



Pinkworthy and Driver Farm SSSI Somerset

***Notification under section 28 of the Wildlife
and Countryside Act 1981***

Supporting Information

Contact points and further information

This supplement is issued on request by Natural England's Devon, Cornwall and Isles of Scilly Team and is intended to be read in conjunction with the notification document for owners, occupiers and other notified parties.

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Summary

Pinkworthy and Driver Farm SSSI is notified under section 28 of the Wildlife and Countryside Act 1981 (as amended).

Pinkworthy and Driver Farm SSSI is considered to be of special interest for its:

- **Species-rich lowland dry acid grassland** – the site supports species-rich examples of the National Vegetation Classification (NVC) type U4 sheep's fescue *Festuca ovina* – common bent *Agrostis capillaris* – heath bedstraw *Galium saxatile* grassland.
- **Species-rich rush pasture** – the site supports species-rich examples of the NVC type M23 sharp-flowered/soft rush – *Juncus acutiflorus/effusus* – marsh bedstraw *Galium palustre* rush-pasture.
- **Assemblage of grassland fungi** – the site supports an outstandingly rich assemblage of grassland fungi.

1. Information used to support the selection of Pinkworthy and Driver Farm SSSI

Feature	Data Source	Author	Date	Content
General	Revised Guidelines for the Selection of Biological SSSIs. Part 1: Rationale, Operational Approach and Criteria for Site Selection. JNCC, Peterborough. Published online: http://jncc.defra.gov.uk/pdf/SSI_GuidelinesPart1_PUBLICATION_Dec2013v2.pdf	Bainbridge, I., Brown, A., Burnett, N., Corbett, P., Cork, C., Ferris, R., Howe, M., Maddock, A. & Pritchard, S. (eds)	2013	National selection guidelines for biological SSSIs.
Acid grassland, rush pasture	The changing extent and conservation interest of lowland grasslands in England and Wales: a review of grassland surveys 1930-1984. <i>Biological Conservation</i> 40 , 281-300. https://www.sciencedirect.com/science/article/pii/0006320787901212	Fuller, R.M.	1987	Information on the national status of grassland habitats.
	British Plant Communities. Volume 2: Mires and Heaths. Published by Cambridge University Press	Rodwell, J.S. (ed)	1992	National Vegetation Classification (NVC) for rush-pastures.
	British Plant Communities. Volume 3: Grasslands and montane communities. Published by Cambridge University Press	Rodwell, J.S. (ed)	1992	National Vegetation Classification (NVC) for grasslands.
	Monitoring the condition of lowland grassland SSSIs. English Nature Research Report 315. Published online: http://publications.naturalengland.org.uk/publication/64033	Robertson, H.J. & Jefferson, R.G.	2000	National extent of U4 grassland.
	The condition of lowland BAP priority grasslands: results from a sample survey of non-statutory stands in England. English Nature Research Report 636. Published online: http://publications.naturalengland.org.uk/publication/106007	Hewins, E.J., Pinches, C., Arnold, J., Lush, M., Robertson, H. & Escott, S.	2005	Information on the condition of lowland grassland habitats.
	National Character Area (NCA) Profile 45: Exmoor. http://publications.naturalengland.org.uk/publication/2303045	Natural England	2014	Extent of lowland dry acid grassland in Exmoor NCA.

Feature	Data Source	Author	Date	Content
	Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 3 Lowland Grasslands. JNCC, Peterborough. Published online: http://jncc.defra.gov.uk/pdf/SSI_Chptr03_revision_2017(v2.0).pdf	Jefferson, R.G., Smith, S.L.N. & MacKintosh, E.J.	2014	Guidelines for selecting lowland grasslands for SSSI notification.
	Fate of semi-natural grasslands in England between 1960 and 2013: A test of national conservation policy. <i>Global Ecology and Conservation</i> 4: 516-525. https://www.sciencedirect.com/science/article/pii/S2351989415300184	Ridding, L.E. Redhead, J.W & Pywell, R.F.	2015	National study on loss rates of semi-natural grasslands within and outside protected sites.
	Pinkworthy and Driver Farm proposed Site of Special Scientific Interest National Vegetation Classification. Natural England Research Report (pre-publication.)	McLay, A. & Large, R.	2019	Survey of grassland vegetation (2018-19).
	Specialist support note for notification of Pinkworthy and Driver Farm as a SSSI	Stephen, K.	2020	Review of evidence and recommendation from Natural England's grassland specialist.
Grassland fungi	The Somerset Grassland Fungi Project 1997-1999. Report to the Somerset Wildlife Trust by Somerset Environmental Records Centre. http://library-cat.swheritage.org.uk/archive/TEM1303504527	Thompson, R.	2000	Comparative study of Somerset waxcap grasslands from surveys carried out between 1997 and 1999.
	Waxcap grasslands – an assessment of English sites. English Nature Research Report 555. Published online: http://publications.naturalengland.org.uk/publication/131003	Evans, S.	2004	Review of fungus-rich grasslands and the most significant sites in England.
	Charismatic megafungi: the conservation of waxcap grasslands. <i>British Wildlife</i> 15(3): 31-43	Griffith, G.W., Bratton, J.L. & Easton, G.L.	2004	Conservation of waxcap grasslands and ways to assess them.
	The genus <i>Hygrocybe</i> , 2nd revised edn. Fungi of Northern Europe 1. Danish Mycological Society.	Boertmann,	2010	Standard field guide to the identification of waxcap fungi.
	Identifying key fungal sites in England with potential for SSSI notification. Unpublished report to Natural England.	Smith, J.H.	2012	Identification of sites which meet the grassland fungi SSSI selection guidelines (2009).

