

Kent Rare Plant Register

Draft species accounts

Part D



Kent rare plant register

This section of the register covers:

Dactylorhiza incarnata
Dactylorhiza maculata
Daucus carota subsp. *gummifer*
Descurainia sophia
Dianthus armeria
Dianthus deltoides
Dipsacus pilosus
Drosera rotundifolia
Dryopteris aemula

It is issued in draft, pending further development. Records, photographs and information regarding the Kentish occurrences of these plants will be welcome.

The register accounts give priority to data from 2010 onwards, but some historic data are also included (however, in the data tables, generally no specific sites without post-1970 records) so as to indicate trends and where the plant may yet be discovered or rediscovered

See the Kent webpage of the BSBI website at <http://www.bsbi.org.uk/kent.html> for:

- the full Kent rare plant register list
- the introduction to the register
- a list of 'probably extinct' Kent plants.

Abbreviations used in the text:

Recorders' initials:

AB Alan Blackman
 BH Betsy Hewson
 BW Brian Woodhams
 CC Chris Cook
 CR Chris Rose
 DJ David Johnson
 DM Daphne Mills
 DS David Steere
 EH E.M. Hillman
 EGP Eric Philp
 FR Francis Rose
 GK Geoffrey Kitchener
 HS Heather Silk
 IHB Ilse Hendriks-Bevan
 JA Jan Armishaw
 JBe Jim Bevan
 JBel J. Belsey
 JB John Badmin
 JP Joyce Pitt
 JRP John Palmer
 JT John Taplin
 JW Jo Weightman
 LH Lorna Holland
 LR Liam Rooney

MGa Megan Gasson
 MK M.E. Kennedy
 NB N.H. Bertrand
 PA Pat Acock
 PF Peter Forrest
 PHe Peter Heathcote
 PR Paul Ripley
 PS Philip Sansum
 RC Ray Clarke
 RF Rosemary FitzGerald
 RMB Rodney Burton
 RR Rosemary Roberts
 SH Sam Hartley
 SB Sue Buckingham
 SK Sarah Kitchener
 SM S. Steve McArragher
 SW Steve Weeks
 PW Philip Wilson
 WHG W.H. Griffin

Other abbreviations:

BPS British Pteridological Society
 CGE University of Cambridge Herbarium
 det. Identity determined by
 KFC Kent Field Club
 KWT Kent Wildlife Trust
 LNHS London Natural History Society
 MNE Maidstone Museum Herbarium

Dactylorhiza incarnata (L.) Soó (Early Marsh-orchid)

Draft account

vc 15 and 16

Rarity / scarcity status:

Dactylorhiza incarnata is fairly widespread in the British Isles, and its subspecies *incarnata* is not regarded as being subject to conservation concerns generally. This is the subspecies which is known in Kent where, however, there are very few colonies, so that its county status is **scarce**.

Holborough Marshes. Photo by Greg Hitchcock, 2005

Account

The Early Marsh-orchid has always been scarce in Kent, and was not published for the county until 1869, when J.T. Boswell Syme mentioned in the third edition of *English Botany* that he held a specimen or specimens from Kent, but without giving any more detailed location. There is an earlier sheet of specimens labelled as this species collected by Joseph Woods in 1845 from Maidstone, east of the Medway, held at the South London Botanic Institute. Old records, however, could exist under the name *Orchis latifolia*, which was used to cover both this taxon and *Dactylorhiza praetermissa* (Southern Marsh-orchid).

Hanbury and Marshall (1899) regarded *Dactylorhiza incarnata* as rare in moist meadows, but could only give records for Minster Marshes in Thanet (from John Stuart Mill's herbarium), Lamberhurst and Ham Ponds. The latter location has had a long history of occurrences, the species having been found at Ham Fen by Francis Rose in 1991. In recent times, the most



constant records - given in both Philp (1982) and Philp (2010) - have been from the Snodland area, in particular Holborough Marshes KWT reserve. The hybrid between this species and *Dactylorhiza praetermissa* has been recorded at Snodland (by Eric Philp in 1980 at TQ76A). Also, the hybrid with *Dactylorhiza fuchsii* is known from Holborough (seen by Daphne Mills on 27 May 2013 at TQ7062¹). Setting aside the Snodland/Holborough tetrads of TQ76A & B, three other tetrad records for Early Marsh-orchid were given by Philp (1982), and two different ones by Philp (2010), which suggest that this can also be a plant which comes and goes.

Holborough Marshes, habitat. Photo by Stephen Lemon, June 2013

¹ A photograph of this plant was sent to Richard Bateman, who remarked that 'this particular hybrid combination does tend to be especially vigorous and characterised by over-expressed barred leaf markings, and although the flower resembles *fuchsii* more closely than *incarnata*, the wide spur and relatively robust bracts speak of marsh orchid genes'.

Dactylorhiza incarnata requires damp, base-rich ground. The Kent chalk pit locations will obviously have supplied a strongly calcareous substrate; the (former) Shoreham site in the Darent valley will have been influenced by the adjoining North Downs chalk; and Holborough Marshes is similarly influenced by the North Downs chalk through which the Medway Gap runs. The base influence, however, is not so obvious at Cowden Meadows, which is regarded as a neutral grassland site. This Marsh-orchid has distinctively yellow-green, erect leaves, hooded at the tip; the flower lip has sides which are strongly and distinctively turned back. Subspecies *incarnata* usually bears flowers of a delicate flesh-colour, hence the name.

Site	Grid reference	Site status	Last record date	Recorder	Comments
Cowden Meadows	TQ4741, TQ4841	SSSI	(1) 21 June 2015 (2) 12 June 1982 (3) After 1970, before 1981	(1) SL (2) JP (3) Philp (1982)	(1) (a) Single plant near public footpath, TQ4741. (b) TQ4805841465, single plant with pale flowers, broken loop on labellum, on flushed slope. (2) TQ 479 415. (3) Given as TQ44Q. Found in 1970 by RC.
Shoreham	TQ56G		After 1970, before 1981	Philp (1982)	Also recorded by FR in a wet alluvial meadow north of Shoreham in 1954 (appears to be TQ5262). The site was destroyed in the 1970s (RMB, pers. comm.), leaving no suitable habitat in the Darent Valley. There are other historic records in the Darent valley, e.g. as frequent in meadows by the river above Eynsford and Lullingstone (1904, WHG).
Snodland, including Holborough Marshes	TQ76A & B	Holborough Marshes, KWT managed reserve	(1) 2 June 2015 (2) 2013. (3) after 1990, before 2006 (4) 23 June 2000 (5) TQ7062, 23 June 1980	(1) SW (2) various (3) Philp (2010) (4) JEGP & PHe (5) FR	(1) Count of 237 flowering spikes, assumed to be for TQ7062. (2) Known to many botanists at the Holborough Marshes reserve and a count of 302 flowering spikes was made by SW, 13 June 2013. The species is well scattered there - sample locations are TQ706623 and TQ707624. (3) Recorded as TQ76A. (4) Recorded as TQ76B. (5) Fen meadow north east of Snodland (appears to be Holborough Marshes).
Leeds	TQ85H		After 1970, before 1981	Philp (1982)	Wet meadow.
Lydd Airport	TR0621		6 and 9 June 2005	JP	
Near Wickhambreaux	TR25J		After 1970, before 1981	Philp (1982)	Marshy area.
Plucks Gutter	TR26R		After 1970, before 1981	Philp (1982)	Also recorded here in fen pasture by FR in 1952.
Ham Fen	TR3454		24 July 1991	FR	

Dactylorhiza maculata (L.) Soó (Heath spotted-orchid)

Draft account

vc 15 and 16

Rarity / scarcity status:

The Heath Spotted-orchid is widespread and fairly common in the British Isles, other than in parts of central and east England (excluding East Anglia). Whilst there has been some decline due to loss of lowland heath and bog habitats, its threat status is regarded as of 'Least Concern' both in England and in Great Britain generally. Kent has been affected by such losses, and there are relatively few colonies; it is accordingly ranked as **scarce** in the county.

Account:

Historic local floras provide little evidence of early occurrences and population trends for this species, for it was long aggregated with the Common Spotted-orchid, *Dactylorhiza fuchsii*, and the name *Orchis maculata* was used to cover them both. For British botanists, the distinction between them was made clear by G.C. Druce in 1915². Druce's clarification was soon followed by *D. maculata* being collected in west Kent, a specimen gathered by Davis from Keston Common in 1917 being held in MNE. A typical example of earlier ambiguous nomenclature is G. E. Smith's *Catalogue of rare or remarkable phaenogamous plants, collected in South Kent* (1829). In this he refers to the spotted palmate orchis, *maculata*, as being found "Upon bogs, and high dry situations. Pale and conspicuous, upon Willesboro' Leas". We may surmise that the plants in high dry situations would now be called *Dactylorhiza fuchsii*, but those upon bogs are likely to have been



Dactylorhiza maculata; and so far as concerns Willesborough, *Dactylorhiza maculata* was still here in 1955, when recorded by Francis Rose.



Hothfield. Photos by Liam Rooney, 15 June 2010

There is some ostensible evidence of decline in this species in the county: whereas it was recorded in nine tetrads in the 1971-1980 administrative county survey, there were only six such records in the 1991-2005 survey (Philp, 2010). However, records during 2010-16 amount to finds in ten tetrads, many of them being squares where presence was recorded either in Philp (1982) or Philp (2010), so that there is a fair degree of continuity over the last 45 years. The number of records is such that the species is frequent enough only just to qualify as scarce; and warrants mapping here.

