

# Kent Rare Plant Register

## **Draft** species accounts

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Compiled by Geoffrey Kitchener and the Kent Botanical Recording Group  
Issue date: February 2021

## Kent rare plant register

This section of the register covers:

*Nardus stricta*  
*Narthecium ossifragum*  
*Neotinea ustulata*

*Neottia nidus-avis*  
*Nepeta cataria*  
*Nymphoides peltata*

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

The register accounts give priority to data from 2010 onwards, but some historic data are also included (however, generally not specific sites with no post-1970 records) so as to indicate trends and where the plant may yet be discovered or rediscovered. Distribution maps for records from 2010 onwards show vice counties 15 and 16 with their mutual boundary given by a black line. See the Kent webpage of the BSBI website at <https://bsbi.org/kent> for the full Kent rare plant register list, the introduction to the register and a list of 'probably extinct' Kent plants.

### Abbreviations used in the text:

#### Recorders' initials:

A&MT Andy & Maggy Tebbs  
 AL Alex Lockton  
 AW Tony Witts  
 DS David Steere  
 EGP Eric Philp  
 FH F. Horsman  
 FR Francis Rose  
 GK Geoffrey Kitchener  
 HW Hazel Williams  
 IB Ishpi Blatchley  
 JA Jan Armishaw

JD John Duffield  
 JM J. Mobarak  
 JP Joyce Pitt  
 MF Michael Foley  
 MP Mary Page  
 OD Owen Davis  
 PD Phyllis Davis  
 PG Peter Gay  
 PHa P. Hardy  
 SB Sue Buckingham  
 SK Sarah Kitchener  
 SL Stephen Lemon

#### Other abbreviations:

KBRG Kent Botanical Recording Group  
 KFC Kent Field Club  
 KWT Kent Wildlife Trust  
 MNE Maidstone Museum herbarium  
 OFC Orpington Field Club

## *Nardus stricta* L. (Mat-grass)

Draft account

vc 15 and 16

### Rarity / scarcity status

Mat-grass is found throughout the British Isles on acid ground, particularly in areas of higher rainfall, and so less frequent in central and eastern England and in central Ireland, and it may dominate large tracts of upland slopes and moorland. Its conservation status is one of 'Least Concern' in Great Britain; but in England it is treated as **Near Threatened**, because its area of occupancy in England is taken to have declined by 23% in comparing records for the periods 1930-69 and 1987-99. In lowland southern England it may be found in heathland, but this has been a declining habitat, and Kent has very little, in any event. It is currently restricted to four sites in the county, and is accordingly very **scarce**.

### Account

The first published record of Mat-grass in Kent was at Chislehurst Common in Thomas Johnson's 1633 edition of Gerard's Herball, added at the end of the book whilst printing was in progress. It shows how Johnson strove to make the work more complete than Gerard had achieved, and his care over accuracy of description (hence the work is often known as Gerard *emaculatus*, i.e. Gerard with blemishes removed).

\* In August last whiles this worke was in the Presse, and drawing to an end, I and M<sup>r</sup> William Broad were at Chiffel-hurst with my oft mentioned friend M<sup>r</sup> George Bowles, and going over the heath there I obserued this small *Spartum* whose figure I here giue, and whereof you shall find mention, in the place noted vnder the title of the figure; but it is not there described, for that I had not seen it, nor could finde the description thereof in any Author, but in Dutch, which I neither had, nor understood. Now this little Matweed hath some small creeping stringy roots: on which grow somewhat thicke heads, consisting of three or foure leaues, a little where wrapt together in one skin, biggest below, and so growing smaller vpwards, as in *Sebananth*, vntill they grow vp to the height of halfe an inch, then these russhie Greene leaues (whereof the longest scarce exceeds two inch) breake out of these whitish skins wherein they are wrapped, and lie along vpon the ground, and amongst these growes vp a small grassie stalke, some handfull or better high, bending backe the top, which carries two rowes of small chaffe seeds. It is in the perfection about the beginning of August.