Feature	Data Source	Author	Date	Content
	Pinkworthy (Driver Farm) Grassland Fungi Survey 2012-13. Report to Exmoor National Park Authority.	Thompson, R.	2013	Field survey of the site 2012-13.
	Distribution, ecology and status of 51 macromycetes in Europe - Results of the ECCF Mapping Programme.	Fraiture & Otto	2015	Study of the distribution, ecology and status of 51 fungi species on the European continent.
	Pinkworthy and Driver Farm Grassland Fungi Survey. Natural England Research Report (pre-publication.)	McLay, A. & Large, R.	2018	Field survey of the site in 2017-18.
	Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 14 Non-lichenised fungi. JNCC, Peterborough. Published online: http://jncc.defra.gov.uk/pdf/SSI_Chapter14fungi_2018a.pdf	Bosanquet, S.D.S., Ainsworth, A.M., Cooch, S.P., Genney, D.R., & Wilkins, T.C.	2018	Guidelines for selecting fungal sites for SSSI notification.
	English grassland fungi sites. Unpublished Natural England database.	Natural England	2019	List of all known important sites in England.
	IUCN 2020. The IUCN Red List of Threatened Species. Version 2020-2. http://www.iucnredlist.org . Accessed November 2020	IUCN	2020	Global red list of threatened species.
	Specialist support note for notification of Pinkworthy and Driver Farm as a SSSI	Wilkins, T.	2020	Review of evidence and recommendation from Natural England's fungi specialist.

2. Explanation of how Pinkworthy and Driver Farm meets the SSSI selection guidelines

This section explains how the information listed in Section 1 has informed the decision to notify the SSSI, according to the *Guidelines for the selection of Biological SSSIs. Part 1: Rationale, Operational Approach and Criteria for Site Selection* (Bainbridge *et al.*, 2013), and *Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 3 Lowland Grasslands* (Jefferson *et al.* 2014) and *Chapter 14 Non-lichenised fungi* (Bosanquet *et al.*, 2018), hereafter referred to as 'the Guidelines'.

2.1 Site history

Pinkworthy (known locally as 'Pinkery') and Driver Farms are both the result of mid-eighteenth century enclosures of moorland designed to create land suitable for sheep and stock rearing. The farms, along with a number of others in the area, were the property of the Knight estate. In subsequent years farm management was either carried out by tenants or, when un-tenanted, directly by the estate itself. In 1969 Pinkworthy Farm was refurbished and turned into an educational visitor centre. Around the same time Driver Farm was refurbished and sold to Somerset County Council. Both properties are now owned by the Exmoor National Park Authority.

2.2 Species-rich lowland grassland

The area of semi-natural grassland in the UK has undergone a severe decline as a consequence of post-war agricultural intensification. It is estimated that by 1984 in lowland England and Wales,

semi-natural grassland had declined by 97% over the previous 50 years (Fuller 1987). More recently a 47% loss has been reported between 1960 and 2013 on sites known to have supported species-rich grassland. SSSIs were found to have retained more grassland (91%), compared with non-protected sites (27%), thus highlighting their effectiveness as a means of protecting semi-natural grasslands (Ridding, Redhead & Pywell 2015).

Such widespread loss has led to extensive fragmentation, with remaining grasslands often isolated within the landscape. In addition to loss of habitat, the quality of unimproved grasslands has also declined. An assessment of the condition of semi-natural grasslands on non-statutory sites in England in 2002/2003 found that only 23% of lowland dry acid grasslands were considered to be in good condition, with many lacking positive indicators in sufficient number and frequency and having too high a cover of coarse grasses, due to neglect or agricultural intensification or a combination of the two (Hewins *et al.*, 2005). Losses and deteriorations in condition have led to severe declines in the characteristic plant species of lowland acid grasslands in recent decades. In England the remaining extent of lowland U4 grassland is estimated to be less than 5,000 ha (Robertson & Jefferson, 2000). Of this, around 45% is currently notified as SSSI.

2.2.1 Lowland dry acid grassland

Pinkworthy and Driver Farm is of special interest for its nationally important species-rich pastures characterised by the nationally rare National Vegetation Classification (NVC) type U4 sheep's fescue *Festuca ovina* – common bent *Agrostis capillaris* – heath bedstraw *Galium saxatile* grassland (see the NVC map in Section 7 and photographs 2 and 3). This grassland vegetation community forms part of the 'lowland dry acid grassland' priority habitat, which is included on the list of habitats and species which are of principal importance for the conservation of biodiversity in England, as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. In England the remaining extent of lowland U4 grassland is estimated to be less than 5,000 ha (Robertson & Jefferson, 2000). Of this, around 45% is currently notified as SSSI.

Although Pinkworthy and Driver Farm lies in the upland fringe (and entirely above the 300m contour often used to distinguish lowland from upland) in practice enclosed and unenclosed examples of U4 grasslands differ markedly and, especially in the south and west of Britain, enclosed examples in the upland fringe show more affinity in structure and diversity to lowland types than to those in the unenclosed uplands.

The Guidelines (Part 2, Chapter 3, section 4.11, p.7) state:

“For those grassland types where the total British resource exceeds 10,000 ha (as shown in section A of Annex 1), an exemplar approach to the selection of sites should be taken. The selection should include the best examples within an AOS [Area of Search], ensuring representation of the range of sub-communities and other significant variation. There should be a general presumption to select sites of 5 ha or more, although in the upland fringes and in AOS with extensive representation of the habitat, selection should focus on the largest, diverse and least modified examples.”