² Supplement to Botanical Society Report for 1914, Part II. *Orchis maculata* and *O. fuchsii*, *BEC Rep.* (1915) 4: 99-108.

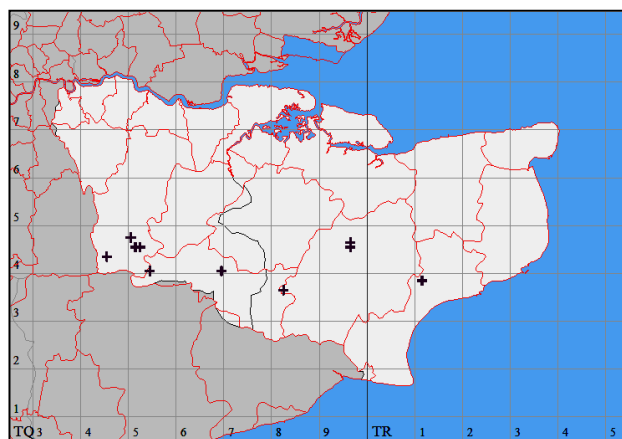
Dactylorhiza maculata (Heath Spotted-orchid) 2010-16

Heath-spotted orchid is a plant of wet acid areas, generally overlying sand formations, in the southern half of the county, and has been recorded there in valley bogland, wet meadow, sand pit and (rarely) woodland ride habitats. Within its limited Kent distribution, it can be quite numerous, as at Hothfield. It may be distinguished from the similar Common-spotted Orchid, with which it sometimes grows, by the central lobe of the labellum being



half the width of

the laterals or more, and much the same length as the laterals or less.



Hemsted Forest, habitat. Photo by Philip Sansum, 19 June 2014.

Dactylorhiza maculata is a modest-sized plant, and larger, more robust plants may well be hybrids with *Dactylorhiza fuchsii*. This cross has been recorded at the edge of Bedgebury Forest (TQ73B, EGP, 2002), at Hothfield (JA, 2010) and at Gibbin's Brook (TR1138, KBRG meeting 30 June 2013). Heath Spotted-orchid has also been found to cross with *Dactylorhiza praetermissa* (Southern Marsh-orchid) at Hothfield (TQ94T, EGP; TQ9645, 29 May 2012, SB conf. DJ), Gibbin's Brook (TR13E, EGP and TR11609 38703, KBRG meeting 30 June 2013) and Lenham (TQ94E, JP).

Site	Grid reference	Site status	Last record date	Recorder	Comments
South east of Marsh Green	TQ44L	SSSI, KWT reserve	(1) 13 June 2015 (2) After 1990, before 2006	(1) SL (2) EGP (Philp, 2010)	(1) TQ 459 434 / TQ 459 432, over 200 plants flowering with smaller numbers of <i>Dactylorhiza fuchsii</i> at Cowden Pound Pastures. (2) Recorded as TQ44L.
Ashurst	TQ53E		After 1970, before 1981	Philp (1982)	
North of Langton Green	TQ5440		18 September 2016	SL	Burnt Wood (ghyll east of Avery's Wood), c. TQ 546 408. Single seeding plant near eastern bank of ghyll stream, identified by scattered stomata along upper edge of leaf.)
North west of Penshurst	TQ54C		After 1970, before 1981	Philp (1982)	
Polebrook	TQ5047	SSSI	(1) 20 June 2015 (2) 7 July 2013	(1) IHB (2) SL	(1) KFC meeting (2) Two flowering plants at Polebrook Meadows, growing with flowering <i>D. fuchsii</i> and seeding <i>D. praetermissa</i> , TQ 50554 47837 and TQ 50569 47871. Associates were <i>Rhinanthus minor</i> , <i>Silene silaus</i> , <i>Carex pallescens</i> , <i>Carex flacca</i> , <i>Potentilla erecta</i> and <i>Centaurea</i>

					<i>nigra</i> agg.
Chiddingstone, west of Moorden	TQ5145		(1) 12 June 2016 (2) 16 June 2013	(1) & (2) SL	(1) Moorden Meadow, present in area of open damp grassland at far end of north facing slope down to stream, TQ 51966 45888. Also, flat valley bottom beside public footpath, north side of stream, dominated by <i>Juncus</i> , TQ 51964 45916.; Single plant away from main population on flushed north facing slope on south side of stream. (2) Grassy bank fenced off from grazing, c. TQ 519 458, Moorden.
Moorden	TQ54H		(1) 12 June 2016 (2) 21 June 1982 (3) After 1970, before 1981	(1) SL (2) KFC meeting (3) Philp (1982)	(1) Moorden Meadow, flushes on north facing slope down to stream, TQ 520 459 / TQ 521 459. Large number of plants flowering, spread along open bank. (2) Present at Moorden. (4) Recorded as TQ54H. Recorded at Moorden (TQ5245), by FR in 1948, valley bog.
South of Ightham	TQ55X		After 1990, before 2006	Philp (2010)	It was also present in a sand pit south of Ightham in 1950 (FR).
West of Lamberhurst	TQ63M		After 1970, before 1981	Philp (1982)	May be same as boggy field west of Ellis Wood, recorded by FR in 1948, but this area now (2012) appears occupied by a lake.
South east of Brenchley	TQ64V		(1) 13 June 2015 (2) After 1970, before 1981	(1) SL (2) Philp (1982)	(1) TQ 69298 40965, a single flowering plant under dry semi-shaded woodland with <i>Melampyrum pratense</i> on southern edge of Furnace Pond.
Bedgebury Forest	TQ7333		2 July 1999	JW & JP	TQ 735 330.
East of Sissinghurst	TQ83D		4 July 2001	EGP, BW	
Hemsted Forest	TQ8236		19 June 2014	PS	TQ 8206 3627.
West of :Pluckley	TQ94C		After 1970, before 1981	Philp (1982)	
Hothfield	TQ9645	SSSI, KWT managed reserve	(1) 17 July 2016 (2) 2 July 2013 (3) 15 June 2010 (4) 26 June 2008 (5) After 1990, before 2006	(1) & (2) DS (3) JA (4) DM (5) EGP (Philp, 2010)	(1) Main bog. (2) TQ 967 455 and scattered elsewhere over reserve. (3) TQ 96951 4570, 150+ plants present on bog 2, plus hybrids with <i>D.fuchsii</i> . (4) TQ 9686 4572. (5) Given as TQ94S.
Tut Hill/Hothfield	TQ9646		(1) 2 July 2013 (2) After 1990, before 2006	(1) DS (2) EGP (Philp, 2010)	(1) TQ 965 462. (2) Given as TQ94T.
Gibbin's Brook	TR1138	CROW access land, SSSI	(1) 30 June 2013 (2) 6 July 2008 (3) After 1990, before 2006	(1) KBRG meeting (2) JP (3) EGP (Philp, 2010)	(1) Scattered plants in wet ground of both northern and southern bogs. (2) TR 118 380. (3) Recorded only as TR13E.

***Daucus carota* L. subspecies *gummifer* (Syme) Hook. f. (Sea Carrot)**

Draft account

vc 15

Rarity / scarcity status:

Sea Carrot has a southern and western distribution along British coasts and is also present in southern Ireland. It is nationally scarce, but not regarded as under any particular threat, and so its conservation status is of 'Least Concern' both in England and in Great Britain as a whole. Its eastern British distribution is extremely local, and it would be treated as rare in Kent if the criterion of three or less tetrad records in Philp (2010) were applied. However, further records have been made, and it would be appropriate to treat this taxon as **scarce** in Kent.

Account:

The first Kent record of this subspecies was published in 1724, in the third edition of John Ray's *Synopsis Methodica Stirpium Britannicarum*, revised by Dillenius. This refers to *Daucus maritimus lucidus* as having being 'Found near Dover by Mr. J. Sherard and Mr. Rand'. There is a long history of continuity at this location, the plant having been collected by Charles Babbington in 1844 (CGE) and still present at Dover Western

Heights in 2010. Hanbury and Marshall (1899) refer to the Sea Carrot as present between Ramsgate and Margate, as well as citing Dover / Folkestone records. However, it now appears to have long gone from Thanet. This left, at least in the 1950s and 1960s, colonies along the coast from Folkestone to Kingsdown, Francis Rose having recorded it at Folkestone Warren (1960), East Wear Bay cliffs (1947), Abbot's Cliff (1956), Lydden Spout (1955), St Margaret's Bay (1957) and Hope Point, Kingsdown (1956). From this stretch of coast, Philp (2010) gave records only at Abbot's Cliff, Dover and Langdon Bay. However, this does not represent a contraction, as Sea Carrot has since been found still present from Folkestone to Kingsdown, although not all localities in between have been surveyed.



Samphire Hoe. Photo by Sue Buckingham, 16 August 2011

The Sea Carrot in the British Isles is a plant of cliff grassland and stable sand dunes. In Kent, it is not found on dunes. It is present on cliff slopes, in *Brachypodium pinnatum* agg. (Tor-grass) back from the top of cliffs (where the up-

draught may have deposited seeds) and at the base as well, and is one of the most constant species in the plant community MC4 (*Brassica oleracea* maritime cliff-edge community). Other constant species are *Brassica oleracea* (Wild Cabbage), *Dactylis glomerata* (Cock's Foot) and *Festuca rubra* (Red Fescue).