This is also the first British record, a previous one from Hampstead Heath having been discounted.<sup>1</sup>

Hothfield]. Photo by Liam Rooney, 24 July 2013

Hanbury and Marshall (1899) considered it to be local on heaths and moors, very rare in the chalk districts. There were records for the acid ground of the north west Kent commons: Blackheath. Keston, Paul's Cray, St Mary Cray and Dartford Heath. They mentioned Thomas Forster (*Flora Tonbrigensis*, 1816), who considered the grass to be very common on sandy damp commons in the neighbourhood of Tunbridge Wells. There is also mention of wet pastures at Minster, Monkton and St Nicholas as well as Sarre Marshes (1847); it is not now obvious that there would have been appropriate habitat. G.E. Smith (*A Catalogue of Rare and Remarkable Phaenogamous Plants collected in south Kent*, 1829) knew it 'Upon the dry parts of Willesboro' Leas, Hothfield Heath', and this last location has been reported on a number of occasions since.



<sup>1</sup> Edgington, J.A. (2010). The first British Record of *Nardus stricta* L. (Poaceae). *Watsonia* **28**: 123-127.



Francis Rose was able to point to considerable continuity, with records at Chislehurst Common (grass-heath, 1945); Keston Common (1945); Hothfield (grass-heath, 1943); and Willesborough Lees (damp *Molinia-Agrostis* grassland on Folkestone Sands, 1950). The last two sites were part of a line of comparable geology across East Kent, which also gave rising to his sightings at Monks Horton Priory (TR 110 389, an acid boggy field on Folkestone Sands, 1953) and Gibbin's Brook (damp grass-heath on Folkestone Sands). However, although the species was specifically searched for, the 1971-80 survey (Philp, 1982) only produced two tetrad records: Hothfield and Hatch Park, the latter being another site along the Folkestone Sands. The 1991-2005 survey (Philp, 2010) could not locate the grass at Hothfield, but found it still at Hatch Park and also in Knole Park, Sevenoaks, where it has since been found growing in two sites, one at the head of a dry valley cutting through the Hythe Formation, with grassland on acid, fertile ground, long grazed by deer (as with Hatch Park) for whom the grass apparently has low palatability. It was also still present at Tunbridge Wells Common, another acid site with long continuity of grassland.



Hatch Park. Photo by Lliam Rooney, 21 July 2016

Our 2010-20 records support the continued presence of the grass at Hothfield (in spite of it not having been seen 1991-2005), Knole Park and Hatch Park. At the last site, it is frequent in an area of sandy ground c.50 x 50 metres, with very little other vegetation cover, other than mosses and lichens, but with some *Festuca filiformis* (Fine-leaved Sheep's-fescue), *Galium saxatile* (Heath Bedstraw) and

*Rumex acetosella* (Sheep's Sorrel). Searches have not yet succeeded in tracing it at Tunbridge Wells Common. A new site has been added, however, with the discovery of a patch about a foot across at Bedgebury pinetum on the Tunbridge Wells Sand Formation. The small size of the patch may point to possible introduction with forestry operations, but the location is such as would be consistent with native occurrence.

Hothfield. Photo by Lliam Rooney, 24 July 2013

*Nardus stricta* is a slow growing species, which would be likely to be out-competed, but for the infertility of the ground in which it grows. It spreads through rhizomatous growth at the rate of c. 20mm p.a., with the lower leaves spreading in a semi-circle, away from the old part of the rhizome, which persists for several years.<sup>2</sup> The effects of this were evident at Hatch Park, where it was noted (2016) that many old tussocks had expanded with circular growth, with the centre lost to decay. Spread by seed is supposed to be rare, the appearance of small isolated plants being normally a product of vegetative spread from branching rhizomes, where the branches have become separated through decay of the older parts, or tufts detached by



<sup>2</sup> Chadwick, M.J. (1960). *Nardus stricta* L. Biological Flora of the British Isles. *Journal of Ecology* **48**: 255-267

grazing have re-established elsewhere. It is a wiry, densely tufted grass, with a one-sided inflorescence of purplish-black flowers; the whitish old growth being distinctive when the flowers have gone over.