U4 grassland is listed in Section A of Annex 1 of the Guidelines. Pinkworthy and Driver Farm SSSI supports 58 ha of U4 grassland (McLay *et al.*, 2019) and significantly exceeds the 5ha threshold above which there is a presumption for selection. However, the site is in the upland fringes and further consideration is required to determine whether Pinkworthy and Driver Farm should be selected.

The AOS for Pinkworthy and Driver Farm is the 'Exmoor' National Character Area (NCA)¹. The NCA profile (Natural England 2014) for Exmoor lists around 800 ha of lowland dry acid grassland. However, this figure, which is derived from Natural England's Priority Habitat Inventory, includes only 1 ha of the grassland at Pinkworthy and Driver Farm, presumably due to past survey coverage

¹ National Character Areas (NCAs) divide England into 159 natural areas, each defined by a unique combination of landscape, biodiversity, geodiversity and economic and cultural activity. NCAs are now used as 'areas of search' for the purposes of SSSI selection (where appropriate) in England. For more information on NCAs, see <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making>

being partial. Consequently the 58 ha of lowland dry acid grassland present at this site (see NVC map at section 6) represents an increase of almost 8% on the total known resource in the NCA.

There are five SSSIs wholly or partly within the NCA that are notified for U4 grassland but only Dunster Park and Heathland SSSI supports enclosed U4 of the type seen at Pinkworthy and Driver Farm. Table 1 below provides a comparison of these SSSIs and shows that the grassland at Pinkworthy and Driver Farm would represent an increase of 41% in the notified U4 resource within the NCA.

Table 1: Comparison of the extent of U4 grassland notified as SSSI within the Exmoor NCA.

Site	Feature type	Extent
Barle Valley SSSI	U4/U20 related	c30 ha
Dunster Park and Heathlands SSSI	U4	8.7 ha
Exmoor Coastal Heaths SSSI	U4/U20 related	16 ha
North Exmoor SSSI	U4/U20 related	54 ha
South Exmoor SSSI	U4/U20 related	<30 ha
Pinkworthy and Driver Farm SSSI	U4	58 ha

When considering diversity, the Guidelines (Part 2, Chapter 3, section 4.11.1, p.7-8) continue:

‘They are deemed to be high quality examples and rate highly on one or more of the following criteria based upon two of the broad criteria outlined in Bainbridge et al., (2013).

Diversity

- (i) The diversity of sub-types within a site: diversity of types is more highly valued than uniformity.*
- (ii) Plant species-richness; very species-rich sites are often of higher value but this should be used carefully as a measure of value, because it may include species indicative of unfavourable site conditions and non-native species. This criterion must be judged using the data in Rodwell (1991, 1992, 2000) or other summary NVC data such as Stevens et al., (2010).*
- (iii) Number and relative abundance of character or positive indicator plant species, including NVC preferential species (eg Rodwell 1991, 1992, 2000, Robertson and Jefferson 2000, JNCC 2004).*

Pinkworthy and Driver Farm supports three sub-communities of U4 grassland (a, b and d) across a range of slope, aspect and management, so constitutes a diverse example (see NVC map at section 6). The U4 sub-communities present are all species rich when compared to the average species number in samples for these sub-communities reported in Rodwell: the U4a grassland supports 54 species compared to an NVC mean of 22 species; the U4b supports 34 species compared to an NVC mean of 20; and the U4d supports 37 species compared to an NVC mean of 28. The communities also support a good range and number of community character species. The site therefore meets criteria i, ii and iii in supporting a high diversity example of lowland dry acid grassland.

2.2.2 Purple moor-grass and rush-pastures

Several of the fields at Pinkworthy and Driver Farm support stands of rush-pasture vegetation particularly in valley bottoms (see NVC map at section 6 and photographs 4 and 5). This is characterised by the nationally rare NVC type M23 sharp-flowered/soft-rush *Juncus acutiflorus/effusus* – marsh bedstraw *Galium palustre* rush-pasture, specifically the M23a *Juncus acutiflorus* sub-community. This vegetation community forms part of the ‘purple moor-grass and rush-pastures’ priority habitat, which is included on the list of habitats and species which are of principal importance for the conservation of biodiversity in England, as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

M23 rush-pasture is listed in Section A of Annex 1 of the Guidelines and is shown as a community that is rare but widespread, again exceeding 10,000 ha.

The Guidelines (Part 2, Chapter 3, section 4.13, p.8) state:

'In the evaluation of sites that contain grassland community mixtures, size thresholds for SSSI selection correspond with those used in the (sub-) community assessment i.e. 0.5ha for mixtures of rare communities and 5ha for more widespread types (sections 4.10 and 4.11).'

Pinkworthy and Driver Farm SSSI supports 4.4 ha of species-rich M23 rush-pasture (McLay *et al.*, 2019). A diverse assemblage of plants associated with this wetter community are present adding to its interest. Consequently, in combination with the 58 ha of U4, the M23 readily exceeds the 5ha selection threshold.

2.3 Assemblage of grassland fungi

The Guidelines (Part 2, Chapter 14, section 4, pp.17-21) are concerned with the distinctive species and assemblages of fungi associated with grasslands that have received no, or limited, agricultural improvements. These fungus-rich grasslands have been collectively termed as 'waxcap grasslands'. The five key groups of fungi (commonly referred to by the abbreviation 'CHEGD' - formed by their initials) associated with these grassland habitats are:

- **Clavarioid** fungi (the clubs, corals and spindles)
- **Hygrocybe** (the waxcaps)
- **Entoloma** (the pinkgills)
- **Geoglossoid** fungi (the earthtongues)
- **Dermoloma** (the crazed caps)

Recent taxonomic changes have resulted in modifications to the CHEGD groups, which are reflected in the recently-published Guidelines (Part 2, Chapter 14). A full definition of the genera included is given in the Guidelines (Part 2, Chapter 14, footnote on p.17).