Hanbury and Marshall (1899) were of the view that the plant is sufficiently distinct that it should rank as a separate species. It is currently treated as a subspecies of *Daucus carota*, being distinguished through the umbels being convex to slightly concave in fruit (as distinct from very contracted and concave).

Dover. Photo by Sue Buckingham, 13 August 2011



Site	Grid reference	Site status	Last record date	Recorder	Comments
Folkestone	TR2336		8 October 2011	SB	Base of low cliffs, several plants at TR 23742 36315.
Copt Point	TR2436		8 October 2011	SB	Several plants on low cliffs at TR 24036 36471.
Abbot's Cliff	TR23U		(1) 27 October 2014 (2) 22 July 2012 (3) After 1990, before 2006	(1) GK & SK (2) SB (3) EGP (Philp, 2010)	(1) TR 277 387, a thin scatter in grassland just inland of cliff-tops, <i>D. carota</i> subsp. <i>carota</i> also present. (1) Cliff-top grassland at TR 27050 38622. (2) Recorded as TR23U.
Samphire Hoe	TR2838		(1) 27 October 2014 (2) 16 August 2011	(1) GK & SK (2) SB	(1) One plant in Tor-grass, 15m inland of the cliff-top edge (2) Four plants at base of cliffs, TR 28346 38753.
Dover Western Heights	TR3140		2 March 2010	GK	Roadside below cliffs. Philp (2010) also gives a more general reference of TR34A.
Dover - Langdon	TR3342	SSSI	13 August 2011	SB	2 plants alongside chalk cliff path.
Langdon Bay	TR34L	SSSI	17 June 2000	JBe & EGP	
South Foreland	TR3643	SSSI	21 September 2014	GK	One plant in chalk grassland near cliff edge.
St Margaret's at Cliffe - Bockhill	TR3745	SSSI	21 September 2014	GK	One plant in chalk grassland close to cliff edge.
Walmer & Kingsdown Golf Course	TR3747		29 June 2006	JP	TR 368 470.
Kingsdown – Oldstairs Bay	TR3847		31 August 2011	SB	Four plants in rifle range at TR 38079 47197; 12 plants at base of chalk cliffs at TR 38103 47154; about 20 plants in rifle range TR 38073 47233.

Descurainia sophia (L.) Webb ex Prantl (Flixweed)

Draft account

vc 15 and 16

Rarity / scarcity status:

Descurainia sophia is an archaeophyte, or ancient introduction, which is widespread as an arable weed, especially in East Anglia. There was a national decline before 1930, but its distribution is regarded as having stabilised and so its conservation status is considered to be of 'Least Concern' for England and Great Britain. However, there is evidence of a major decline in Kent since the 1970s, such that it is now **scarce** in the county.

Sandwich. Photo by Liam Rooney, 8 June 2011

Account:

The first published record for Flixweed was by Thomas Johnson in the account of his first botanical Kent journey with apothecary colleagues, *Iter Plantarum* (1629)³. He mentions having collected *Sophia Chirurgorum* en route from Stoke to Cliffe. The contemporary name meant 'the wisdom of surgeons', and so the plant was an appropriate discovery for a group of apothecaries. Francis Rose commented in the 1972 edition of *Iter Plantarum* that the species was still at Cliffe.

Hanbury and Marshall (1899) regarded it as a plant of fields, roadsides and waste ground, not common, and confined to the north of the county, especially near the sea. This basic distribution pattern was still evident from the 32 tetrad records in Philp (1982) for the period 1970-1981, although there were a few inland records and occurrences as far south as Dungeness. In the course of the 1991-2005 survey published as Philp (2010), however, it could only be traced in arable fields or disturbed road verges in five tetrads. It is not clear what may lie behind this marked decline. It is unlikely to be herbicides, since this species has shown resistance to a range of them.

Descurainia sophia is an annual which may over-winter as young rosettes. It favours light or sandy soils of arable or otherwise open disturbed ground. It is long-persistent in some localities. As well as at Cliffe, mentioned above, populations at Sandwich have been of long standing, its presence having been mentioned by the author of *Notes and Observations made during a Week's Botanizing in South Kent* in the *Phytologist* of June 1861.

The seeds may spread through wind dispersal, birds and agricultural activities. The species is distinct from other yellow crucifers by virtue of its finely divided leaves.



Site	Grid reference	Site status	Last record date	Recorder	Comments
Deptford	TQ3777	Nature park	1992	NB	Casual at (inferred) TQ 374 774.

³ This is wrongly attributed by Hanbury and Marshall (1899) to the second journey, undertaken in 1632.

(metropolitan vc16)					
Downe (metropolitan vc16)	(Probably) TQ4262		1971	EH & MK	On small earth tip north of Downe.
Otford	TQ5357		10 July 1971	RMB	One plant on Vestry Road estate, a remnant of a larger population found by BH in 1967 or 1968.
Fawkham	TQ5967		27 October 1985	RMB	A good colony round a heap of old horse manure in a field near Fawkham Church. Found by JRP and shown on LNHS meeting, 27 June 1981.
Teston	TQ75B		After 1990, before 2006	Philp (2010)	
Linton TQ75K			After 1990, before 2006	Philp (2010)	
Gillingham	TQ76Z		After 1990, before 2006	Philp (2010)	
Cliffe	TQ77I		After 1990, before 2006	Philp (2010)	
Faversham	TR06A		After 1990, before 2006	Philp (2010)	
Whitstable	TR1066		15 May 2011	JB	TQ 108 668, one plant, backstreet weed.
Sandwich	TR3459		30 June 1984	RMB	Sandwich Bay beyond Downs Farm.
Sandwich	TR3559		(1) 23 May 2011 (2) 7 August 1986	(1) SB (2) RF, FR	(1) 300 to 400 plants in 10 square metres of bare sand on golf course, TR 35269 60161. (2) TQ 356 593
Sandwich	TR3560		(1) 23 May 2011 (2) 13 August 1986	(1) SB (2) RF	(1) 7 plants on bare sand beside track. (2) TQ 354 600.



Sandwich. Photos by Liam Rooney, 8 June 2011

Dianthus armeria L. (Deptford Pink)

Draft account

vc 15 and 16

Rarity / scarcity status:

Dianthus armeria is a plant of southern England which has been in decline since before 1930 so as to become nationally scarce, and whose status is now **Endangered** both in England and in Great Britain as a whole. In the 1980s it was reduced nationally to 19 sites, and in the 1980s, 13-16 sites⁴. Plantlife (2007)⁵ assessed that, in terms of its distribution in 10km squares across Britain, the species in 2003 could only be found in 7% of its historic area. Few British sites have substantial numbers of plants, and Kent's population at Farningham Wood has been ranked by Plantlife as the largest in Britain. Deptford Pink is a priority species under the UK Biodiversity Action Plan which notes habitat loss and poor recruitment as threats, and identifies management and surveillance as appropriate actions. In Kent, the species is **rare** as well as the county containing a population of national significance.

Account:

The name of Deptford Pink suggests that this is a plant whose origins lie in West Kent. Gerard gave this name in his *Herball* (1597) to "a Wilde creeping Pinke, which growth in our pastures neere about London, and other places, but especially in the great field next to Detford, by the pathside as you go from Redriffe to Greenewich". This is clearly a description of *Dianthus deltoides* (Maiden Pink), which has a creeping habit; *Dianthus armeria* does not. However, in the 1633 edition, Thomas Johnson added an illustration of *Dianthus armeria*, calling this the "Deptford Pinke". This is puzzling, as there is no doubt that Johnson knew what *Dianthus armeria* was (the evidence for this set out in a paper in *Journal of Botany* (1892) 30: 177-178). For ever after, Deptford Pink has been the name of the plant which Gerard did not describe as from Deptford. In a bid to give some colour to a Kent origin, Hanbury and Marshall (1899) suggest that most probably both species grew at Deptford in Gerard's day, but there is no evidence of this.



Sandwich. Photo by Liam Rooney, 15 June 2011.

Ironically, the first publication of a Kent record for *Dianthus armeria* is also by Thomas Johnson, noted in his *Iter Plantarum* (1629) as encountered on 14 July 1629 in travelling from Gillingham to the Sheppey crossing. He also recorded it in his subsequent journey, published as *Descriptio Itineris Plantarum* (1632), as present en route between Sandwich and Canterbury.

In some parts of the county, it was clearly not uncommon in the 19th century. The Revd. Edward Edwards remarked in *The Phytologist* (1844, 1:1080) that he had noticed it, as a plant of chalky and gravelly wastes and banks, "in abundance this season at Crocking-hill, between St. Mary Cray and Farningham; at Stone, beyond Dartford; and in numberless other localities in the cross-country lanes between Farningham and Gravesend".

⁴ Wiggington, M.J. and Pearman, D.A., *Dianthus armeria* L. (Caryophyllaceae) in (ed. M.J. Wiggington, 1999) *British Red Data Books 1 Vascular Plants*, JNCC.

⁵ Plantlife *Dianthus armeria* L. dossier (2007), accessed at http://www.plantlife.org.uk/uploads/documents/Dianthus_armeria_dossier.pdf

This abundance is now reduced to the Farningham Wood station. The reference to lanes reflects the unsurfaced nature of highways at the time, providing poached, disturbed ground which would favour *Dianthus armeria* as a short-lived opportunist species.



