damage and less trampled plants at top of cliff slope appear healthier. White Rock-rose, Honewort, Lesser Restharrow and Small Hare's-ear all present. Scrub encroachment at landward margins should be controlled. Measures to prevent an increase in trampling would be beneficial.

Unit 1.2 - between Rabbit Lawn, South Fort and car park

- 2.5 Mixed scrub, diverse age structure, some clearings, little visitor pressure. Clearing in west supports Bracken and Bluebell; eastern clearing is invaded by Clematis *Clematis vitalba*, Hawthorn *Crataegus monogyna* and *Viburnum*, but remaining grassland glades and rides have Lesser Meadow-rue and have potential to be species rich if grazed/cut and could be expanded.

Unit 1.3 - cliff slope S. and E. of South Fort

- 2.6 Maritime cliff vegetation is species-rich on parched upper slopes, less so on lower slopes. Rocky outcrop supports CG1b with Autumn Squill and White Rock-rose, area also supports Blue Fescue and Lesser Meadow-rue. Visitor pressure limited to path at top of slope. Invasive scrub (Blackthorn) is a problem; area would benefit from grazing. (Scrub on E slope thought unlikely to play important role in screening nearby seabird colony on cliffs).

Unit 1.4 - South Fort.

- 2.7 Deeper soils on banks support CG2. Invading scrub is controlled by annual cutting. Flat areas support CG1, mostly in favourable condition. Open conditions are maintained by trampling, but parts are badly trampled and eroded (viewpoint in SE corner is popular). Early Gentian not seen since 1990s but Honewort, Autumn Lady's-tresses, Bulbous Meadow-grass and Autumn Squill all present. Nutrient enrichment is a problem - Perennial Rye-grass and Crested Dog's-tail signal a move towards more mesotrophic grassland of the type surrounding the buildings in the south of the fort. Measures needed to prevent further trampling damage while maintaining beneficial effects. Grazing could reduce need for annual cutting (freeing up staff time for visitor engagement work), but potential for livestock erosion of historic features should be assessed. Scrub encroachment on the banks and fort floor should be prevented.

Unit 1.5 plateau and cliff slope between N. fort and car park.

- 2.8 Includes grazing enclosure. Frequent scrub, particularly on either side of path, plus much mesotrophic grassland, particularly towards car park. Within scrub to east, small patches of relic limestone grassland consolidate along cliff top to form strip of CG1 (with White Rock-rose, Autumn Squill, Lesser Meadow-rue) grading into maritime grassland. Selective scrub clearance and continued grazing in this area could make this patch more robust. However, Small Restharrow on slopes below has benefitted from relaxation of

grazing this year. One patch of CG6 present on plateau where scrub was previously cleared would benefit from more grazing as includes coarser herbs and grasses; there is potential here for scrub clearance to increase area of limestone grassland. Note that a male Cirl Bunting was singing from this area during survey work, so the possibility of a territory here should be kept in mind when planning scrub clearance.

- 2.9 Measures to encourage dog walkers to exercise their dog initially on the amenity grassland west of car park and degraded grassland immediately north of car park could help prevent eutrophication of remaining and restored limestone grassland.

Unit 1.6 - Cliff slopes south of North Fort.

- 2.10 Much is invaded by dense scrub, within which clearings on old spoil heaps support MC5 (including rare moss *Cheilothea choloropus*). Top of cliff slope supports CG6, species-rich in places, with some gradations to CG1 (Small Hare's-ear present on thinner soils). Grazing would benefit taller, less species-rich areas with Cock's foot and Perennial Rye-grass, Hairy Oat-grass, Ribwort Plantain etc. In the eastern half, a patch of species-rich MC11c with exposed rock includes Autumn Squill, White Rock-rose, Dwarf Mouse-ear; Lesser Meadow-rue and Blue Fescue also present. MC11c grades into MC11b on lower slopes. Scrub control carried out in east of this unit should be extended to west to ensure no loss of habitat. Current low-level visitor pressure is probably useful in helping maintain open areas.

Unit 1.7 - Plateau from North Fort to lighthouse.

- 2.11 The battlement slopes support a community related to CG2a. Trampling pressure is evident but limited to a perimeter path plus a very eroded area supporting sparse species-poor CG1 (with scarce Rough Clover *Trifolium scabrum*). Monitoring is needed here as any increase in trampling could be detrimental, although some disturbance is necessary, for example for Nit Grass. Green-winged orchid *Anacamptis morio* and Autumn Squill are also present, and Small Hare's-ear was recorded in the past. Scrub control should be continued at the base of the northern rampart (and could be aided by grazing). Relocating the canons could reduce trampling on the most eroded part.
- 2.12 Mesotrophic grassland around café extends along the central plateau and appears very nutrient-enriched. More diverse CG6 in central area (continuous with cliff slope CG6 of 1.6) and two patches of CG3. CG6 shows signs of past improvement/reseeding (much Perennial Rye-grass *Lolium perenne*). A patch of scrub bisects the plateau - on the north side, linear glades in scrub support CG6, which continues to east and has colonised recently scrub-cleared areas, and could be expanded.
- 2.13 The strip along the path by the lighthouse is degraded through trampling (and possibly past reseeding) and merges into degraded CG1 (nationally scarce Bulbous Meadow-grass *Poa bulbosa* is present). Below this is more species-rich CG2a with Autumn Squill. The headland ends in severely degraded maritime cliff community (impacted by trampling, eutrophication reseeding) - this is a honeypot due to the extensive views and location at the end of headland. Measures to reduce trampling (e.g. temporary paths

marked out or temporary exclosures) could help re-distribute trampling pressure. Some trampling is beneficial in maintaining open conditions in absence of grazing (the sheep tend to avoid this busy area).