SSSI selection for waxcap grasslands is largely determined by the number of CHEGD species known from a site, based on fruit-body records. Species totals can be derived from a single visit or from multiple visits in a single year, or over successive, though not necessarily consecutive, years. The Guidelines (Part 2, Chapter 14, section 4.3.2, p.18 and section 4.4.1, p.19) recommend that any site that meets or exceeds one or more group thresholds should be considered for SSSI notification. The CHEGD species count thresholds and respective scores for Pinkworthy and Driver Farm SSSI are presented in Table 2, below.

Table 2. SSSI selection thresholds and scores at Pinkworthy and Driver Farm, based on fruit-body records from survey visits 1997-2018 (Thompson 2000, 2013; McLay & Large 2018).

CHEGD group	Selection threshold	Pinkworthy and Driver Farm SSSI Score
Clavarioids	7	6
<i>Hygrocybe</i> s.l.	19	28
<i>Entoloma</i> s.l.	15	19
Geoglossoids	5	4
<i>Dermoloma</i> , <i>Camarophylloopsis</i> , <i>Hodophilus</i> , <i>Porpoloma</i> (<i>Pseudotracheloma metapodium</i>)	3	0

The counts of 28 *Hygrocybe* s.l.² species and 19 *Entoloma* s.l. species exceed the SSSI selection thresholds. Table 3, below, details all CHEGD species found at Pinkworthy and Driver Farm SSSI for the period 1997-2018.

² *Sensu lato*, meaning 'in a broad sense', used here to indicate that the genus includes taxa previously assigned to it.

Table 3. All grassland fungi (fruit-bodies) recorded at Pinkworthy and Driver Farm SSSI 1997-2018.

CHEGD Species		1997-99	2012-13	2017-18
Waxcap species	<i>Cuphophyllus flavipes</i> ^{*3}	P		P
	<i>Cuphophyllus lacmus</i> ^{* v} ⁴		P	
	<i>Cuphophyllus pratensis</i>	P	P	P
	<i>Cuphophyllus pratensis</i> var. <i>pallidus</i>		P	
	<i>Cuphophyllus russocoriaceus</i>			P
	<i>Cuphophyllus virgineus</i>	P	P	P
	<i>Gliophorus irrigatus</i>		P	P
	<i>Gliophorus laetus</i>	P	P	P
	<i>Gliophorus psittacinus</i>	P	P	P
	<i>Hygrocybe cantharellus</i>			P
	<i>Hygrocybe ceracea</i>	P	P	P
	<i>Hygrocybe chlorophana</i>	P	P	P
	<i>Hygrocybe citrinovirens</i> ^{* v}	P	P	P
	<i>Hygrocybe coccinea</i>	P	P	P
	<i>Hygrocybe conica</i> var. <i>conica</i>	P	P	P
	<i>Hygrocybe glutinipes</i>	P		P
	<i>Hygrocybe helobia</i>	P		
	<i>Hygrocybe insipida</i>	P	P	P
	<i>Hygrocybe intermedia</i> [*]	P	P	P
	<i>Hygrocybe miniata</i>		P	
	<i>Hygrocybe mucronella</i>	P	P	P
	<i>Hygrocybe punicea</i> ^{* v}	P	P	P
	<i>Hygrocybe quieta</i>	P		P
	<i>Hygrocybe reidii</i>	P	P	P
	<i>Hygrocybe spadicea</i> ^{* v} 41 ⁵			P
	<i>Hygrocybe splendidissima</i> ^{* v}	P		P
	<i>Neohygrocybe ovina</i> ^{* v}	P	P	P
	<i>Porpolomopsis calyptriformis</i> ^{* v}	P	P	P
Coral and club species	<i>Clavaria acuta</i>	P		
	<i>Clavaria fumosa</i>		P	
	<i>Clavaria incarnata</i>			P
	<i>Clavulinopsis corniculata</i>	P	P	
	<i>Clavulinopsis fusiformis</i>	P	P	P
	<i>Clavulinopsis helvola</i>	P	P	P
Earthtongue species	<i>Geoglossum fallax</i>	P	P	
	<i>Microglossum atropurpureum</i> agg. ^{* v} 41	P		
	<i>Trichoglossum hirsutum</i>		P	
	<i>Trichoglossum walteri</i> v	P		
Pinkgill species	<i>Entoloma ameides</i>			P
	<i>Entoloma anatinum</i>	P		
	<i>Entoloma atrocaeruleum</i>	P		
	<i>Entoloma bloxamii</i> agg. ^{* v} 41		P	
	<i>Entoloma chalybaeum</i>		P	P
	<i>Entoloma conferendum</i>	P	P	P
	<i>Entoloma corvinum</i>			P
	<i>Entoloma hirtipes</i>		P	
	<i>Entoloma lividocyanulum</i>	P		
	<i>Entoloma lucidum</i>		P	
	<i>Entoloma ortonii</i>		P	
	<i>Entoloma papillatum</i>	P	P	P
	<i>Entoloma poliopus</i> var. <i>poliopus</i>		P	
	<i>Entoloma porphyrophaeum</i> v		P	P
	<i>Entoloma prunuloides</i> v		P	
	<i>Entoloma</i> cf. <i>pseudocoelestinum</i>		P	

³ '**' indicates high diversity indicator species, Bosanquet *et al.*, 2018.

⁴ 'v' indicates 'Vulnerable' on the global IUCN Red List, IUCN 2020.

⁵ '41' indicates section 41 Species, Natural Environment and Rural Communities Act, 2006.