Sandwich. Photo by Liam Rooney, 15 June 2011

Hanbury and Marshall (1899) regarded it as a plant of dry banks, widespread in the county, although local and even then, apparently decreasing. A cluster of records was also given by Hanbury and Marshall east and west of Canterbury, including Thomas Johnson's 1632 find, and these appear since to have diminished to Fishpool Hill Wood, where Francis Rose found it in 1954 on a gravelly bank by a track, and in 1960-63 by the main road (A257), presumably the same road along which Johnson had passed. However, according to Philp (2010), the plant could no longer be traced there, perhaps due to the effect of herbicide sprays, although it might still be present. Subsequent search has also been unsuccessful.

Indeed, the only Kent presence of this species noted in the 1991-2005 survey of Philp (2010) was at Farningham Wood (although a Sandwich site then searched without success has since produced this plant, so that the historic decline of this species amounts to 97% of all recorded Kent sites⁶). The recent history of Deptford Pink at Farningham has been written up by Joyce Pitt, and the following account is substantially based on her account, *Dianthus armeria* at Farningham Wood (*The Newsletter of the Kent Field Club*, May 2012, 75:18-19).

Farningham wood-bank habitat. Photo by Geoffrey Kitchener, 30 September 2012.



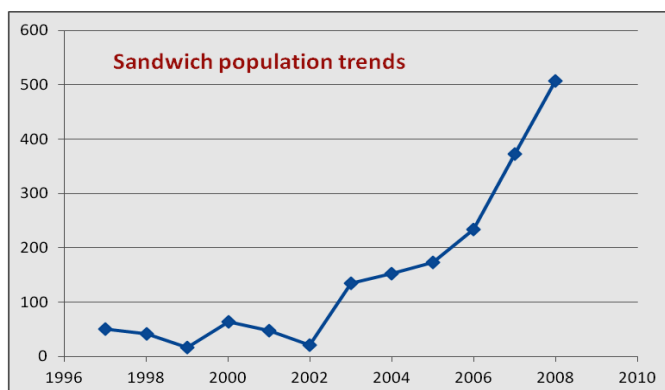
The plant grows along the wood's south-facing boundary on dry, free-draining soils derived from the Thanet Sands, and the warmth and light exposure appear likely to be beneficial to the plant's germination and growth (although a more recently established small colony on the north-facing side of the wood may be an exception to this). It is primarily a self-pollinating biennial, with germination mainly from the end of March, but also continuing in summer and early autumn. It overwinters as a rosette, flowering from late June through to autumn; but may rarely be an annual or short-lived perennial. It is likely that the seeds require light and soil disturbance for germination. At Farningham, open disturbed areas on the wood-bank or the gap between the bank and arable crop offer germination opportunities, particularly where rabbits have scuffed the ground, or a tractor has kicked into the bank. The very light sandy soil also erodes to a degree. The most constant associates are *Agrostis capillaris* (Common Bent) and *Teucrium scorodonia* (Wood Sage).

Deptford Pink was almost eliminated from this location by heavy application of herbicides in the late 1970s. Only one plant was observed by Joyce Pitt in 1981. However, when the farmer was told about the plant and its

⁶ Plantlife (2007), as above.

rarity, this practice ceased, and the plant began to thrive again. In 1983, 250 plants were recorded, and during the 1990s the plants were counted and mapped by an assistant warden of the woodland KWT reserve (e.g. 1166 in 1002; 823 in 1993). By 1999, numbers had risen to c.2000, with up to four times as many seedlings. More recently, Plantlife has adopted a counting role, reflecting the national significance of the colony. Counts have amounted to 1720 plants (2005), 2969 plants (2006), 1682 plants (2007); and In 2010, 1555 plants were recorded, when they were to be found along the wood-bank (including where recently disturbed by rabbits), in the open, bare track at the edge of the field disturbed by farm vehicles, and on a heap of upturned soil at the field margin. In occasional years, a few plants can be seen on the bank at the far eastern end on the field where generally hedgerow species are more dominant. One or two plants usually appear just inside the wood, where there is bare ground near a bench, disturbed by the passage of feet. Only rarely do plants appear within the wood itself, adjacent to the boundary wood-bank; and this again appears to reflect the need for light and disturbance. The population fluctuations may well reflect the incidence of disturbance.

The Sandwich Bay site has also been written up, by Peter Atherall, in his article, A record year for a Kent rarity (*Wild Kent*, Winter 2011/12, p.8). He draws attention to the dynamic sand dune system, coupled with rabbit grazing and disturbance, creating open ground for seedling establishment. The population apparently consisted of about 100 plants in 1987, when it was first discovered, by John Taplin, and reached about 200 plants in the period to 1997. KWT monitoring has resulted in counts with a minimum of 16 plants in 1999 and a maximum of 750+ in 2011, without any detectable pattern in the variation from 1997 to 2002 (although year-to-year changes in disturbance are likely to be relevant), but a trend of increase from 2003 to 2008 (see chart) and beyond. The habitat is described (by P.J. Wilson in Plantlife Report no. 117, The status and distribution of *Dianthus armeria* L. in Britain, 1999) as falling into two distinct vegetation communities. The first community was just below a dune crest, topped by *Ammophila arenaria* (Marram), with the Deptford Pink scattered in the sparsely vegetated ground below, amongst *Festuca arenaria* (Rush-leaved Fescue) and occasional *Eryngium maritimum* (Sea-holly). The other community was on lower, less bare ground with a slightly less diverse flora, *Elytrigia atherica* (Sea Couch) forming a dense sward with Deptford Pink scattered in gaps.



Site	Grid reference	Site status	Last record date	Recorder	Comments
Skeet Hill	TQ4965		20 September 1987	RMB	TQ 495 652, 6 plants on cindery bank of tip, since covered with brambles. Discovered by Mr Vink and seen by RMB at intervals, 1964-87.
Farningham Wood	TQ5368, TQ5367 and TQ5467	Local Wildlife Site SE60	(1) 6 June 2015 (2) 7 July 2014 (3) 23 June 2012 (4) 9 July 2010	(1) KBRG meeting (2) JP (3) SL (4) SB and others	(1) From the western boundary of the monad to TQ 544 675, c.1400 plants. Also, a few plants in coppiced sweet chestnut at TQ 5428 6776, plus 88 plants counted from TQ 5398 6780 to eastern boundary of monad (2) c.500 plants counted, none on the eastern bank; one or two on bare soil of tracks. (3) 490 plants on southern facing

					<p>sloping boundary bank of the wood opposite arable field, between TQ 53975 67817 and TQ 54446 67629, mostly just coming into flower; somewhat early for a full count.</p> <p>(4) 1555 plants counted for Plantlife between TQ 53973 67818 and TQ 54419 67628 on sandy bank at woodland edge adjacent to arable field.</p> <p>For earlier records, see text of account above.</p>
Ashford	TR044		20 August 2015	HS	<p>TR 007 449, nine plants on a sandy sloping bank by the road at the edge of Eureka Park. The bank had been disturbed, by rabbits presumably.</p>
Littlebourne	TR15Y		After 1970, before 1981	Philp (1982)	<p>Woodland ride.</p> <p>Previously recorded here, presumably at TR1857, by Francis Rose (1954-63) and probably Thomas Johnson (1632) – see text of account above.</p> <p>Not found in Philp (2010) survey, nor on search in 2012, when agriculture adjoining wood was found to have been intensive, which could have affected marginal habitat.</p>
Sandwich Bay	TR3561	SSSI and KWT reserve	<p>(1) 23 September 2015</p> <p>(2) 2011</p> <p>(3) 9 July 2010</p>	<p>(1) KBRG meeting</p> <p>(2) Anon.</p> <p>(3) JA</p>	<p>(1) A few dead fruiting spikes at TR 35140 61861 with one still with a flower.</p> <p>(2) 750+ plants reported in <i>Wild Kent</i> (see above)</p> <p>(3) One flowering plant at TR 35147 61857, another two at TR 35147 6185; supposed that more plants were present elsewhere.</p> <p>See also text of account above. Counts have numbered 50 (1997, Anon.), 41 (1998, PW), 16 (1999, SH), 64 (2000, PF), 48 (2001, PF), 21 (2002, PF), 134 (2003, PF), 153 (2004, PF), 173 (2005, PF), 233 (2006, PF – including one plant noted c.150m south of main colony), 373 (2007), 507 (2008), 750+ (2011).</p> <p>The July/August 2007 count, by MGa, described the population as at TR 351 618, with 373 plants, located in an area of ancient dune pasture/upper grey dune on the seaward edge of the reserve. The area had been winter grazed by cattle in the past but not for previous three years.</p>

Dianthus deltooides L. (Maiden Pink)

Draft account

vc 16; present as a garden escape in vc15

Rarity / scarcity status:

Maiden Pink is found scattered across England, Wales and Scotland, both as a native and a garden escape. It has declined, although much of this was before 1930. However, its colonies are generally small and so susceptible to habitat change and other risks; it is nationally scarce and regarded as **Near Threatened** in Great Britain as a whole; but **Vulnerable** to extinction in England. In Kent, it is **rare** – or very **scarce** if one includes garden escapes.