Site	Grid reference	Site status	Last record date	Recorder	Comments
Tunbridge Wells Common	TQ53U		(1) 11 June 2000 (2) Between 1991-1998 inclusive	(1) JP at KFC meeting (2) EGP (Philp, 2010)	(1) TQ5738; not mentioned in meeting report. (2) TQ53U. Recorded regularly in MP's notebooks 1992-2002 (per Ian Beavis) in company with <i>Campanula rotundifolia</i> and <i>Galium saxatile</i> ; the inferred location is south of Wellington Rocks. [Not found, 2017, 2018.]
Knole Park	TQ5452	SSSI	(1) 10 July 2019 (2) 5 October 2011 (3) after 1990, before 2006	(1) & (2) GK (3) EGP (Philp, 2010)	(1) Site as in 2011, but grass appeared more extensive. There is a very local main area where near-dominant, but scattered tufts beyond seemed more frequent than before. Bracken still in general vicinity but patchy, and it may be that control measures have been taken, as is the case further down the valley. (2) c. 5402 5241. Scattered tufts on south eastern slope of head of long valley in Knole Park, north west facing, over an area c. 20 x 20m. In deer-grazed <i>Agrostis capillaris</i> grassland on sandy / cherty ground. Threats: general bracken encroachment in the park. (3) TQ55L, which may apply to this colony or the next.
Knole Park	TQ5553		(1) 31 January 2020 (2) 28 July 2019	(1) & (2) GK & SK	(1) Off east end of Chestnut Walk in Knole Park, from TQ 55148 53546 to planted cedar at TQ 55207 53599, plus one plant eastwards of tree, c. TQ 55220 53614. Growing mostly in centre of the avenue between trees, dominant there in part, at times across full width. (2) c. TQ5514 5355 to TQ 5520 5359, in a strip 10m wide for about 70m along the eastern continuation of Chestnut walk, Knole Park, acid grassland of open ride. In part dominant, also scattered clumps. Associated flora: <i>Agrostis capillaris</i> , <i>Anthoxanthum odoratum</i> , <i>Juncus effusus</i> , <i>J. conglomeratus</i> , <i>Potentilla erecta</i> , <i>Galium saxatile</i> . A much stronger colony than that at the western end of Chestnut Walk.
Bedgebury pinetum	TQ7233		26 July 2016	SB & OL	One patch about a foot across on a path with the Pinetum at TQ 72271 33252.
Hothfield Common	TQ9645	KWT reserve	9 July 2013	SB	Scattered mats of plants on bare peat path from TQ.96905 45857 to cross path at TQ 96884 45838 continuing for a further 30m of path to TQ 96912 45816, with <i>Agrostis capillaris</i> , <i>Danthonia decumbens</i> , <i>Calluna vulgaris</i> ,

					<i>Deschampsia flexuosa</i> and <i>Potentilla erecta</i> .
Hatch Park	TR0640	SSSI	15 December 2011	SB	(a) One plant on path in Deer Park at TR 06594 40309. (b) Frequent in an area of sandy heathland approx 50 x 20m TR 06565 40985, in Deer Park with <i>Galium saxatile</i> and <i>Rumex acetosella</i> .
Hatch Park	TR0641	SSSI	(1) 21 July 2016 (2) 29 August 2013 (3) 15 December 2011 (4) 19 February 2002 (5) Between 1991-99 inclusive	(1) KBRG meeting (2) GK (3) SB (4) JP (5) EGP (Philp, 2010)	(1) TR 065 410, extensive on sandy ground, with fairly little vegetation beyond moss/lichen cover, at eastern edge of old sand pit, and extending down into it. (2) Extending beyond bounds of the sandy hollows east of footpath in deer park. Generally in very lightly vegetated areas, with <i>Festuca filiformis</i> . (3) Frequent in approx 50 x 50m of a sandy hollow at TR 06545 41033 in Deer Park. (4) TR04Q