CHEGD Species	1997-99	2012-13	2017-18
<i>Entoloma sericellum</i>	P	P	
<i>Entoloma sericeum</i>			P
<i>Entoloma serrulatum</i>	P	P	P

The Guidelines (Part 2, Chapter 14, section 4.3.2, p.18 and section 4.4.1, p.19) recommend that any site that meets or exceeds one or more CHEGD group thresholds should be considered for SSSI notification. The Guidelines (Part 2, Chapter 14, section 3.1, p.7) state:

“When evaluating and selecting sites for non-lichenised fungi, the principles outlined in Part 1 of the guidelines (Bainbridge et al 2013) should be followed. It is also advisable to consult the country specialist and an expert mycologist because of the taxonomic and ecological complexities of fungi.”

National Significance

Table 4, below, compares Pinkworthy and Driver Farm with other ‘waxcap’ sites in England. Although some variation exists in these evaluations, it is clear that Pinkworthy and Driver Farm is of national importance for its grassland fungi. The high number of globally threatened taxa (IUCN 2020) present, combined with a high diversity of *Hygrocybe* s.l. suggests the site is also ‘internationally important’ (Table 4 in Evans 2004).

Table 4. England site ranking of Pinkworthy and Driver Farm in relation to total CHEG score and species counts of *Hygrocybe* s.l. and *Entoloma* s.l. (fruitbody records 1997-2018).

	CHEG total	CHEG total rank ¹	<i>Hygrocybe</i> rank ¹	<i>Hygrocybe</i> rank ²	<i>Entoloma</i> rank ¹	<i>Entoloma</i> rank ³
Pinkworthy and Driver Farm	57	joint 9 th	joint 7 th	5 th	joint 10 th	8 th

CHEG total = Sum of taxa recorded in the following groups: clavarioid, *Hygrocybe* s.l., *Entoloma* s.l., and geoglossoid

1. Source: English grassland fungi sites database - circa 100 sites evaluated (Natural England unpublished 2019).
2. Source: Smith (2012) - as ‘Pinkery Farm’ in Table 1 (32 *Hygrocybe* sites evaluated).
3. Source: Evans (2004) - adapted to include this site, Nettlecombe Park, Down Farm and The Leasowes (62 sites evaluated).

Significance within Area of Search

The Guidelines (Part 1, section 5.14, pp. 29-30) provide advice on the identification of the best example of sites to represent habitats and species. Specifically, the Guidelines (Part 1, section 5.14.2, p.30) state that:

“The essence of the exemplary site principle procedure is that all of the examples of habitats and species assemblages within an AOS [Area of Search] are compared, to identify the best, and it is only these which are selected. If all similar sites can be arranged in order of merit, selection of the ‘best’ can vary from one to whatever number of examples is judged appropriate by the responsible SNCB [Statutory Nature Conservation Body⁶].”

The AOS for Pinkworthy and Driver Farm is the Exmoor National Character Area. Table 5 allows comparison of the quality of the fungal assemblage at Pinkworthy and Driver Farm with other sites in the NCA known to exceed one or more of the CHEG thresholds. The table has been adapted from Thompson (2000) but uses the original species counts (to the year 1999) to maintain comparability. Note that at that time the CHEG total for Pinkworthy and Driver Farm was only 42 whereas in 2018 it was 57.

⁶ In this case, Natural England.

Table 5 Comparison with other localities in the Exmoor NCA known to meet or exceed at least one CHEGD SSSI selection threshold, in order of decreasing CHEG Total, Thompson (2000).

Site	Approx. area (ha)	CHEG Total	C	H	E	G
Pinkworthy and Driver Farm	70	42	4	26	10	2
Weather Station Field	5	36	5	23	6	2
Dunster Deer Park	35	24	2	20	2	0

Key: C = Clavarioid; H = *Hygrocybe* s.l. ; E = *Entoloma* s.l.; G = Geoglossoid

Pinkworthy is ranked first in the analysis for CHEG Total, *Hygrocybe* s.l. species counts and *Entoloma* s.l. species counts. Weather Station Field, the second highest site (for the same attributes), is under consideration as an extension to the Nettlecombe Park SSSI.

Dunster Deer Park is the only other site in the Exmoor NCA that exceeds the *Hygrocybe* s.l. threshold. However, it has lower species counts for both *Hygrocybe* s.l. and *Entoloma* s.l., and a lower CHEG total than Pinkworthy and Driver Farm. This site occurs within Dunster Park and Heathlands SSSI, thus it is already protected despite fungi not being an interest feature.

Species Significance

Part 1 of the Guidelines (section 5.14.3, p30) states that:

“The occurrence of a greater number of rare communities or species will place one site ahead of another, other conditions being similar.”

Pinkworthy and Driver Farm supports a number of key species (recorded over the period 1997-2018). Twelve species are listed as ‘Vulnerable’ on the global IUCN Red List (IUCN 2020) though only 10 have been recorded since 2012 (see Table 3 and Photographs 7, 8, 9, 10 and 11). In addition, pink waxcap *Porpolomopsis calyptriformis* is considered of conservation concern in Europe with a large part of its European population in Britain (Fraiture & Otto, 2015).

Bosanquet *et al.*, (2018) identify a list of indicator species associated with very rich grassland fungus sites. Eleven of these ‘high diversity indicator’ species have been recorded at Pinkworthy and Driver Farm (see Table 3).

Three species, date waxcap (photograph 6), big blue pinkgill and dark-purple earthtongue are listed as species of principal importance for the conservation of biodiversity in England under section 41 of the Natural Environment and Rural Communities Act (2006). See Table 3.