Holborough/Halling. Photo by Liam Rooney, 19 June 2012

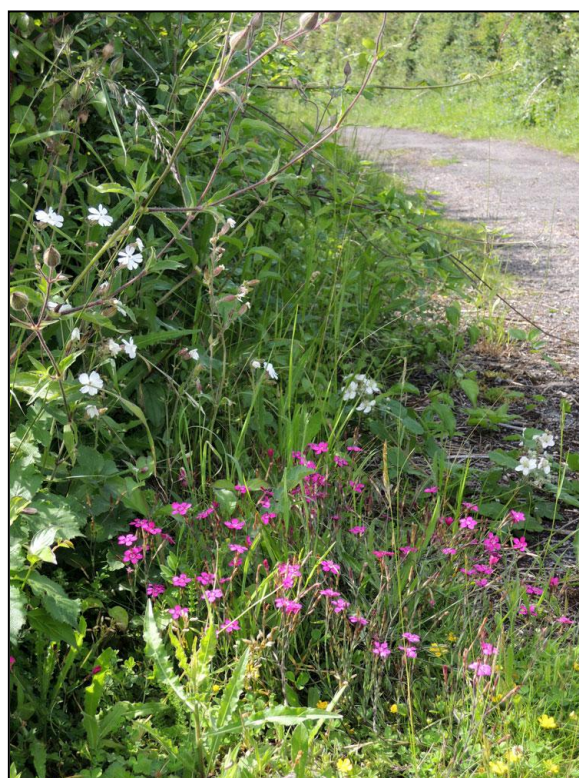
Account:

Dianthus deltooides has always been rare in the county, although its first published record goes as far back as Gerard's *Herball* (1597) – where it is mentioned as growing in a field at Deptford. The account of the Deptford Pink (above) describes the confusion between species of Pink which arose subsequently. Hanbury & Marshall (1899) were only able to cite eight other records, mostly historic. There have been relatively few Kent records since. Maiden Pink was present at a disused ragstone quarry at Dry Hill near Sevenoaks at least between 1954 and

1960, when it was locally abundant, but appeared not to have survived the quarry's conversion into a country park, c. 1972. Philp (1982) regarded the species as gone from the administrative county of Kent; but it had then still been present in metropolitan vc16, at Chislehurst. Since 1988 it has been known from a trackside near Holborough Marshes. An obvious garden escape or reject was also found in 2013 at Greatstone; a clump of uncertain origin at Betteshanger (formerly Fowlmead) country park in 2014; and a colony associated with railway works near Ashford in 2014-15.

Holborough/Halling. Photo by Liam Rooney, 19 June 2012

This species favours dry, well-drained, generally base-rich soils with some open or broken ground. At Holborough / Halling, it grows by the edge of a track raised above the level of the adjoining Holborough Marshes; the track is of chalk, perhaps associated with limeworks activity which took place in the vicinity in the 19th and 20th centuries. It is a loosely tufted perennial and has only been known as a small patch at this location, at most a few plants closely associated.



Site	Grid reference	Site status	Last record date	Recorder	Comments
Chislehurst Common (metropolitan vc16)	TQ4469		1990	JBel	Near the Cockpit, conf. JW, known for over 40 years.
Holborough / Halling	TQ67063		(1) 7 June 2014 (2) 19 June 2012 (3) 30 June 2010 (4) 1988	(1) KBRG meeting (2) GK & LR (3) SB (4) GK	(1) Usual site. (2) TQ 70855 63006, edge of made track, on ground slightly raised above adjoining marshes, several plants spread over c. 2.5m length. (3) TQ 70851 63008, Plants covering about 2 square metres of path-side.
Hurst Wood, Charing Heath	TQ9248		7 June 2015	KFC meeting	Seen at TQ 92875 48545, with several other colonies scattered in the vicinity across a south-facing sandy slope, associated with the HS1 railway line construction. Original sighting was by MP. A subsequent viewing by MP, JP and AG on 29 August 2014 led to the conclusion that this was likely to be the identity of the plant, when one specimen, past its best, was seen at TQ 9302 4841. The KFC meeting was arranged as a follow-up.
Greatstone	TR0821		27 June 2013	OL	Around 100 flowering shoots in three loose patches on the shingle behind Leonard Road, TR 08209 21177, next to other species of hortol origin, but not recognized as emanating from the nearest garden by the householder.
Betteshanger (formerly Fowlmead) Country Park	TR3554	Owned by Hadlow Group and managed as a country park	22 June 2014	AB	TR 3580 5415, a clump growing beside the track in Betteshanger (formerly Fowlmead) C.P. in very dry short grass. Substrate is very free-draining colliery spoil.



Holborough/Halling.
Photo by Lliam Rooney,
19 June 2012

Betteshanger (Fowlmead).
Photo by Alan Blackman,
28 June 2014



Dipsacus pilosus L. (Small Teasel)

Draft account

vc 15 and 16

Rarity / scarcity status:

Small Teasel is widely scattered but local in England and the Welsh Borders, and its conservation status is one of 'Least Concern' both in England and in Great Britain as a whole. In Kent, however, there are relatively few localities, and it has been ranked as **scarce** on the basis of data in Philp (2010), although subsequent records show that, strictly speaking, it appears more frequent (over twice as much as previously supposed) and may not warrant rare plant register status going forward.

Account:

The first published county record for *Dipsacus pilosus* was made by Matthias de L'Obel in 1570, in his *Stirpium Adversaria Nova*, as found in Kent near highways and suburbs of Sandwich; Hanbury and Marshall (1899) interpreted this as probably intending Richborough. In Hanbury and Marshall's time, the species was regarded as frequent but decidedly local, in shady or damp thickets and hedges. Some of the localities cited still hold this species. J. Groves contributed to Hanbury and Marshall (1899) a record of Small Teasel at Lullingstone: it



is still seen from time to time near the lake by Lullingstone Castle. De Crespigny in his *New London Flora* (1877) referred to it "in a shady lane leading from Wrotham to Cuxton, about 1½ miles E. of Wrotham": this is evidently Pilgrim's Way below Trosley Country Park, where the species still persists in shade above the road.

Trosley Country Park. Common and Small Teasels growing together. Photo by Lorna Holland, 19 August 2011

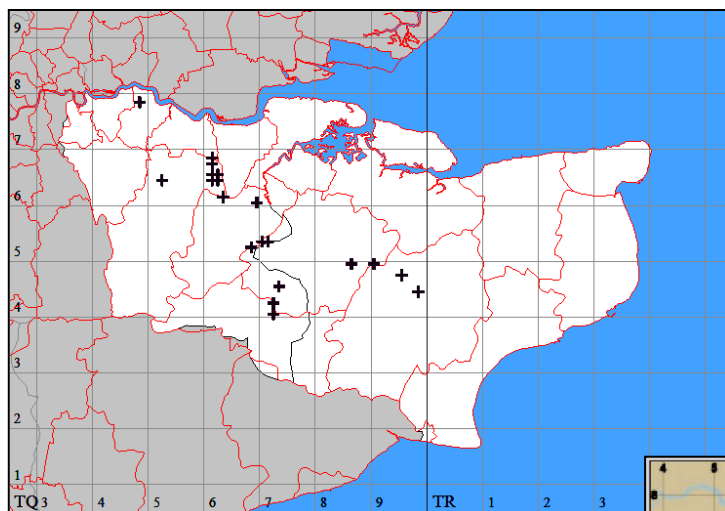
Philp (2010) treated it as always having been a very local species in Kent, giving eight tetrad records. In numerical terms, this suggests a fairly constant presence from the nine tetrad records given in Philp (1982). However, only two of these tetrads are the same in both surveys. It is accordingly difficult to interpret the data as supporting a description of the plant as local in a sense of persisting as populations in very limited geographical areas, unless many of the earlier survey finds are still present. However, as Small Teasel is a biennial needing disturbance for germination, it is possible that a lack of woodland management may account for some disappearances, until conditions provide an opportunity for any residual seed-bank to restore the plant's presence.



Teston Bridge. Photo by Lorna Holland, 10 August 2011

Dipsacus pilosus is a plant which in Kent has been recorded at woodland edges and in rides, particularly (but not exclusively) in damp conditions, on stream-banks and river-margins (the Beult, Darent, Medway and Teise) and in wet marshy land. There are probably more plants at Hartley Wood than all the other populations put

together.

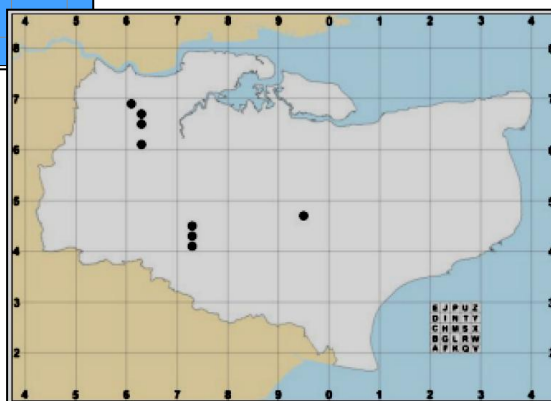


Dipsacus pilosus (Small Teasel) 1991-2005

The 1991-2005 comparison distribution map is given by kind permission of the late Eric Philp and the Kent Field Club.

Dipsacus pilosus (Small Teasel) 2010-16

Whilst recording data are being maintained in tabular format, the 2010-16 distribution is also given here as a map, showing 20 monads (representing 37 records, and equivalent to 17 tetrads), and so well exceeding the eight tetrads given in Philp (2010), albeit that some of the latter have not been re-found.