Unit 1.8 – triangle W. of North Fort.

- 2.14 The western and northern side is mesotrophic grassland, heavily trampled and nutrient enriched through dog fouling. This would be difficult to restore to limestone grassland. Severely degraded CG1 in the east could potentially be improved if trampling pressure were reduced. Installing a path may have contained trampling a little. The use of an appropriate barrier along edge of path could reduce trampling a little, as could temporarily redirecting the path through the scrub. Some trampling is necessary to maintain open conditions if the area remains ungrazed.

Part of unit 1.9 – limestone heath

- 2.15 Limestone heath supporting H8c overgrown with Gorse; Bracken and Bramble invasive in some areas. Scrub clearance and grazing with Soay sheep already undertaken. Lesser Meadow-rue along path. Paths have helped maintain open areas; more scrub clearance could increase area of heath.

Unit 1.11 – north-west of Berry Head quarry

- 2.16 North-facing slopes with pits and spoil heaps support CG2a, species-rich in places with Lesser Meadow-rue and Rock Stonecrop. Transitions to CG1 on spoil heaps. Pockets of mixed scrub, also young woodland - calcareous ground flora suggest scrub clearance could increase area of limestone grassland here; grazing would be beneficial. Suitable habitat on northern slopes may be more important in future as climate changes. Species poor MC11c to east and along cliff edge, colonised by scrub and Sycamore *Acer pseudoplatanus*.

Unit 1.12 – Durl Head

- 2.17 Head supports stand of species-rich MC11c with Honewort, grading into poor MC11b on lower slopes. Paths created by shore anglers contribute to keeping small areas open. Much of cliff top south of Durl Head supports dense Blackthorn scrub. Goldilocks Aster is present where this has been cleared. Ongoing scrub management needed to maintain Goldilocks Aster population.

Unit 8 – Berry Head Quarry

- 2.18 Open areas within scrub support quite species-rich CG1/CG2 on plateau above SW corner of quarry and would benefit from scrub clearance and grazing.
- 2.19 Most of quarry floor outwith the fenced off quarry is MC11c of variable quality and not managed; trampling is limited compared to the central plateau. Small area of limestone grassland (CG6 plus CG2a on south and west facing slopes) associated with spoil at risk from invasive scrub. Nearby scrub patch with Buddleja has MC11 ground flora. Impacts

of human defecation evident – possible installation of toilet for fishermen could help to address this issue.

- 2.20 The fenced off area of the quarry was not surveyed.