## ***Narthecium ossifragum* (L.) Huds. (Bog Asphodel)**

Draft account

vc 15 and 16

### **Rarity / scarcity status**

Bog Asphodel is found throughout the British Isles on boggy ground and acid flushes, particularly in areas of higher rainfall, and so is less frequent in central and eastern England and in central Ireland. Its conservation status is one of 'Least Concern' in England and in Great Britain as a whole. In Kent, however, there is very little appropriate habitat, and the plant is **rare**.

### **Account**

The first published county record is that of John Blackstone in his *Specimen Botanicum* (1746), in which he refers to it being found 'In the Bogs near *Caesar's Camp* at *Bromley, Kent*. Mr. *Watson*.' (i.e., Keston). There are many historic records for this area. Whilst that for Ravensbourne Well, Keston given in Hanbury and Marshall (1899) presumably relates to *Caesar's Well* (TQ 4195 6404), now paved around and unsuitable but likely to have been the same location as Blackstone's, the plant also grew – and still does – in the small valley to the west, which harbours Keston Bog. A further historic record at Hayes Common, which is contiguous with Keston Common, may be different. Keston Bog itself has formed in a valley bearing a seasonal stream fed by lateral seepage, where the Blackheath Pebble member of the Harwich Formation is underlain by impermeable clay. A decline in its suitability for Bog Asphodel, due to tree shading and reduction in water availability through development appears to have been halted by conservation works, so that there is a good population here, in its only London (and West Kent) station.<sup>3</sup>



Hothfield. Photo by Lliam Rooney, 15 June 2010

Hothfield. Photo by Lliam Rooney, 5 July 2013



Otherwise, there have been few Kent record for this species. Thomas Forster (*Flora Tonbrigensis*, 1816) gave it as 'On the bogs, on Ashdown and Waterdown Forests, and on other bogs towards Tonbridge, very common'. It is often difficult to tell whether Forster's records (subtitled *A catalogue of plants growing wild in the neighbourhood of Tonbridge Wells*) relate to the Sussex or Kent part of the neighbourhood, but here it is clear that he was referring to

both. Ian Beavis refers to Fisher's Common, north of Mount Ephraim, as swallowed up by the development of Tunbridge Wells, but which 'was once a rich area of open heathland, including rock outcrops, freshwater

<sup>3</sup> John, J. & Price, J. (2014). Heathland restoration at Keston and Hayes Commons. *Transactions of the Kent Field Club* **19**: 75-99.

features and boggy areas with asphodel and sundew'.<sup>4</sup> A further location in the vicinity of Tunbridge Wells, Hawkenbury Bog, was mentioned in Philp (1982), but this (which has not survived as a bog habitat) is in botanical vice county 14, East Sussex.

In East Kent, G.E. Smith, in his *Catalogue of rare or remarkable Phaenogamous Plants* (1829) mentions the species at Willesborough Lees, then an area of 'treacherous bog', but now a habitat where surviving bog plants of open habitat are dependent on the occasional gaps made in tree cover; Bog Asphodel has not been reported there since. He remarked on the find there of a variety with narrow tapering eaves, tall stems, and pale flowers (there are normally golden yellow), and also noted it 'With *Lycopodium inundatum*, on Hothfield Heath near the first clump of fir trees to the left from Ashford'<sup>5</sup> Hanbury and Marshall (1899) remarked that it was not confined to this one station at Hothfield, and many botanist have since collected and/or recorded the species from Hothfield Common, where bogland arises through seepage from the Folkestone Formation where this meets the impermeable clays of the Sandgate Formation. Within this limited area, the species is not uncommon.