Site	Grid reference	Site status	Last record date	Recorder	Comments
Lesnes Abbey Woods (metropolitan vc16)	TQ4878		24 June 2012	CR	TQ 48198 78803. Several near northern edge of wood, up path south of children's play area. Strimmed off by Council contractors, despite Council officers being told the plants were here. Some re-growth evident.
Lullingstone	TQ5264		(1) 14 September 2014 (2) 18 September 2011	(1) & (2) RMB	(1) Reduced in area by partial clearance but still in reasonable numbers. Best viewing point from path is now near to anglers' car park. (2) A dense colony between the River Darent and Lullingstone Lake, known to RMB here since 1989, inaccessible but visible from across the river with binoculars - identity confirmed in 1991 when there was an outlying plant by the river at TQ 52848 64322. Known at Lullingstone since before 1899.
North of Ridley	TQ6164		(1) 12 October 2015	(1) & (2) CC	(1) Same site as 2014, but few

			(2) 24 July 2014		plants, perhaps due to very tall stinging nettles. (2) Hartley Bottom Road through field gate to a clump about 10 x 10 metres on the left, TQ 6139 6498, growing to 2 - 2.4 metres high.
Hartley	TQ6167, TQ6168		(1) 12 October 2015 (2) 16 August 2014 (3) 1 May 2014 (4) 25 August 2010	(1) CC (2) DS (3) JP (4) RR	(1) TQ 6175 6507 to TQ 6195 6523, dominant species along west edge of Grubb's Wood, with scattered plants to the north and south and in wood. (2) Inside Hartley Wood, TQ 617 679, a population of c.200 plants with flower heads but not yet flowering. About 20 yards or so away outside the wood but on the shaded eastern edge (facing east) was another population of c.500 plants, with some in flower, TQ 618 679. (3) Thousands of plants along eastern edge of Hartley Wood to old tip, in both TQ6167 and 6168. (4) TQ 617 678, woodland edge, Hartley Wood. Patch just inside the wood estimated to cover an area of about 120 sq metres whilst a patch on the field side of the wood covered about 250 sq metres.
Hartley	TQ66E		After 1990, before 2006	EGP (Philp, 2010)	This may the same as TQ6168 above.
Meopham	TQ6265		4 October 2016	JP	Elbows Wood
Trottscliffe	TQ6361		(1) 19 August 2011 (2) 13 August 2010 (3) After 1990, before 2006	(1) LH (2) SB (3) Philp (2010)	(1) Present at TQ 63316 61053 – upper path. (2) TQ63914 61085, Abundant plants in woodland on chalk, recent clearance providing extended habitat for future. (3) Given as TQ66F. There is a long history of records for this area.
Nettlestead	TQ6852		16 February 2013	GK & SK	Three plants at TQ 68705 52295 and another a few metres away. In tree-shaded area by path on west bank of Medway.
Leybourne	TQ6960		5 August 2016	GK	TQ 6917 6004, c.20 plants in rough vegetation north of access bounding lake.
Meopham	TQ66H		(1) 7 May 1995 (2) After 1990, before 2006	(1) JP (2) EGP (Philp, 2010)	(1) TQ 628 653. (2) Elbows Wood.
Meopham	TQ66I		After 1990, before 2006	EGP (Philp, 2010)	Orange Hill.
Winchet Hill	TQ74F		After 1990, before 2006	EGP (Philp, 2010)	
Marden Beech	TQ74G		After 1990, before 2006	EGP (Philp, 2010)	
Great Pattenden	TQ74H		(1) 28 August 2014 (2) After 1990,	(1) SM (2) EGP	(1) Large patch of flowering plants at TQ 737 456 near Teise bridge

			before 2006	(Philp, 2010)	and next to road. FR also recorded it in 1958 on the bank of the Teise at Marden Mill, north west of Marden, probably at TQ7345.
Teston	TQ7053		(1) 10 August 2016 (2) 4 August 2012 (3) 10 August 2011 (4) 3 August 2010	(1) BW (2) JB (3) & (4) LH	(1) Recorded as TQ7053. (2) TQ708531, Teston lock, R. Medway. (3) TQ70875 553242, still at lock, but now by Teston Bridge and another site by river. (4) TQ70840 53059, in excess of 20 plants spreading for previous three years, by Teston Lock.
Teston	TQ7153		10 April 2010	LH	TQ718531, by weir, Teston car park, in seed, also seed heads further along site, det. EGP 2009.
East of Horsmonden	TQ7240		26 November 2013	LM	TQ 72394 40684, by the old Teise channel of the River Teise near Harper's weir, Harper's Farm.
Marden Beech	TQ7242		21 August 2016	GK & SK	(a) TQ 72422 42595, seven plants at wood margin bounding former channel of R. Teise. (b) TQ 72522 42945, at least 11 plants on banks of the Lesser Teise, in coarse vegetation or below willows.
North west of Marden	TQ7345		8 August 2016	SB	A massive population of plants on the bank of a drain of the Lesser Teise at TQ 7341 4567; also more plants at result of stream-side vegetation clearance under a power line at TQ 7381 4595, all on Mill Farm.
Grafty Green	TR8649		(1) (2) 18 December 2012	(1) GK & SK (2) SB	(1) TQ 8658 4915, 70 stems counted, plus one by footpath 30m further west. In wet woodland below steep ground, presumably outcropping Hythe Beds, mostly below <i>Alnus glutinosa</i> and <i>Corylus avellana</i> . (2) At least 50 plants within 10 metres alongside a public footpath through a small marshy copse at TQ 86590 49157, growing with <i>Carex pendula</i> and under <i>Alnus glutinosa</i> .
Little Chart / Charing	TQ94N		(1) 22 October 2012 (2) 9 August 2006	(1) SB (2) EGP	(1) Four plants in seed at TQ 95412 47979 on a stream bank where the stream meets both Newcourt Wood and a line of planted <i>Alnus cordata</i> .
Godinton	TQ9888		27 August 2014	GK	TQ9 899 4440, five plants along 10 metres of the west side of Godinton Lane through woodland, shaded.



Hartley Wood. Photo by David Steere, 16 July 2014

Drosera rotundifolia L. (Round-leaved Sundew)

Draft account

vc 15; gone from vc 16

Rarity / scarcity status:

Drosera rotundifolia is a fairly common plant of bogs, damp acid heath and moorland in the British Isles, except for south east England, where it has always been less frequent, but has declined in any event, largely due to habitat destruction. Its Great British conservation status is of 'Least Concern', but in England it is **Near Threatened**.

In Kent, there is now very little suitable habitat, and the species is restricted to one location. It is accordingly classified as **rare**.

Account:

Matthias de L'Obel and Pierre Pena in their *Stirpium Adversaria Nova*, dated 1570 but probably published in 1571, gave the first Kent record for *Drosera rotundifolia*⁷. By the time of Hanbury and Marshall (1899) the



species was regarded as very local, being known from four general areas. One of these was north west Kent, on the sandy and gravelly commons at Keston, Hayes, Bromley and Chislehurst; another was in the Tunbridge Wells district; another was from there to Ashford, including Hothfield; and the fourth was on the Lower Greensand east of Ashford. The Round-leaved Sundew's presence at these various locations has gradually been reduced. Indeed, although Hanbury and Marshall (1899) listed it for several north west Kent locations, it may already have been reduced there to Keston Bog by the end of the 19th century.

Hothfield. Photo by Liam Rooney, 15 June 2010

Keston Bog had been a classic locality for this species. Charles Darwin collected material from here for experiments in connection with his work published as *Insectivorous Plants* (1875). His son, Francis, in writing of Darwin's politeness to servants and indifference to household management, mentioned his asking doubtfully ('doubtfully' is very tentative for the master of the house!) whether he might have a horse and cart to send to Keston for *Drosera*⁸. At this location it was still flourishing in June 1968, when Francis Rose noted over 100 plants, the "best for over 20 years". However, even then Keston Bog was changing, particularly with the cessation of grazing following the 1930s, a reduction in water supply and the growth of conifers; and Sundew was gone by 1987.

⁷ David Pearman and Philip Oswald in their note, A very early *Drosera* record, *BSBI News* (2015) **129**: 46-7, suggest that both the text and the accompanying drawing in *Stirpium Adversaria Nova* point to *D. intermedia* (Oblong-leaved Sundew) rather than *D. rotundifolia*. They relate this to the presence of *D. intermedia* in Somerset, although *Stirpium Adversaria Nova* refers to both Somerset and Kent, and *D. intermedia* has not been recorded in Kent. It is perhaps more likely that L'Obel and Pena conflated the two Sundews in their distributional information, rather than that this is a Kent record of *D. intermedia*.

⁸ Darwin, Francis, ed. 1887. *The life and letters of Charles Darwin, including an autobiographical chapter*. p138.

The Tunbridge Wells area probably bore most of its historic *Drosera* populations to the south, in East Sussex. One such locality was at Hawkenbury Bog (TQ5937), sometimes taken to be in Kent, but actually within vice county 14, East Sussex, a site which was only the size of “a large room” surrounded by farmland, and hence sensitive as a viable habitat; stock-grazing ceased, it became over-vegetated and dried up, with the loss of this and other bog species.