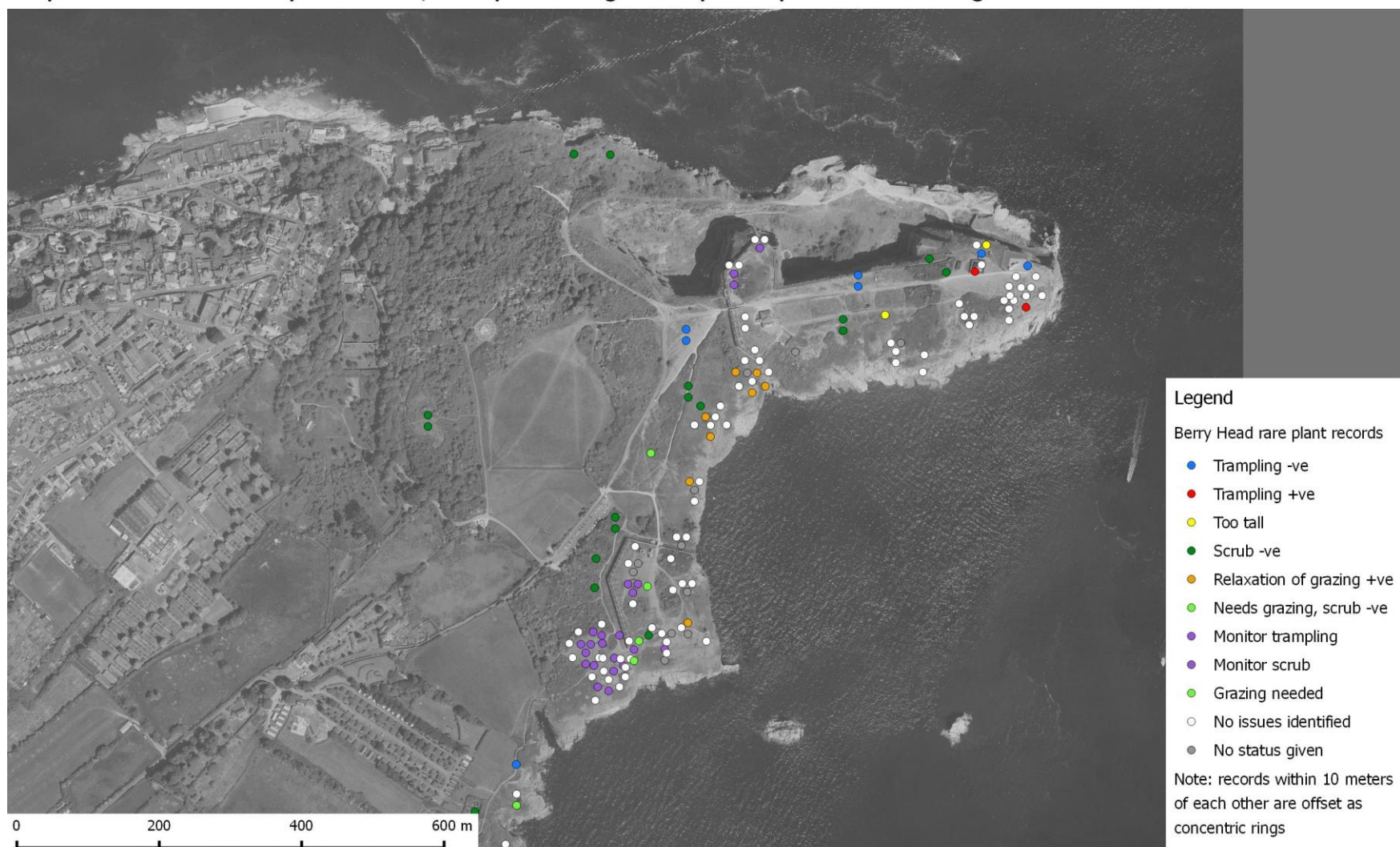
Unit 7 Sharkham Point

- 2.21 No intervention required in areas of secondary woodland and scrub. Majority of vegetation cliff slopes to north and south support species-poor tussocky maritime grassland, bracken and scrub, rocky outcrop of point supports MC5b with Autumn Squill and Blue Fescue. Small patch of CG1b supports Honewort (but falls outside of the SSSI and SAC boundary). Scrub clearance and grazing would benefit species-rich grassland.

Rare plants

- 2.22 Berry Head is renowned for supporting a suite of rare plants, most of which are characteristic components of the Annex I habitats at Berry Head (although not in themselves qualifying features). The 2016 survey (Wilson and Wheeler, 2016) recorded 179 populations of 20 rare plants, and included a description of the health of most populations. The survey found that Golden Aster, Honewort, Small Hare's-ear, Dwarf Mouse-ear, Nit Grass, Autumn Gentian, White Rock-rose, Autumn Lady's-tresses and Autumn Squill were, in places, negatively impacted by trampling (or were absent from heavily trampled patches in areas where otherwise present). However, trampling was also considered to be contributing to suitable conditions in some locations for Golden Aster, Honewort, Small Hare's-ear, Dwarf Mouse-ear, White Rock-rose, Bulbous Meadow-grass and Toothed Medick. It was noted that White Rock-rose, Lesser Meadow-rue and Small Restharrow were benefitting from a relaxation of grazing pressure on the cliff slope between the two forts. Management to reverse or prevent further invasion by scrub or other robust species was identified as a requirement for Golden Aster, White Rock-rose, Autumn Squill, Lesser Meadow-rue and Blue Fescue at various locations around Berry Head, and for Honewort at Sharkham Point. Map 3 shows the locations of recorded populations, coded according to their current status with regard to trampling, scrub and grazing pressure and requirements.

Map 3: Distribution of rare plant records, with species categorised by the implications for management.



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3. Visitor management plan

- 3.1 Berry Head is one of the main recreational spaces for the residents of Brixham and Torbay and further afield in South Devon. It is also an important tourist attraction - for example, a 2003 South West Tourism survey found that 12% of tourists interviewed in Torbay had visited Berry Head. The quality of its historical and environmental heritage, combined with the number of visitors, make it Torbay's most important outdoor green space (Torbay Coast and Countryside Trust 2007).
- 3.2 The 2016 visitor survey and previous work (see Panter and Lake 2016; Torbay Coast and Countryside Trust 2007) suggest that many people visiting Berry Head are primarily motivated by the scenery and views and by the suitability of the site for dog walking. There appears to be limited awareness of the environmental and historical heritage of the site and visitor attitudes are perhaps more characteristic of those typical at robust recreational sites.
- 3.3 Visitor pressure can impact on habitats present at Berry Head. Trampling changes the floristic makeup of the calcareous grassland communities, for example heavy trampling can lead to an increase in resistant species such as Crested Dog's-tail, also Cock's-foot, Creeping Bent *Agrostis stolonifera*, and some of the rosette species such as Ribwort Plantain *Plantago lanceolata*, Daisy *Bellis perennis*, and Dandelion *Taraxacum officinale* agg. (Rodwell, 1992). "Cultural eutrophication" such as dog fouling is often associated with recreation use, and in grassland leads to the appearance of *Lolium perenne* and a move towards species-poor mesotrophic grassland. Trampling can also physically damage individual plants and therefore populations.
- 3.4 However, in situations where the past grazing that played a key role in creating and maintaining the grassland, heathland and maritime cliff communities has ceased, trampling can play a role in maintaining open swards free from scrub. Trampling at an appropriate level can also prevent the dominance of grasses, which would otherwise out-compete the characteristic fine grasses, herbs and mosses. This appears to have been the case in some areas on Berry Head.
- 3.5 It is difficult to be able to predict a threshold at which trampling becomes damaging rather than beneficial. It is therefore necessary to monitor the vegetation and take action to reduce trampling when negative indicators (such as a decline in the population of characteristic species and overall diversity) are observed. Monitoring recommendations are given by Wilson and Wheeler (2016), who also identified what they considered to be 'sensitive areas'. These areas are shown in Map 4 (colour-coded according to NVC community as labelled – see Table 1 for NVC descriptions).

Map 4: Sensitive areas identified in the 2016 vegetation survey (Wilson & Wheeler, 2016)



- 3.6 Visits to Berry Head may increase in the future, irrespective of the provision of new housing in the local area. For example, recent national monitoring suggests that, whilst the total number of visits to the coast in England has not increased since 2009, coastal path usage has increased by 136% (Natural England 2016). It is also possible that the number of tourists may increase in the future, for example if financial trends linked to Brexit encourage tourists to holiday in Britain. Overall, it seems likely that visitor pressure will increase at Berry Head, and that this will be only partly due to an increase in housing within the local area.
- 3.7 Trampling and scrambling can also impact on historical features. This is not a focus of this report, but historical features are taken into account both in terms of their interest to visitors and their vulnerability.
- 3.8 Locations where trampling was noted to be an issue for some rare/scarce species in the rare plant survey were the Rabbit Lawn, the triangle west of the North Fort, the northern edge of the central plateau north of the lighthouse, the middle of the central plateau, the area within the South Fort, and at the Goldilocks Aster population south of Durl Head (see Map 3).