Conclusions

In addition to meeting the CHEGD species-count thresholds for *Hygrocybe* s.l. and *Entoloma* s.l. taxa, Pinkworthy and Driver Farm SSSI is ranked 1st for CHEGD species in the relevant Area of Search and in the top 10 sites in England for its grassland fungi. The species assemblage is also considered to be of international importance, supporting twelve species classed as ‘Vulnerable’ on the global IUCN Red List (2020).

2.4 Site boundary determination

Pinkworthy and Driver Farm SSSI comprises two discrete parcels of land, separated by improved pasture and a ridge of unenclosed upland grassland, some of which is within the North Exmoor SSSI (see aerial photo at section 7). Both parcels comprise clusters of enclosed fields supporting predominantly species-rich grassland. Internal and external field boundaries are a combination of dry-stone walls, stone-and-earth banks, mature hedges and fences. The boundary of the SSSI has been drawn to include the vegetation communities and the assemblage of grassland fungi of special interest described above. It follows readily identifiable boundary features, with the exception a short section of the western edge of the western parcel (Pinkworthy Farm), where the boundary of the River Barle SSSI extends into riparian habitat within a field which was not notified in its entirety. In this section the boundary of Pinkworthy and Driver Farm abuts and follows that of the River Barle SSSI.

The Guidelines (Part 2, Chapter 3, section 5.1, p.10) state:

“SSSI boundaries should be drawn to encompass the special features of the site and all land necessary to ensure the protection and sustainability of those features... Consideration should be given to the inclusion of whole management units, entire ecological units and land required for supporting processes, such as hydrology. Thus, for example, this may require the inclusion within a site boundary of areas of land supporting grassland communities of lower botanical interest (section B of Annex 1), or non-grassland vegetation.”

In addition to the key grassland communities described above, there are small stands of communities of generally lower botanical interest. On the eastern edge of Pinkworthy Farm there is a steep bank supporting species-poor purple moor-grass, more typical of upland sites. Close to Driver Farm there are areas of agriculturally improved grassland, within management units which also contain features of grassland and fungal interest. These are included within the site boundary as the notifiable interest within these fields could be harmed by inappropriate management of such areas.

The Guidelines (Part 1, Chapter 1, section 5.12.1, p. 29) state that a criterion of potential value should be applied where:

“...the habitat has recently deteriorated through adverse use, [...] where the underlying substrate remains relatively intact and where the complement of characteristic species is still present or can recolonise, and recovery is likely to take place once the adverse pressure is lifted.”

The improved grassland and other incidental vegetation on the site are an integral part of the management units supporting features of interest and there is potential for their restoration to a more species-rich state though appropriate management practices. In relation to the fungal interest, the Guidelines (Part 2, Chapter 14, section 5.3, p.22) state:

“Further advantages may stem from incorporating surrounding habitat. In keeping with the Potential Value criterion (Bainbridge et al., 2013), future habitat continuity issues may be averted...”

3. Assessment of the current condition of Pinkworthy and Driver Farm SSSI

Site units*	Interest features	Reported condition**	Assessment Date
1 Pinkworthy Farm	Acid grassland, rush pasture, grassland fungi	Favourable	October 2018
2 Driver Farm			

* **Site units** are divisions used by Natural England for administrative purposes only.

** Reported condition

SSSIs are notified because of special biological or geological features. When these features are being managed so that their special nature conservation interest is being maintained they are said to be in favourable condition. This is a United Kingdom standard and the terminology and definitions are more fully described in ‘A Statement on Common Standards for Monitoring Protected Sites’, produced by the Joint Nature Conservation Committee in 2018.

4. Selection of ‘operations requiring Natural England’s consent’

Natural England selects operations from a master list when determining the list of operations requiring consent for individual SSSIs. The selection is based on the likelihood that the operations may cause damage to the special features that are the reasons for notification of the SSSI. As well as selecting operations from the master list, the precise wording of each operation may be tailored to suit the particular circumstances at the site.

It is not possible to predict every possible eventuality that may arise on a site but the aim is to identify all operations where it is reasonably foreseeable that, if carried out at certain times or in a

particular manner somewhere within the SSSI, they are likely to damage the special interest features. The table below records at least one reason justifying the inclusion of each operation in the list for Pinkworthy and Driver Farm SSSI. It is not intended to be exhaustive and in most cases there will be other ways in which the specified operation is likely to cause damage.