Hothfield. Photo by Liam Rooney, 2 September 2011

The sites between Tunbridge Wells and Ashford were few and scattered, but included Louisa Lake at Bedgebury, from which the species has gone, and Hothfield Common, where it has been recorded at least back to 1848 and where it is still fairly plentiful, over the main bog. This is now the last surviving Kent site (TQ9645).

Locations east of Ashford (Willesborough Lees and Westenhanger) do not seem to have generated records since the end of the 19th century other than Gibbin’s Brook near Westenhanger, where Round-leaved Sundew was recorded by Francis Rose as very rare in *Sphagnum* at the margin of poor fen in 1945 and has disappeared since.

The Round-leaved Sundew is an insectivorous perennial, requiring wet acid ground, often with *Sphagnum* cover and having an open aspect. It is very susceptible to drying out, and so at Hothfield is reliant upon the continuation of water seepage arising at the junction of the sands of the Folkestone Beds and the clays of the Sandgate Beds.



Hothfield. Photo by Liam Rooney, 4 July 2010

Dryopteris aemula (Aiton) Kuntze (Hay-scented Buckler-fern)

Draft account

vc 15 and 16

Rarity / scarcity status:

Dryopteris aemula is primarily a plant of western Britain, from Cornwall to the Orkneys, and Ireland. Whilst it is a local plant, the extent of this distribution renders its English and Great British conservation status as of 'Least Concern'. In the south-east, however, its distribution is restricted to ravines in the Weald which replicate climatic conditions further westwards. Its Kent stations are few, and it is **scarce** in the county.

Account:

The first published Kent record for the Hay-scented Buckler-fern may be in Edward Jenner's *Flora of Tunbridge Wells* (1845), but as this refers to the species being at "Eridge Rocks plentifully, and elsewhere, but not common", it is possible that he could have been referring only to Sussex locations. It was at least subsequently present on the Kent side of the vice county boundary at Tunbridge Wells, as a record for a bog under rocks at Fisher's Castle was contributed to Hanbury and Marshall (1899), who rated the fern as very rare.



Benenden. Photo by Liam Rooney, 1 February 2012

The Kent distribution of *Dryopteris aemula* was not elucidated until the researches of Francis Rose from the 1940s onwards, as a result of which it is known as having a Wealden distribution primarily in Sussex, but extending into south Kent. Philp (2010) listed six tetrad records, slightly down from eight in Philp (1982). However, the 2010-16 Kent records amount to eight tetrads (nine monads), so there does not seem to be an issue as regards decline.

Francis Rose⁹ found that the fern was frequent, widespread and at times very abundant in suitable habitats in the High Weald. By 1957 he was aware of 44 modern localities, of which five were in Kent. Subsequently, the total of localities rose to over 100¹⁰, as a result of the exploration of at least 200 of the 300 or so gills (steep-sided ravines) extending from Warninglid, West Sussex to near Tenterden in Kent. Because of the impossibility of cultivation, most have remained as woodland, although sometimes converted to plantations. These shaded gills provide a sheltered microclimate with higher humidity and lower temperatures in summertime than on the surrounding plateaux. They accordingly replicate climatic conditions which are to be found in western Britain and Ireland, the main areas of distribution for *Dryopteris aemula*, both in terms of the British Isles and world distribution generally. However, taking the Weald overall, spanning Sussex as well as Kent, its local abundance here can exceed other parts of its range, such as North Wales¹¹. The significance of the species in relation to this habitat is such that Philp Sansum has suggested that it should

⁹ *Dryopteris aemula* in S.E. England, *Proceedings of the Botanical Society of the British Isles* (1958) 3: 100-101.

¹⁰ Francis Rose, *The Habitats and Vegetation of Sussex* (1995).

¹¹ T. Rich et al., *Flora of Ashdown Forest* (1996).

be treated as the ‘flagship species’ for High Weald gill woodland¹². It has potential for use as a monitoring species for signals of wider change in gill woodland ecology, whether climate change, woodland management or unforced natural population fluctuations.



Woodland gill habitat, Ashour Wood. Photo by Stephen Lemon, 9 July 2016

In the High Weald, the fern is most often found on deeply shaded steep gill slopes facing north or north east, on a well-drained but moist acid substrate, either massive sand-rock or rocky sandy banks. It is associated with a bryophyte flora which reflects a similar climate-related distribution, and is often accompanied by other ferns: *Athyrium filix-femina* (Lady-fern), *Blechnum spicant* (Hard-fern), *Dryopteris dilatata* (Broad Buckler-fern), *Dryopteris affinis* (Golden-scaled Male-fern) and *Dryopteris borrieri* (Borrer’s Male-fern). Other associates include *Vaccinium myrtillus* (Bilberry) and *Luzula sylvatica*

(Great Wood-rush). The presence of the bryophytes *Hookeria lucens* and *Plagiothecium undulatum* (both ‘ancient woodland bryophytes’) near the fern in Parsonage Wood and Robin’s wood respectively is of significance as regards the antiquity of the gill woodland habitat.

Benenden. Photo by Liam Rooney, 1 February 2012

Francis Rose gave *Dryopteris aemula* as most frequently occurring under the shade of oak, although quite often under beech. Holly and yew may be present, but not as a dense canopy, in spite of the fern’s predilection for shade — Sansum (2014) comments on the holly association, which he found frequent, and how this may afford some cold protection, but that the fern appears to avoid the very darkest areas under their crowns. Coppice canopy does not appear favourable, perhaps because of the cyclical disturbance producing higher light intensity, although *Dryopteris aemula* has been recorded at Robin’s Wood, Cranbrook under the shade of sweet chestnut. Coppicing at Robin’s Wood, where the cutting of a strip of woodland under pylons to the edge of a gill stream with stems and brash left within centimetres of one colony (observed 2014) offers an opportunity of ascertaining the effect of such disturbance.



Dryopteris aemula is distinctive by virtue of the pinnules on the fronds curling upwards at the edges, so that each pinnule is concave above, and the frond as a whole appears crimped or crisped. Also characteristic are the tiny white glands, mostly on the underside of the pinnules. Because of these glands, when crushed or newly dried, the fern smells of new-mown hay (due to coumarin), and hence the name of Hay-scented Buckler-

¹² Philp Sansum, *An overview of the character and ecological significance of gill woodland in the High Weald AONB*, High Weald AONB Unit Commissioned Report (2014). Accessed 9 February 2015 at <http://www.highweald.org/downloads/publications/1476-2014-december-overviewofthecharacter-ecologicalsignificanceofgillwoodlandinthehighwealdaonb-drphilpsansum/file.html>.

fern. Its markedly fresh, bright green fronds remain green longer than all the other British *Dryopteris* species, unrolling through summer and overwintering until around next May. Chris Page¹³ suggests that this may be one the main factors dictating its distribution: the long growing season required for the wintergreen fronds to harden fully means that the fern is mostly absent from places where early winter frosts may interfere with this.

Pinnule underside, showing sori and tiny white glands. Benenden.
Photo by Liam Rooney, 1 February 2012



Site	Grid reference	Site status	Last record date	Recorder	Comments
Avery's Wood, near Speldhurst	TQ5440		(1) 28 February 2013 (2) 28 February 2009	(1) GK & SK (2) PS	(1) In the upper valley slopes of gill woodland as described in (2) below, but plants recorded as at TQ54111 40673 and TQ54103 40643. The southern location held 3 plants, on vertical mossy west-facing trackway bank. (2) One small plant beside narrow well trodden path through thicket of holly and birch, in a surprisingly flat and disturbed spot beneath mature beech, at TQ54104 40674. Associated spp: <i>Hyacinthoides non-scripta</i> , <i>Thuidium tamariscinum</i> , <i>Polytrichum formosum</i> , <i>Eurynchium praelongum</i> , <i>Luzula pilosa</i> . A second plant was present on the bank of the same trackway a few metres up-slope to south, in a more typical position.
Ashour Wood, near Bidborough	TQ5443	9 July 2016	(1) 9 July 2016 (2) After 1970, before 1981	(1) SL (2) Philp (1982)	(1), steep north east facing bank of upper gill stream, TQ 54658 43779. Only single plant located despite full search of whole gill stream. Growing on slab of sandstone with <i>Dryopteris dilatata</i> and <i>Blechnum spicant</i> on vegetated/open section of bank, under light shade of <i>Quercus petraea</i> and <i>Betula pendula</i> , with adjacent horizontal trunks of dead <i>Betula pendula</i> and <i>Castanea sativa</i> straddling gill. Immediately adjacent was a section of gill bank densely shaded by <i>Ilex aquifolium</i> . In the vicinity of 'atlantic' liverwort <i>Jungermannia pumila</i> and restricted/rare bryophytes <i>Dichodontium pellucidum</i> and <i>Plagiomnium</i>

¹³ C.N. Page, *The Ferns of Britain and Ireland* (1982).