Visitor management plan objectives

- 3.9 The objectives of the visitor plan are listed below (note that this is a visitor plan to deal with potential changes to the site as a result of an increase in visitor pressure, not an overall visitor strategy and plan, which would be likely to also include objectives about visitor experience, social inclusion etc.). Aims that are directly relevant to an increase in housing are underlined, but, as discussed above, these aims do not necessarily solely relate to increased housing. Overall, it seems that there are limited options to attract visitors elsewhere (see Panter and Lake 2016), and that it will therefore be necessary to carry out measures on site at Berry Head to ensure that visitor pressure is not detrimental to the site. Objectives are:
1. To increase visitor awareness of the heritage value of Berry Head and its status as a National Nature Reserve and to promote behaviour appropriate to a sensitive NNR and heritage site
 2. To reduce trampling in key areas
 3. To maintain an appropriate level of trampling in areas where this is beneficial
 4. To prevent an increase in trampling in sensitive areas
 5. To reduce ongoing eutrophication through dog and human fouling
 6. To prevent an increase in such eutrophication

Options:

A dual interpretation policy

- 3.10 Interpretation and information needs to be aimed at both regular local visitors and first time visitors, who are often from further afield. Interpretation and information for first time visitors would be aimed at enhancing their experience of the site while promoting appropriate behaviour. It would provide information on the status of the site, features of interest, recommended routes, and appropriate behaviours to safeguard the site. It could include requests to remain on paths and a warning about the cliffs with the aim of preventing an increase in trampling.
- 3.11 Regular visitors may be less likely to read signs and will follow routes they are already familiar with (e.g. see Panter and Lake 2016), and engagement should focus on alternative techniques (see below). However, temporary signage should still be used to inform them of the whereabouts of grazing animals, any path diversions and upcoming events etc.

Interpretation and information

- 3.12 An effective way of presenting information and interpretation could be the use of a large board/boards with permanent information in a central panel (e.g. a map with routes and zones, permitted activities etc.) plus sections at either side where temporary signs and posters could be displayed. Such boards could be situated at the main car park and at the path junction where the path from Brixham enters the site (e.g. SX94045663). They should bring the site's protected status to the fore in a positive light and help increase visitors' understanding of appropriate behaviour at the site. Improved boards providing historic information should be installed at the two forts. Additional boards providing information about the wildlife value should also be installed, for example at the Rabbit Lawn and heathland area.
- 3.13 It is important that interpretation and information is not restricted to the visitor centre, which is not always open, and is available at key entrance points.
- 3.14 Visitor centre staffing should be reviewed to maximise opening hours.

Zones

- 3.15 Zoning Berry Head into areas suitable for different activities may be one way of encouraging appropriate behaviour in sensitive areas while highlighting what the site has to offer. Zoning information could be presented in map format, with icons for activities. It should not be presented as a list of restrictions, but rather as a means of encouraging the use of particular areas for specific activities while providing visitors with easily accessible information about where they may wish to go. It would be worth considering the possibility of requiring dogs to be on leads in all or some of the grazing compartments areas even when grazing animals are not present. This would reinforce the habit of having dogs on leads in these areas and minimise incidents of dog walkers

letting dogs of the lead simply because they cannot see any livestock, or feel that their animals are safe with livestock. It would reduce dispersed eutrophication by preventing dogs from defecating out of sight of their owners. Table 2 gives an indication how this could be carried out.

Table 2: Areas that would fall within suggested zones at Berry Head. Existing restrictions regarding fires, camping, vehicles etc. would apply to all areas

Zone	Suitable activities	Any restrictions	Areas to include
Amenity zone	Recreational activities including walking, dog walking, picnicking, kite flying etc., also site events	Existing restrictions only	Amenity grassland west of car park Central pasture Degraded grassland immediately north of car park
Heritage zone	Enjoyment of historic environment, views in addition to wildlife and walking and the café	Existing restrictions + dogs on leads in grazed areas	<ul style="list-style-type: none"> Central plateau within North Fort South Fort
Wildlife and walking zone	Walking and enjoyment of wildlife	Existing restrictions + Dogs on leads in grazed areas	<ul style="list-style-type: none"> Western woodland area Heathland Scrub between rabbit lawn and car park
Activity zones	Fishing and climbing	Existing restrictions + existing seasonal restrictions around seabird colony	<ul style="list-style-type: none"> Quarry floor, cliffs between N. & S. Forts
Wildlife zone	No promoted routes or access points although access not prevented	Existing restrictions + dogs on leads in grazed areas.	<ul style="list-style-type: none"> Grazing enclosure on cliff slopes and plateau between North and South Forts Rabbit Lawn Cliff slope below South Fort Cliff slopes north-west of quarry Small plateau south west of quarry
No access	None	n/a	<ul style="list-style-type: none"> Gated areas of quarry Edge of cliff north of lighthouse

Routes

3.16 The promotion of appropriate routes could help focus first time users in particular away from sensitive areas in order to reduce diffuse trampling pressure. However, this

approach is less likely to influence the 60% of visitors who are regular locals likely to be using their previous knowledge of the site to determine their route, or first time visitors keen to visit specific points such as the forts and end of the headland.

- 3.17 Removal of the two canons on the northern ramparts of the North Fort to a new, more robust location (e.g. outside of the visitor centre) would help reduce erosion on the ramparts where people climb up to see the canons. It may also be possible to install a set of steps encouraging most people to keep off the remainder of the sward, but this would require advice from Historic England.