*Narthecium ossifragum* apparently grows best in wet acid conditions (but not standing pools) where there is frequent lateral movement of water and/or fluctuations in the water table, ideally where the summer water table is not within 10 cm of the surface<sup>6</sup>. It is sometimes regarded as an indicator of flushed conditions. At Hothfield main bog, which is not level, but which is in effect a sloping stream valley fed by lateral seepage, the water table has been noted as varying by 9cm at the stream location and not falling significantly below the surface, even in a dry summer; and elsewhere in the bog ranging from 4cm to 18cm below the surface, dropping to 25-40cm below in a dry summer (1973), 12-20cm in a wet summer (1974).<sup>7</sup> The bog therefore has at least in parts other than the main stream afforded conditions suitable for growth of *Narthecium ossifragum*, when studied in the 1970s.



Hothfield. Photo by David Steere, 17 July 2016

Plant communities where the species grows at Hothfield have been assessed by Alex Lockton as including M21 (*Narthecium ossifragum* – *Sphagnum papillosum* valley mire), in the middle of bog 2, where the water is most acid and there are hummocks of *Sphagnum*. This amounts to a typical southern English valley mire, albeit a rare habitat in Kent. *Narthecium* is also present in M29 community (*Hypericum elodes* – *Potamogeton polygonifolius* soakway) and M6 (*Carex echinata* – *Sphagnum recurvum* / *auriculatum* mire, although the *Sphagnum* species actually recorded here were *S. denticulatum*, *S. fallax* and *S. subnitens*).

<sup>4</sup> Beavis, I.C. (2014). Tunbridge Wells heathlands; past and present. *Transactions of the Kent Field Club* **19**: 100-107.

<sup>5</sup> As given in MS (1830-32) in Smith's own interleaved copy of his book, from which M.H. Cowell took this record for *A Floral Guide for East Kent* (1839).

<sup>6</sup> Summerfield, R.J. (1971). The ecology of *Narthecium ossifragum* (L.) Huds. Ph.D. thesis, University of Nottingham. Cited in Summerfield, R.J. (1974). *Narthecium ossifragum* (L.) Huds. Biological Flora of the British Isles. *Journal of Ecology* **62**: 325-339.

<sup>7</sup> Burnham, C.P. & Gooderham, P.T. (1975). The water regime of the upper part of the main bog at Hothfield, *Transactions of the Kent Field Club* **5(3)**: 139-141.



Site	Grid reference	Site status	Last record date	Recorder	Comments
Keston	TQ4164	SSSI	(1) 6 August 2016 (2) 28 May 2011 (3) 24 September 1992	(1) SL (2) OFC meeting (3) FR & PHa	(1) Keston Bog, small valley between TQ 4170 6423 and TQ 4171 6434. Abundant patches along flushes down eastern slope. (2) TQ 417 643, Keston Bog. (3) Very abundant now. There are numerous other records by many botanists over a long period.
Hothfield	TQ9645	SSSI, KWT reserve	(1) 1 July 2019 (2) 17 September 2018 (3) 17 July 2016 (4) 15 June 2010	(1) AL & JM (2) AW (3) DS (4) JA	(1) (a) TQ 9682 4565, by the boardwalk in bog 2, in M21 <i>Narthecium ossifragum</i> valley mire. (b) TQ 9697 4568, top of bog 2, M29 <i>Hypericum elodes</i> soakway. (c) TQ 9697 4568, middle of bog 2, M6 <i>Carex echinata</i> mire. (d) TQ 9694 4568, middle of bog 2, M21 <i>Narthecium ossifragum</i> valley mire. (2) TQ9645. (3) Main bog. (4) TQ 96827 45639 in bog 2. 500 + spikes just coming into full bloom. There are numerous other records by many botanists over a long period.



Hothfield. Photo by Liam Rooney, 5 July 2013

## ***Neotinea ustulata* (L.) R.M. Bateman, Pridgeon & M.W. Chase (= *Orchis ustulata* L., Burnt Orchid)**

Draft account

vc 15; long gone from vc 16

### **Rarity / scarcity status**

Burnt Orchid, once fairly widespread in Britain, has undergone a major decline since the 1930s, largely due to loss of habitat and changes in agricultural practices, and has retreated to Wiltshire, Hampshire and a few other localities. It is regarded as an **Endangered** species in both Great Britain as a whole and England, its area of occupancy in England having declined by over 50% in comparing records for the periods 1930-69 and 1987-99. In Kent it is **rare**.