					<p><i>cuspidatum</i></p> <p>(2) Given as a TQ54L record, but presumably this site; although stated to have gone from near Bidborough in Philp, 2010. Known here by FR in 1945, when considered to be locally abundant, but since then there have been considerable changes to Ashour Wood, including conifer planting.</p>
Bayham Abbey	TQ63N		<p>(1) After 1990, before 2006</p> <p>(2) 6 September 1990</p> <p>(3) 26 June 1980</p> <p>(4) 5 August 1979</p>	<p>(1) EGP (Philp, 2010)</p> <p>(2) FR</p> <p>(3) FR</p> <p>(4) EGP</p>	<p>(2) Stubbs Wood, TQ6537, in deep gill to west, lower down.</p> <p>(3) Clayhill Wood, TQ6537.</p> <p>(4) Shaded gill in wood north east of Bayham Abbey.</p> <p>There are earlier records by FR for 1949-60 relating to the east end of Bayham Woods, in a sheltered woodland gill on Tunbridge Wells Sand.</p>
Near Matfield	TQ64K		n/k	FR	<p>The map which Francis Rose prepared for his MS Flora of Kent includes this tetrad. However, not re-found in the TQ6540 gill west of Matfield, nor the western arm of the gill east of Romford, TQ6440/1 (2016, SL).</p>
North west Lamberhurst	TQ6537		28 March 2016	SL	<p>Clayhill Wood / Stubb's Wood, ghyll stream running west to east. TQ 65226 37510 to TQ 65233 37517: stretch of ghyll stream with strong colony (c. 50 plants?) hanging from and spread across both north and south facing banks of ghyll (best developed in area of north east facing bank). A short stretch where the banks of the ghyll stream become more steep/incised (especially the north facing bank), where large sandstone boulders outcrop (Ashdown formation?). TQ 65233 37517: cluster of four outlying plants up slightly shallower south facing bank here. TQ 65283 37505: four plants further upstream (east), where ghyll stream banks shallow and here confined to immediate edge of ghyll stream. TQ6 5455 37544: 3 plants roughly on west bank, in similarly steep/incised stretch of ghyll stream banks further upstream to main colony. TQ65464 37560: further 3 plants facing west in upper stretch of gill stream with similarly incised/steep banks to main colony, near <i>Polystichum aculeatum</i>. Commonest associates <i>Blechnum spicant</i> and the moss <i>Mnium</i></p>

					<p><i>hornum</i>. Surrounding old coppice woodland mostly bare ground with very impoverished flora. The Atlantic byrophyte <i>Hookeria lucens</i> here by a rock waterfall in small form, as well as <i>Scapania undulata</i> and <i>Fissidens pusillus</i> on rocks in ghyll stream. A mature <i>Taxus baccata</i> and <i>Ilex aquifolium</i> grow side by side at edge of ghyll stream, with <i>D. aemula</i> immediately upstream and downstream of these but not in stretch under their shade. Other trees on ghyll stream banks around main colony Beech, <i>Quercus</i>, <i>Betula</i>, Hazel, Sweet Chestnut.</p>
Chingley Wood	TQ6833		28 July 1999 and 7 June 1986	JP	
Chingley Wood	TQ6933		9 April 2016	SL	<p>Chingley Wood. TQ 69257 33487: Nine plants along bare north west bank of upper (main) ghyll stream, upstream from brick ruin. T Q69232 334445 to TQ69235 33429: 21 plants in fork of narrow deeply incised upper ghyll stream (19 spread over on NW facing bank, 2 low down near water on opposite bank), associates <i>Scapania undulata</i> and <i>Fissidens pusillus</i> (on stones in ghyll), <i>Thuidium tamariscinum</i>, <i>Mnium hornum</i>, <i>Pellia epiphylla</i>, <i>Bluebell</i>, <i>Blechnum spicant</i>, <i>Dryopteris dilatata</i>, Hazel, Oak. TQ6921 3345: Two plants on flattish ground beside flush at junction with main ghyll stream with <i>Sphagnum inundatum</i> and <i>Polytrichum commune</i>. Yew and Holly trees centered along ghyll stream separating the colonies with <i>D. aemula</i> absent from their shade. Atlantic species <i>Hycomium armoricum</i> and <i>Hookeria lucens</i> also present lower down along ghyll stream but not found with <i>D. aemula</i>.</p>
Angley Wood	TQ7635		(1) 12 July 2015 (2) 8 March 2013	(1) KBRG meeting (2) SB, LR, JA	<p>(1) Colony seen in 2013 re-found. (2) About 100 plants in Angley Wood in scattered groups around TQ 76110 35850, on banks under oak around the confluence of two gill streams.</p>
South Cranbrook	TQ7634		(1) 16 June 2014 (2) After 1990, before 2006	(1) PS (2) EGP (Philp, 2010)	<p>(1) Several groups of ferns in Robin's Wood, totaling 126 plants: (a) TQ 76323 34168 ±7m: 17 plants on steep (>60° slope) mossy N-facing bank 3m high (+ 13 outlying plants scattered in the immediate</p>

					<p>vicinity).</p> <p>(b) TQ 76483 34091 ±6m: 9 plants on steep gill bank c.5m high, N-facing, under <i>Quercus petraea</i> and <i>Ilex aquifolium</i>. Bank v mossy with <i>Mnium hornum</i>, <i>Plagiothecium undulatum</i> and <i>Blechnum spicant</i>.</p> <p>(c) TQ 76505 34084 ±6m: 18 plants. Steep 4m high bank descending to edge of gill stream. Plants within 3m of water in shade of <i>Ilex aquifolium</i>.</p> <p>(d) TQ 76520 34080 ±6m: 20 plants, N-facing sandrock bank of gill (+ 6 plants on opposite S-facing bank). Wood recently cut to edge of bank under pylons leaving plants near top in sun.</p> <p>(e) TQ 76541 34071 ±7m: 25 plants mixed with <i>D. dilatata</i> on steep NE-facing bank under <i>Castanea sativa</i>. Ground cover of <i>Mnium hornum</i>.</p> <p>(f) TQ 76581 34017 ±6m: 17 plants in similar situation to last.</p> <p>(2) Philp (2010) gives TQ73S, which corresponds to 2014 finds, but a specimen in MNE (EGP & JBe) dated 29 November 1992 refers to a woodland gill at Robin's Wood, TQ73R. The wood extends into both tetrads.</p> <p>The species has been recorded at Robin's Wood at least back to 1955 (FR, in deep shaded gill on Tunbridge Wells Sand).</p>
Parsonage Wood, White Chimney Wood	TQ7932		<p>(1) 15 August 2015</p> <p>(2) 17 June 2014</p> <p>(3) After 1990, before 2006</p> <p>(4) 28 August 1988</p>	<p>(1) BPS meeting</p> <p>(2) PS</p> <p>(3) EGP (Philp, (2010)</p> <p>(4) EGP</p>	<p>(1) TQ 79023 32534, one plant at White Chimney Wood, comm. PA, confirming a find by PR on 1 July 2015, found growing on the north bank of the stream after it turns at the north end of the wood.</p> <p>(2) A total of 29 plants in Parsonage Wood, grouped as follows:</p> <p>(a) TQ 79777 32816 ±12m: five plants, base of N-facing bank in heavy shade of large <i>Fraxinus excelsior</i>.</p> <p>(b) TQ 79770 32873 ±20m: one large plant on damp E-facing rock exposure, covered in thalloid liverworts, close to gill stream.</p> <p>(c) TQ 79782 32929 ±8m: 13 plants in deep shade on NW-facing gill bank under <i>Fagus sylvatica</i> and <i>Ilex aquifolium</i>, with sparse <i>Blechnum spicant</i> and <i>Dryopteris dilatata</i>.</p> <p>(d) TQ 79804 32951 ±6m: seven plants in narrow defile of gill side-arm (four on steep banks, three at</p>

					<p>base of small cascade/dripping ledge) with a 50cm patch of <i>Hookeria lucens</i> directly beneath.</p> <p>(e) TQ 79769 32909 $\pm 14m$: three plants in a lush mixed stand of ferns with <i>Dryopteris dilatata</i>, <i>D. affinis</i>, <i>Blechnum spicant</i> and <i>Athyrium filix-femina</i>.</p> <p>(3) TQ63W</p> <p>(4) Shady gill, given as TQ73W.</p> <p>The species has been recorded here at least since 1957 (FR – abundant in moist shady gill on steep sandy banks). Subsequently recorded by FR in 1958 (rocky banks in gill on Ashdown Sand), in January 1966 (TQ7932) and in April 1966 (gill head).</p> <p>Babbs Gill, Scullsgate (FR, 1949, 1950) may be this or a neighbouring site.</p>
Benenden	TQ8032		<p>(1) 12 December 2011</p> <p>(2) After 1990, before 2006</p>	<p>(1) SB</p> <p>(2) EGP (Philp, (2010))</p>	<p>(1) Approx 50 plants on steep bank directly above a stream in a woodland gill at TQ 80328 32605. Same site as photographed by LR in 2012 – see account above.</p> <p>(2) Recorded as TQ83B.</p> <p>Probably the same site as recorded by FR in 1956 as on sandstone rocks and soil in shade by stream in a gill north east of Stream Farm.</p>
Wittersham	TQ82Y		After 1990, before 2006	EGP (Philp, (2010))	South-facing bank of gill woodland, probably c. TQ 899 279.
The Gibbet, Tenterden	TQ93B		After 1990, before 2006	EGP Philp, (2010)	<p>As well as the Philp (2010) sighting, also recorded in a deep shady gill on Ashdown Sand north east of The Gibbet by FR in 1962.</p> <p>One plant also seen in neighbouring tetrad, TQ93A, Finchbourne Wood, by FR in December 1966, with the moss <i>Hookeria lucens</i>, which was growing on moist rocks by a stream.</p>