Route fingerposts

- 3.18 Sympathetically constructed route fingerposts would help visitors seeking a specific route or destination (such as the Coast Path or the forts) and would help reduce diffuse trampling pressure. One has recently been installed at the triangle near the entrance to the North Fort – similar posts could be installed near the northern viewpoint just off the surfaced main track (where walkers arrive from Brixham), and by the car park.

Delimiting paths

- 3.19 The installation of a path to the entrance of the North Fort is considered to have helped reduce diffuse trampling in the triangle area here. In many other areas (such as in the South Fort and at the eastern end of the Northern Fort), trampling is damaging some places, but also has a useful role to play in maintaining open conditions in other places. Where trampling is damaging the sward (e.g. near lighthouse), it would be worth trying to mark out the line of a path using a temporary system (such as low posts with rope between), or to erect temporary exclosures. This would encourage walkers to follow a particular route, but would not necessarily confine them to it, and could be moved periodically. It would need to be carried out in conjunction with signage explaining the reason for the temporary barrier and vegetation monitoring (sward height, composition, rare species). Care would be needed to ensure that walkers “desire lines” are taken into account.
- 3.20 Near the triangle at the entrance to the North Fort, an alternative path re-joins the main path at the southern corner of the triangle. This path could be continued through the scrub to re-join the alternative path nearer the entrance, possibly decreasing the level of trampling on the degraded CG1 sward on the eastern part of the triangle.

Codes of conduct

- 3.21 Codes of conduct should be developed with dog walkers, shore anglers and climbers. These would be most effective if developed in partnership with representatives from each user group and would need to be promoted on site, through relevant clubs and through community engagement work.

Face to face engagement

- 3.22 Face-to-face engagement is an effective way to engage with visitors, providing opportunities to enhance visitors' experience at the site while also creating opportunities to communicate important information about the value and vulnerabilities of the site and to promote appropriate behaviour. It would also increase staff understanding of visitors' interest and expectations.
- 3.23 More seasonal wardening, particularly before and after usual hours, to promote appropriate behaviour (e.g. picking up dog waste) would be a key tool in face-to-face engagement⁶.
- 3.24 Targeted events may be effective. For example, a dog walking event with dog-friendly staff available to talk to dog walkers (see Dorset Dogs⁷ for ideas), "meet the livestock" events etc. can all deepen visitors understanding of the site and promote appropriate behaviour while strengthening relationships.

Community engagement

- 3.25 Local community engagement has a key role to play given the high proportion of local visitors. In part, this will take the form of face-to-face engagement outlined above. Other recommended actions are to reinvigorate the Berry Head community group⁸, to undertake regular talks to community groups, to undertake regular guided walks publicised to new residents and to provide information leaflets about the site to homeowners on new developments.

Toilets

- 3.26 Toilet facilities are needed for those visiting the site out of hours - either by making arrangements for the existing toilets to be open dawn – dusk or installing facilities in the car park. An investigation also needs to be undertaken into the feasibility of providing facilities on the quay for shore anglers. However, there are concerns that toilets open out of hours may encourage anti-social behaviour.

Parking

- 3.27 Overnight parking is currently an issue at Berry Head, given that toilet facilities are not available after the café is shut. Closing the car park from dusk until dawn could decrease problems with other antisocial behaviours (such as littering and dog-fouling) as a greater proportion of visitors will be on-site when staff are present. This could be done by installing one-way barriers which allow visitors to exit the car park but not to enter it

⁶ TCCT employs staff at Berry Head (currently one Countryside Officer, one Seasonal Ranger (April – September) and three Trainee Rangers (on 9 month voluntary placements), who are based in The Bungalow.

⁷ <http://www.dorsetdogs.org.uk/>

⁸ The Friends of Berry Head is a grassroots user group formed in 2005 to encourage better communication with and involvement by regular visitors to the site

during these times. However, increasing staff hours would be a preferable solution. Unless a permit system could be introduced, preventing overnight parking would exclude shore anglers who wish to park in order to fish at night although this might be overcome by a permit system to a fishermen's car park. Other anti-social behaviours are considered to have decreased since the installation of number-recognition cameras in the car park. However, there is an existing issue for anglers who arrive during the night, and have to return to their car to purchase a second ticket.

Dogs

- 3.28 Five dog bins are currently in use. Although it has been suggested that increasing the number of bins might encourage picking up, work carried out by staff at Berry Head suggests that picking up appears to be related to visibility – dog walkers are less likely to pick up when out of site, irrespective of whether dog bins are present. Installing further dog bins is not therefore recommended.
- 3.29 It will be necessary to instigate a dogs on leads policy for any new grazing compartments (see below). This should be accompanied by visitor engagement work to explain the grazing and need for dogs on leads.

Sharkham Point

- 3.30 The development of Sharkham Point as an alternative destination, particularly for dog walkers, has been suggested (e.g. Lake and Liley 2016). The difficulties presented by the single lane access road combined with the views of respondents regarding the site (see Panter and Lake, 2016) indicate that measures to draw visitors to Sharkham rather than Berry Head are likely to have very limited success. However, work to improve the car park (which currently feels rather dilapidated and insecure, with no interpretation or information) and vegetation management to make the site more attractive to dog walkers may go some way to attracting dog walkers from the immediate neighbourhood away from Berry Head. Over time, it may also attract more visitors looking for a quieter location if Berry Head becomes busier.

Road signs

- 3.31 Some of the brown road signs in Brixham refer to "Berry Head NNR and Napoleonic Forts", while at least one refers to "Berry Head Country Park", with the family icon. It is recommended that all signs are reviewed and where necessary changed to "Berry Head NNR and Napoleonic Forts", highlighting the heritage importance of the site.