Lydden. Photos by Lliam Rooney, 11 June 2013

### **Account**

The first Kentish record for the Burnt Orchid was published in 1732, in a translation by John Martyn of Tournefort's *History of Plants Growing about Paris*, in which Martyn added material by way of accommodating to Great Britain the French observations as regards Parisian status: it was then said to be present about Gravesend. Hanbury and Marshall (1899) considered the species to be local on chalk downs, but fairly frequent in some of the botanical districts. They summarised the earlier records, which included (by way of sample) presence 'Here and there on the chalk districts between Knockholt and Wrotham' (Edward Jenner, *A Flora of Tunbridge Wells*, 1845); 'Common between Dover and St. Margaret's' (W.H. Beeby); 'on the hills about Dover, sparingly' (Lewis Dillwyn, *Catalogue of the more rare Plants found in the Environs of Dover*, 1802); 'Queen Down Warren, Hartlip!, plentiful' (seen by Hanbury and/or Marshall); Blue-Bell Hill, 'Hills surrounding the lower Bell and overlooking Kits Cotty House' (record by W. Pamplin in M.H. Cowell's *A Floral Guide for East Kent*, 1839).



When Francis Rose came to write his (unpublished) *Flora*, c.1950-60, he found that the species was now rare, and that it had declined since Hanbury and Marshall's time due to ploughing up and lack of grazing, of chalk grassland. It was still in local abundance in some places on the chalk between the R. Stour and the coast, but since 1947 there had been records from only seven localities (in TQ86, TR04, 14, 23, 24 and 34), and it was long extinct in West Kent, vc 16. Some of his specimens in **MNE** carry habitat descriptions, e.g. at Langdon Bay in *Festuca ovina* turf on a cliff top about ¼ mile from the sea (1954); Woodville-Lydden Downs chalk grassland with *Festuca ovina*, *F. rubra*, *Brachypodium pinnatum* agg., *Bromopsis erecta*; 1 mile south west of Lydden, chalk pasture

on north west slope: *Festuca* – *Briza* – *Koeleria* – *Avenula* – *Carex flacca* (1959). As well as the limitations

imposed by the need of the species for short turf (without itself being grazed off), it is apparent from Francis Rose's data that, even in good localities, the occurrence of flowering plants was very variable, with occurrences at Queendown Warren in the period 1939-61 varying from nil or one, to 24 inflorescences.

Philp (1982) considered Burnt Orchid to be very rare and then known only from Queendown Warren, Wye Downs and in two areas of downland near Lydden, with only a few plants in each of these localities. From the 1990-2005 county survey (Philp, 2010), it had apparently gone from Queendown Warren (last seen, 1989<sup>8</sup>) and was only known, in small numbers from Wye Crown and the two Lydden areas. At Wye Crown, sightings in 2000 and 2006 have had no successors; and there was a gap in Lydden records after 2006. Many former Kentish sites were visited in 2011 as part of the BSBI's Threatened Plant Project, but no plants were seen, although some sites still appeared suitable. However, in 2013, Burnt Orchid re-appeared at Lydden NNR: two flowering plants, about 45m apart. They were growing on a chalk grassland slope (*Brachypodium pinnatum* agg. present, but not over-dominant), south to south west facing, with an associated flora including *Poterium sanguisorba* (Salad Burnet), *Briza media* (Quaking-grass), *Cirsium acaule* (Dwarf Thistle), *Lotus corniculatus* (Common Bird's-foot-trefoil), *Galium verum* (Lady's Bedstraw) and *Succisa pratensis* (Devil's-bit Scabious). After a gap, Burnt Orchid re-appeared there, a single plant, in May 2018; this was hand-pollinated, in order to increase the chances of persistence at this location, although the spike with swollen seed capsules disappeared next month. Two flowers appeared in 2019.