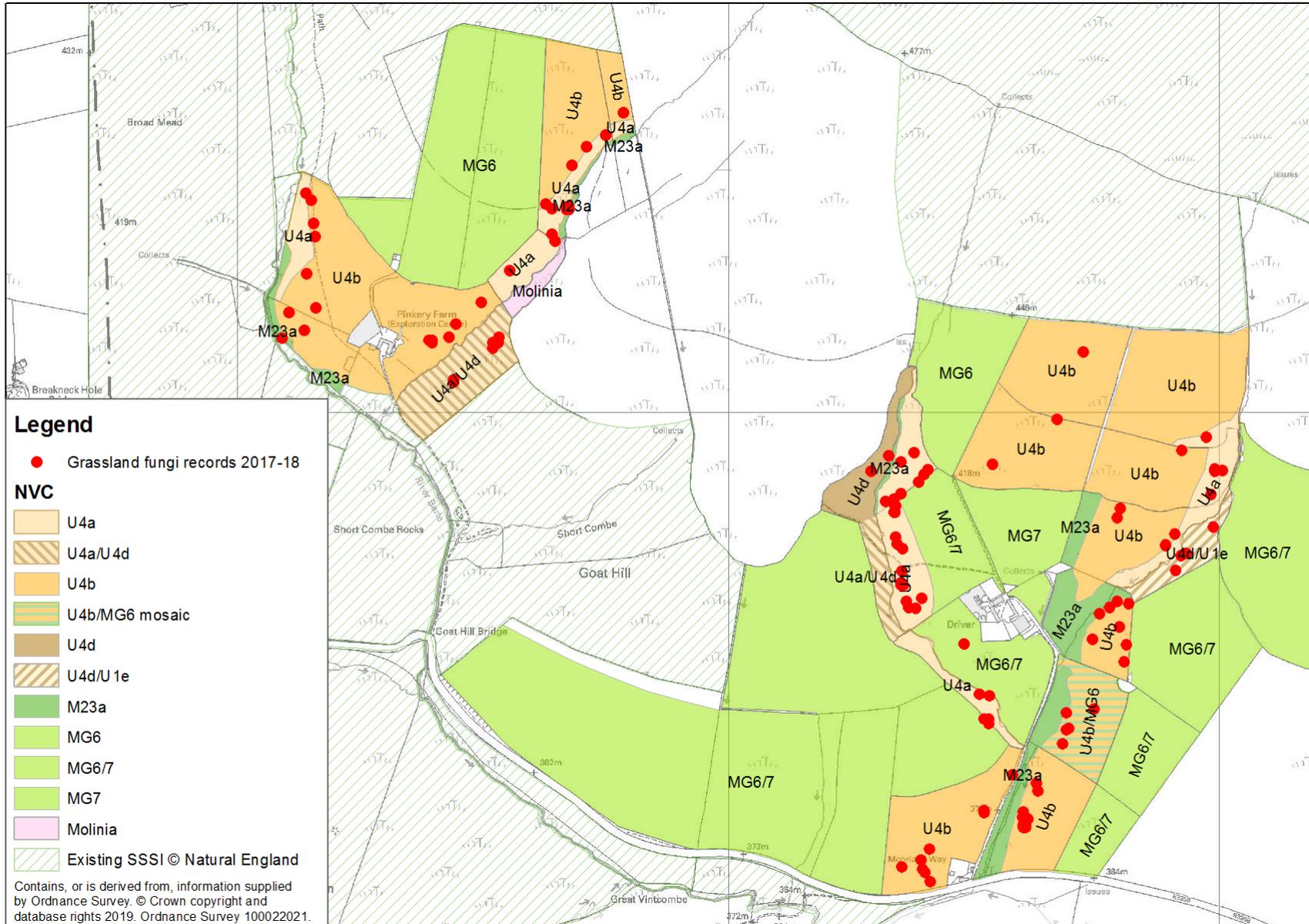
Standard reference number	Type of operation	At least one reason for listing
1.	Cultivation, including ploughing, rotovating, harrowing and re-seeding.	Grassland and fungi could be destroyed.
2.	Grazing and alterations to the grazing regime (including type of stock, intensity or seasonal pattern of grazing).	Features sensitive to over or under grazing, which could lead to changes in community composition.
3.	Stock feeding and alterations to stock feeding practice.	Could lead to localised nutrient enrichment or poaching which would damage grassland and fungi.
4.	Mowing or cutting vegetation and alterations to the mowing or cutting regime (such as from haymaking to silage).	Grassland and fungi sensitive to cutting or mowing, which could lead to changes in community composition if carried out inappropriately.
5.	Application of manure, slurry, silage liquor, fertilisers and lime.	Grassland and fungi sensitive to nutrient enrichment, which could lead to dominance by competitive species.
6.	Application of pesticides, including fungicides and herbicides (weedkillers) whether terrestrial or aquatic, and veterinary products.	Grassland, fungi and associated flora/fauna all sensitive to these, both through direct loss and changes to community composition.
7.	Dumping, spreading or discharging of any materials.	Risk of obscuring/smothering grassland, damaging fungi and effects of leachate.
8.	Burning.	Grassland and fungi sensitive to burning, both through direct loss and change to community composition.
9.	Release into the site of any wild, feral, captive-bred or domestic animal, plant, seed or micro-organism (including genetically modified organisms).	Could lead to unforeseen interactions with indigenous species and changes in community composition.
10.	Killing, injuring, taking or removal of any wild animal (including dead animals or parts thereof), or their eggs and nests, including pest control and disturbing them in their places of shelter.	Could lead to unforeseen changes in community composition, for instance if key herbivores, pollinators or predators affected. Direct damage to sward and fungi could result from some methods.
11.	Destruction, displacement, removal or cutting of any plant, fungus or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungal fruiting body, leaf-mould or turf.	Damage to grassland habitats and constituent species and fungi.
12.	Tree and/or woodland management and alterations to tree and/or woodland management (including planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition, removal of fallen timber).	Risk of incidental damage to grassland and fungi, direct loss and changes in community composition due to shading.