Monitoring

- 3.32 Vegetation monitoring needs to be accompanied by reliable data on visitor numbers to different areas of the site to allow an assessment of how changing visitor numbers may be affecting vegetation and populations. The effectiveness of measures to change visitor behaviour (e.g. rope barriers to persuade visitors to stay on paths) should also be

monitored. It is suggested that automated visitor counters are installed (e.g. leaving car park, entrance to North Fort, entrance to South Fort, path to Brixham).

Table 3: Summary of visitor management options at Berry Head (refer to text above for more explanation)

Option	Description
Dual interpretation policy	
1	Develop interpretation and information for both local users and visitors from further afield.
Interpretation and information	
2	Install large board(s) at car park and Berry Head hotel path entrance
3	install improved interpretation panels on historic environment at forts
4	Install boards with interpretation about wildlife value of site at suitable locations
5	Review staffing of visitor centre to maximise opening hours
Zoning	
6	Develop zoning as a tool to help inform visitors about the value and vulnerabilities of the site
Routes	
7	Explore possibilities of promoting particular routes above others to reduce pressure in vulnerable areas
8	Relocate canons/install step (depending on advice regarding historic environment)
Signposting	
9	Install sympathetic fingerposts to provide directional information e.g. at carpark and top of path from Berry Head hotel
Delimiting paths	
10	Experiment with temporary/permeable barriers to reduce diffuse trampling (e.g. near lighthouse and at triangle at entrance to North Fort.
Codes of conduct	
11	Develop codes of conduct with dog walkers, shore anglers and climbers
Face-to-face engagement	
12	Increase face-to-face engagement time and increase 'out of hours' wardening presence
13	Undertake targeted engagement events
Community engagement	
14	Re-invigorate Friends of Berry Head
15	Undertaken regular guided walks and talks aimed at new residents
16	Distribute information leaflets to new houses
Toilets	
17	Increase access to toilets (e.g. after 4pm)
18	Install toilet for shore anglers on quay
Dogs	
19	Dogs on lead policy in new grazing areas (plus relevant information)
Sharkham Point	
20	Develop as an alternative destination for local dog walkers

BERRY HEAD VISITOR, SCRUB & GRAZING PLAN

Option	Description
Road signs	
21	Ensure all brown road signs refer to Berry Head nature reserve and Napoleonic Forts
Monitoring	
22	Instigate regular visitor monitoring e.g. visitor counters

4. Scrub plan

- 4.1 Scrub encroachment is thought to have increased significantly at Berry Head since the cessation of agricultural grazing in the 1970. It is not clear how much limestone grassland, maritime cliff vegetation and heath has been lost to scrub encroachment. Old postcards held by site staff show significantly less scrub on the cliff slopes than is presently the case. Twenty-five populations of rare/scarce plants are considered to be currently threatened by scrub encroachment, while 21 areas are considered to require scrub management (see Map 5).
- 4.2 Scrub management objectives are listed below. Underlined text indicates measures that relate directly to an increase in visitor pressure due to local development. However, these measures would also be needed for an increase in visitor pressure due to other factors, and some would be beneficial in any case, for example increasing the area of limestone grassland on north or east facing cliff slopes could make the habitat more resilient in the face of climate change):
1. Retain sufficient scrub to maintain breeding bird populations (particularly Cirl Bunting) and habitat for migrants; provide microclimatic variation and provide structural and species diversity over the site as a whole
 2. Safeguard existing areas of vegetation and rare plant populations threatened by scrub invasion
 3. Increase area of limestone grassland, heath and maritime cliff communities to make populations and communities more robust
 4. Increase open areas available to visitors and potentially open new routes to reduce trampling pressure on existing well-used areas
 5. Retain scrub as a barrier to encourage visitors to use particular routes
 6. prevent spread of potentially invasive alien species (Buddleja, Cotoneaster)
- 4.3 There are a number of areas where the removal of scrub would meet one or more of the above objectives. These areas are shown on Map 5. Recommended options are listed in Table 4, and numbered sequentially according to the polygon number they relate to shown in Map 5. Note that cross reference should be made to breeding bird territories and any areas of scrub particularly used by migrants (this is likely to be from site manager knowledge rather than territory maps).

Map 5: Scrub management



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Table 4: Scrub management recommendations.

Polygon no. (see Map 5)	Scrub management recommendation
1	Expand glades and path edges with a calcareous flora between Rabbit Lawn and car park
2	Ensure scrub does not encroach on landward margins (current cutting regime may be adequate); scallop edges of scrub islands, retaining some scrub as margins allow an untrampled, longer sward to develop (which may provide a niche for less trampling tolerant species, particularly if trampling increases); maintain "hedge" of scrub between path along Fort ditch where Rabbit Lawn opens out, to encourage walkers to continue this trajectory toward the coastline rather than dispersing across the Rabbit Lawn
3	Cut back scrub on rampart in South Fort to allow walkers to continue along base of rampart in order to reduce localised erosion causing damage to historical feature
4	Clear scrub in centre of patch near entrance to South Fort to conceal livestock handling facilities, ensure exit at back for sheep (in case of issues with dogs)
5	Prevent further scrub expansion onto CG2b; scallop edges to increase area of less trampled sward on margins
6	Prevent further scrub expansion on cliff slopes east of South Fort; longer-term consider scrub removal on slopes to increase area of east-facing maritime cliff community (in case south facing slopes become too parched as a consequence of future climate changes). Would require in-house rope training or use of a specialist contractor.
7	Prevent further scrub encroachment on species-rich upper slopes S. of South Fort, consider some scrub clearance (training/contractor needed as above).
8	Create glades in scrub on plateau to increase robustness of areas of CG1b and expand limestone grassland
9	Consider cutting scrub to continue path through scrub to the entrance to the North Fort, potentially decreasing trampling on degraded CG1b in triangle outside fort.
10	Continue scrub clearance to expand area of CG6 and connect with open areas to north
11	Consider scrub clearance to expand small areas of CG3 below north wall of South Fort
12	Clear scrub to create passage east-west passage through scrub block on slopes below N. Fort/plateau for sheep to enable them to traverse cliff slope without having to return to plateau (avoided by sheep when busy with visitors)
13	Continue gradual scrub clearance around open areas of CG6, MC5d & MC11b in cliff slopes below N. Fort to safeguard existing patches and increase area of limestone grassland/maritime cliff community.
14	Continue to scallop edges of northern scrub block in central plateau to promote CG6; clear crescent-shaped area at back (with "emergency exit" through front) to allow sheep to graze
15	Long-term, consider scrub removal to increase area of limestone grassland/maritime cliff vegetation here and connect up small patch of open habitat on small promontory to west
16	Push scrub back from ramparts by about 10m so that visitors do not need to climb rampart (localised erosion is damaging vegetation and historical feature)
17	Clear scrub to enlarge areas of CG2a, retain "hedge" of scrub to screen livestock if introduced here
18	Continue scrub clearance to expand area of ericaceous limestone heath