The outlook for *Neotinea ustulata* in Kent is not good, having regard to the pattern of long decline and erratic recent sightings. The traditional explanations for past decline (ploughing up, cessation of grazing, development) do not seem to provide a complete answer to its difficulties, which are not just a British issue: disappearance (the Netherlands) and decline (the Czech Republic) have been noted elsewhere in Europe. It is a particularly short-lived orchid, albeit with a long phase of seedling development, heavily mycorrhiza-dependent<sup>9</sup>, and so population recruitment appears far from straightforward. Absence or scarcity of its apparent pollinator *Tachina magnicornis* is also relevant. Then there is also the need for short turf, the flowering spike itself being with us seldom more than 15cm high and often less than 10cm, so that flowering might readily be affected adversely by the grazing regime or lack of it. Alfred Gay noted in 2010 that a former site at Warren Bottom, Lydden then seemed unsuitable, although the sward was very short, because the intensity of rabbit grazing was such that any vegetative growth would have been nibbled off. The converse situation is more likely, however, as with another site near Lydden, surveyed by Geoffrey Kitchener and Liam Rooney in 2011, where stock grazing was not undertaken, rabbits were few, with some scrubbing up having taken place and with coarse tussocks of *Brachypodium rupestre* dominating elsewhere.

The Kent form of *N. ustulata* is var. *ustulata* (flowering mid-May to mid-June); a later flowering variety (generally July), var. *aestivalis*, is also known from the South Downs of East Sussex. The species, whilst

<sup>8</sup> There are purported records of 2001 and 2011, but no recorder or detail assigned to them, other than a generic grid-reference for the reserve, so not capable of being validated.

<sup>9</sup> General information taken from Tali, K., Fooet, M.J.Y. & Kull, T. (2004). *Orchis ustulata* L. Biological Flora of the British Isles. *Journal of Ecology* **92**: 174-184.

appearing in some respects like a miniature *Orchis purpurea* (Lady Orchid) is not readily confusable with any other British orchid.

Site	Grid reference	Site status	Last record date	Recorder	Comments
Queendown Warren	TQ8262	KWT reserve	(1) 1 June 1989 (2) 20 May 1989 (3) 22 May 1971	(1) OD, PD & FR (2) MF (3) FR	(1) One inflorescence seen, only top florets seen. Probably same record as by OD, on east bank, TQ 828 628, last record for this site. (2) TQ 828 629. (3) By pylon; and opposite elms.
Wye Crown	TR04T		1991-2000	EGP (Philp, 2010)	
Wye Downs	TR0744		1979, 1980, 1981	JD	TR 077 449, compartment 21 of SSSI.
Lydden Spout	TR2645		1 June 1986	HW	16 plants.
Lydden	TR2744		20 May 1989	MF	TR 275 447
Lydden	TR2745	NNR	(1) 18 March 20120 (2) 15 May 2019  (3) 18 May 2018  (4) 14 June 2013  (5) 10 & 11 June 2013  (6) 1991-99 (7) 1996  (8) 9 June 1995 (9) 21 May 1989 (10) 23 June 1986 (11) 26 May 1972 (12) 22 May 1971	(1) AG (2)  (3) AG  (4) AG  (5) A&MT, KBRG meeting  (6) EGP (Philp, 2010) (7) Anon  (8) FR (9) MF (10), (11) & (12) FR	(1) 2 rosettes at earlie rsite. (2) Plant in flower, same grid ref and presumably the same plant as in 2018, plus another smaller one 2m away. Hand-pollinated. (2) TR 27787 45401, found independently later by other botanists. Hand-pollinated and swollen seed capsules present on 13 June, but only base of spike left on 25 June. (3) A further 2013 flowering plant at TR 2762 4548 (about 45 metres NWW of plant recorded earlier in the month). (4) Single flowering plant at TR 27659 45469, found on 10 June by A&MT, seen by KBRG meeting on 11 June, on S- facing <i>Brachypodium pinnatum</i> agg. grassland slope with associated flora <i>Poterium sanguisorba</i> , <i>Briza media</i> , <i>Cirsium acaule</i> , <i>Lotus corniculatus</i> , <i>Galium verum</i> and <i>Succisa pratensis</i> . (5) Recorded as TR24S – may be this monad. (6) Seen by warden and reported to FR, JP & IB, who did not find it on 6 June. (5) Seven plants in group. This record also given for 5 June, by pit. (8) TR 274 457. (9) 5 inflorescences on spur to west. (10) 17 plants, very fine. (11) On spur.
Lydden	TR24M	MOD land	(1) 30 May 2005 (2) 30 June 1986 (3) 1985	(1) PG & EGP (2) FR (3) FR	(1) TR24M. (2) Five inflorescences, Warren Lane. (3) Nine plants, Warren Lane. [ Not found at TR 255 448 in 2010 by AG, site overgrazed by rabbits.]
Langdon Bay	TR3442		1981	FH	