Standard reference number	Type of operation	At least one reason for listing
13a.	Draining (including the use of mole, tile, tunnel or other artificial drains).	Risk of incidental damage and direct loss to grassland and fungi.
13b.	Modification to the structure of water courses (streams, springs, ditches, dykes, drains), including their banks and beds, as by re-alignment, regrading, damming or dredging.	Risk of incidental damage and direct loss to grassland and fungi.
13c.	Management of aquatic and bank vegetation for drainage purposes	Risk of incidental damage and direct loss to grassland and fungi.
14.	Alterations to water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes). Also the modification of current drainage operations.	Grassland sward sensitive to changes in hydrology. Direct damage to grassland and fungi in the immediate vicinity.
15.	Infilling or digging of ditches, dykes, drains, ponds, pools, marshes or pits.	Direct damage to grassland and fungi.
20.	Extraction of minerals including hard rock, sand and gravel, topsoil, subsoil and spoil.	Direct loss of grassland and fungi.
21.	Destruction, construction, removal, re-routing or re-grading of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, including soil and soft rock exposures or the laying, maintenance or removal of pipelines and cables, above or below ground.	Direct loss of or incidental damage to grassland and fungi.
22.	Storage of materials.	Risk of obscuring/smothering grassland and fungi, and effects of leachate.
23.	Erection of permanent or temporary structures or the undertaking of engineering works, including drilling.	Direct loss of important habitats and fungi.
26.	Use of vehicles or craft.	Damage to grassland fungi, for instance from soil compaction or wheel-rutting.
27.	Recreational or other activities likely to damage or disturb the interest features of special interest.	Damage to grassland and fungi, for instance due to excessive trampling.
28a.	Game and waterfowl management and hunting practices and alterations to game and waterfowl management and hunting practice.	Inappropriate location and types could damage grassland and fungi, for instance nutrient enrichment around feeders.

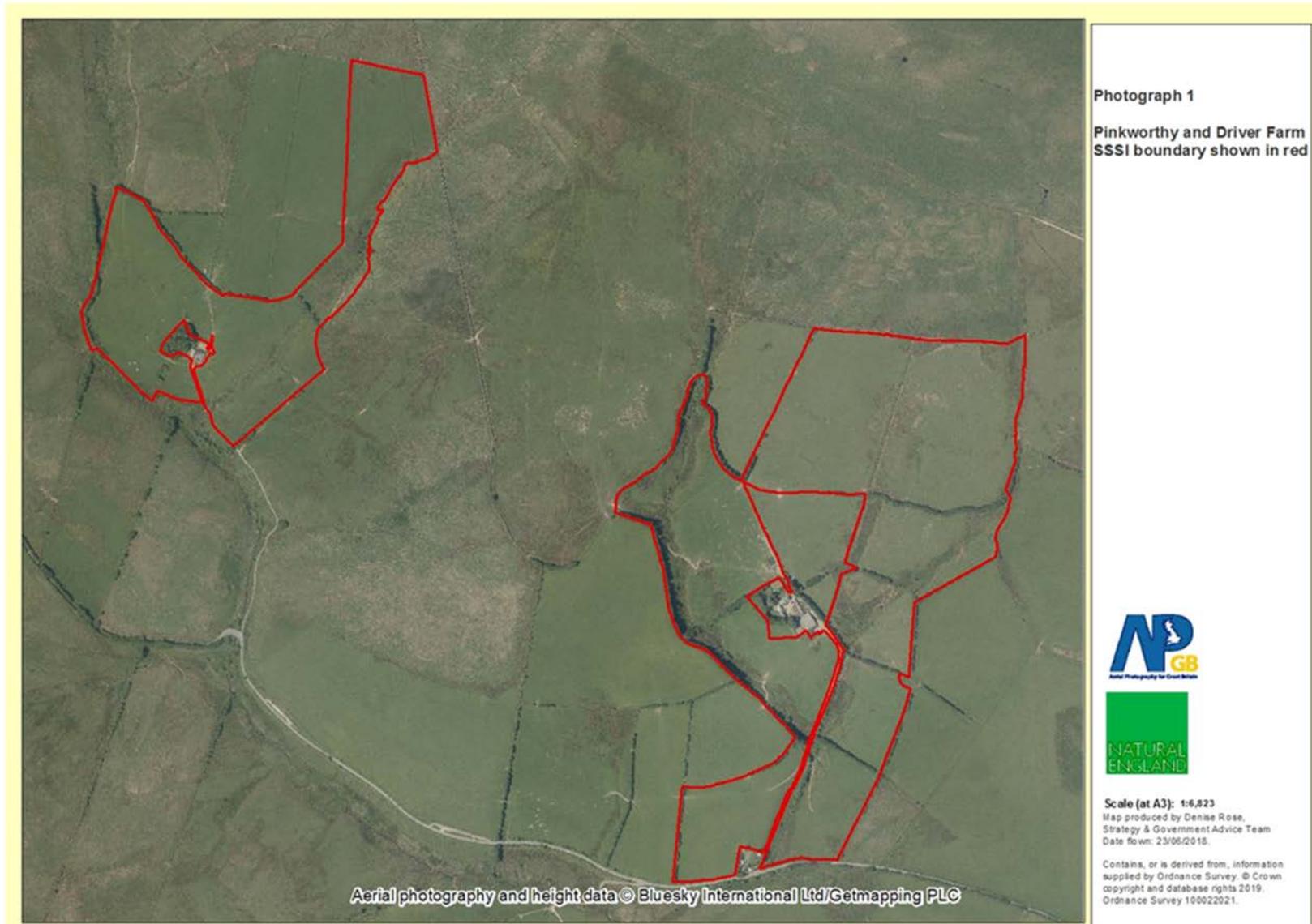
5. Site unit map

The map on the following page shows the provisional boundary of the site units, which are divisions used by Natural England for administrative purposes only.

6. NVC map and grassland fungi records 2017-18.



7. Photographs



Photograph 2: Unimproved acid grassland (U4a) on valley sides.



Photograph 3: U4b grassland on more level ground.



Photograph 4: M23a rush-pasture in valley bottom



Photograph 5: Unimproved sward with heath-grass *Danthonia decumbens*



Photograph 6: Date waxcap



Photograph 7: Blushing waxcap



Photograph 8: Citrine waxcap



Photograph 9: Pink waxcap



Photograph 10: Splendid waxcap



Photograph 11: Crimson waxcap