Polygon no. (see Map 5)	Scrub management recommendation
19	Scrub clearance around existing areas of CG1/2 limestone grassland on north-west cliff slopes to prevent further encroachment and increase area of limestone grassland on site.
20	Remove Buddleja to prevent further encroachment
21 & 22	Targeted scrub clearance within these areas to safeguard Goldilocks Aster population. Retain "hedge" of scrub along path to create barrier to screen livestock in potential grazing unit.

- 4.4 There are also a number of areas where scrub monitoring is recommended to assess whether scrub is increasing and jeopardising areas of Annex I habitat and areas with rare plant populations. This can be seen on Map 3 (purple dots)
- 4.5 The polygons in Map 5 were mapped over aerial images and ground-truthed on 01/11/2016. Clearly the difficulties of managing scrub on cliff slopes need to be taken into account and suitable assessments made before undertaking scrub clearance in any of these locations.

5. Grazing plan

- 5.1 Historically, domestic livestock would have grazed Berry Head. Combined with the cutting of Gorse, Bracken and other scrub for fodder, bedding and fuel, grazing would have maintained an open landscape and created conditions suitable for the rare limestone grassland and maritime cliff vegetation for which Berry Head is designated. Agricultural grazing is thought to have continued until the 1970s (TCCT, 2007), and lapsed until 2008 when goat and then latterly sheep were introduced to the cliff slopes. In 2004, cattle grazing commenced (using a tenant grazier) then in 2006, TCCT's North Devon cattle were introduced to the pastures and part of the woodland.
- 5.2 Quantitative monitoring data showing the impact of this grazing is not available. However, the impact of grazing on the limestone grassland communities present is generally understood (see Table 1) and considered beneficial. The vegetation survey identified that grazing would improve the quality of the grassland in additional areas (e.g. South Fort, cliff slopes around Durl Head) and help populations of rare species (e.g. Autumn Squill, Goldilocks Aster). Grazing is also likely to discourage scrub encroachment and help with the restoration of grassland after scrub clearance. It will also decrease the amount of manual cutting required, freeing staff and volunteer time for visitor engagement and other habitat management work.
- 5.3 The management plan (TCCT, 2007) noted a negative attitude towards grazing amongst some visitors to the site, with worries including a fear of cattle, concern about dogs worrying livestock, potential loss of amenity areas and the visual impact of fencing. However, only one respondent to the 2016 questionnaire expressed the view that livestock should not be present. Incidents of dogs chasing livestock currently occur (N. Hughes, pers. comm.). These concerns are valid and should be addressed for any new livestock compartments. Measures to alleviate these concerns could include:
- Maintaining livestock-free areas at all times for walkers/dog walkers wishing to avoid livestock
 - Publicising where livestock are currently grazing at any time
 - Holding "meet the livestock" days to allay fears about livestock, share information about why grazing is necessary and build support for grazing in the local community
 - Promote Berry Head as a nature reserve where habitat management for nature conservation is a priority, not primarily as a recreation area
 - Conceal fencing in scrub wherever possible
 - Create scrub barriers and escape routes for sheep to allow them to avoid dogs and avoid being trapped in corners.
 - Explain why grazing is necessary and the benefits it confers in publicity material and events (guided walks, talks, leaflets, interpretation signs, visitor centre etc.)

5.4 Grazing objectives are to:

1. increase the quality of existing areas of limestone grassland, maritime cliff communities and limestone heath to make populations and communities more robust
2. to help prevent scrub encroaching on existing areas of limestone grassland, maritime cliff communities and limestone heath
3. to help restore areas where scrub is removed and increase the quantity of limestone grassland, maritime cliff communities and limestone heath

5.5 Sheep grazing is likely to be the best option on the limestone grassland and particularly on the cliff slopes, where their greater agility is ideal. However, sheep tend to graze heather more than cattle e.g. (Lake, Bullock & Hartley, 2001), and autumn grazing by sheep can be particularly damaging to heather, so the possibility of grazing cattle or ponies on the heathland area should be explored. In general, the existing timetable of grazing the cliff slopes and limestone grassland in autumn and winter, the heathland in spring-summer should be continued. It was noted in the 2016 vegetation survey that some species were benefitting from a relaxation of grazing after a period of more intense grazing (a result of logistical issues with the grazing programme), highlighting the importance of adapting the grazing regime in the light of monitoring. It is recommended that grazing to restore grassland is generally focussed on less accessible slopes, where there is less trampling (and reduced likelihood of sheep worrying by dogs).

5.6 Grazing recommendations are listed in Table 5 and relate to the polygon numbers (i.e. point 1 relates to polygon 1) in Map 6.

Table 5: Grazing recommendations at Berry Head.

Polygon no. (see Map 6)	Grazing recommendation
1	Maintain existing sheep grazing enclosure on plateau between N. and S. Forts
2	Maintain existing sheep grazing enclosure on slope and plateau of N. Fort
3	Create a sheep grazing enclosure encompassing the scrub and expanded clearing/rides between the S. Fort and car park
4	Create a sheep grazing enclosure (plus handling facilities) in the S. Fort, including the cliff slopes to the south and east and the Rabbit Lawn
5	Use temporary electric fencing to focus sheep grazing on the north ramparts and plateau of the N. Fort (sheep currently rarely graze this, because it is heavily visited by people although it is within the grazing compartment)
6	Use temporary electric fencing to sheep graze the plateau above the south-west side of the quarry once some scrub clearance has been carried out (some existing fence lines are present, now hidden in the scrub, and should be explored)
7	Erect permanent fencing to sheep graze the cliff slopes north-west of the quarry (check existing boundary in west)
8	Explore the use of temporary electric fencing or permanent fencing to sheep graze the eastern quarry floor
9	Continue grazing the heathland area – consider using cattle or ponies

Polygon no. (see Map 6)	Grazing recommendation
10	Use existing fencing and install new fencing as required to graze the woodland adjacent to the central pasture, including existing clearing.
11	Explore possibility of grazing cliff slopes around Durl Head with Soay wethers, potentially including additional land to landward side to reduce fencing adjacent to coastal path.

5.7 These grazing options will require the following:

- Electric fencing plus energiser; staff time to check fences daily
- Increasing existing Soay sheep flock (possible by breeding from current herd); to establish small flock of Soay wethers
- Exploring use of existing cattle on heath, or potential for using ponies
- Enforcement of dogs on leads policy in grazing compartments whenever livestock are present
- Ensuring new fence lines are concealed within scrub wherever possible to minimise detracting to landscape

Map 6: Grazing plan



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6. Management options directly relating to local development

- 6.1 A number of the options outlined in section 3-5 will be needed to mitigate for the increased visitor pressure likely as a consequence of local development. However, it is noted that many of these options would be beneficial even if visitor pressure were not to increase beyond the current level; some options have also already been identified as necessary in the context of the Wall Park development (see section 1.20). In Table 6 we list those options we consider particularly relevant to additional new development.
- 6.2 The options in Table 6 vary in cost and scale and will not necessarily all be required in order to provide sufficient mitigation. It will be necessary to work up the package of mitigation such that it is deliverable and proportionate to the scale of development coming forward.

Table 6: Management options directly relevant to an increase in visitor pressure due to local development.

Option	Reason
Part time ranger post	Visitor engagement work will be key in changing visitor behaviour on site so that a greater numbers of visitors can be accommodated without further jeopardising the condition of the Annex I habitats. Increase ranger presence on site will also help influence behaviour.
Electric fencing	Greater visitor numbers will mean that livestock are less likely to graze areas that become busier; electric fencing will provide a means to concentrate them in key areas they might otherwise avoid. Electric fencing will also enable additional areas to be brought into grazing management, mitigating for any loss of quality/quantity in heavily impacted areas.
Visitor counters	The need for future monitoring has been identified for several plant populations – these need to include data on changing visitor numbers to enable understanding of the relationship between visitor pressure and the condition of populations and habitats and subsequent action
Scrub management and grazing	(1) Habitat management in the area between the Rabbit Lawn and car park. This would enhance conditions for limestone grassland and help ensure habitat is not lost overall if trampling increases and proves detrimental to the Rabbit Lawn area. (2) Targeted scrub clearance on the cliff slopes below the North Fort. This would enable sheep to move between grazing areas on the slopes without having to move up onto the plateau, which they will be increasingly less likely to do if visitor numbers increase. (3) Scrub clearance within the existing grazing enclosure between the two forts will increase the area of limestone grassland in an area unlikely to be detrimentally impacted by over-trampling, and could contribute to maintaining the area of limestone grassland if existing areas become degraded through increased trampling
Management at Sharkham Point	Re-landscaping the car park, providing interpretation with route suggestions aimed at the dog walking community and vegetation management to make it more attractive to dog walkers may draw regular dog walkers from new housing, particularly if promoted suitably.

7. References

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8. Appendix I

Annex I habitats at Berry Head for which the South Hams SAC is designated

4030 European dry heaths

Although this site is important for its extensive limestone grasslands, some areas on the plateau support dry heath characteristic of acid soils. Both H7 *Calluna vulgaris* – *Scilla verna* and H8 *Calluna vulgaris* – *Ulex gallii* heaths are represented.

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia (* important orchid sites))

The Devonian limestone headland and cliffs of the Torbay area of south Devon support a large area of the rare CG1 *Festuca ovina* – *Carlina vulgaris* grassland, including the *Scilla autumnalis* – *Euphorbia portlandica* sub-community, known from no other site in the UK. The site is exceptional in that it supports a number of rare and scarce vascular plants typical of the oceanic southern temperate and Mediterranean-Atlantic elements of the British flora. These include Portland spurge *Euphorbia portlandica*, rock stonecrop *Sedum forsterianum*, autumn squill *Scilla autumnalis* and small hare's-ear *Bupleurum baldense*. **Semi-natural grassland** gives way to **4030 European dry heaths** on flatter slopes above the cliffs in some areas.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts

8310 Caves not open to the public