## *Neottia nidus-avis* (L.) Rich. (Bird's-nest Orchid)

Draft account.

vc 15 and 16

### Rarity / scarcity status

Bird's-nest Orchid is found in shady woodland scattered through most of the British Isles, especially in southern England. It is in Great Britain as a whole regarded as **Near Threatened**, but in England it is treated as **Vulnerable** to the risk of extinction, because its area of occupancy in England is taken to have declined by 32% in comparing records for the periods 1930-69 and 1987-99. In Kent, its tetrad distribution appears to have shrunk by 73% between the county surveys of 1971-80 and 1991-2005, although this extent of decline is not supported by subsequent recording. It is, however, neither rare nor scarce in the county. Its inclusion in the register reflects the national position and the view expressed in Philp (2010) that it appears to have declined in Kent quite seriously in recent times.

### Account

The first British record for the species is Kentish, by John Gerard in his Herball (1597): 'I found it growing in the middle of a wood in Kent two miles from Graves end, neer unto a worshipfull gentlemans house called master *William Swan*, of Howcke green [Hook Place, Hook Green, Southfleet]. The wood belongeth to one master *John Sidley*: which plant I did never see else where. And because it is very rare I am the more willing to give you all the markes in the wood for your better finding it, that is to say, the ground is covered all over in the same place neere about it with the herbe *Sanicle* [*Sanicula europaea*, Sanicle], and also the kinde of Orchis called *Hermaphroditica*, or Butter-flie Satyrion [*Platanthera chlorantha*, Greater Butterfly-orchid]'. It is unusual to get so fulsome a habitat description so early in botanical literature, it was an area well known to Gerard, and we can infer that this was probably deciduous woodland on chalk, possibly with some overlay of clay-with flints, and close to the interface of the Thanet Formation; and that the understorey was sufficiently open for Sanicle to grow, and the wood sufficiently shady for the Greater Butterfly-orchid.



Perry Wood. Photos by Liam Rooney, 23 May 2010

Hanbury and Marshall (1988) assessed its status as 'frequent, particularly on the chalk' in 'Shady woods and copses, chiefly under Yew, Beech and Hazel'. The historic and reported records which they give are well spread across the county, mostly on the chalk, but with outliers, e.g. Chislehurst, Cranbrook and Goudhurst. There are also specimens in **MNE** away from the chalk, such as at Abbey Wood (1861, woodland on Blackheath Beds); Hermitage Woods, Barming (1894, woodland on chert drift); Linton (1895, woodland on Hythe Beds). Some of this range of substrates was recognised by Francis Rose's collecting, but most of his records in the 1940s and 1950s fell into a familiar pattern: ¼ mile east of Downe in beechwood on chalk (1946); west of Shoreham, beechwood on edge of downs on chalk (1945); Longreach wood, Stockbury, mixed woodland on

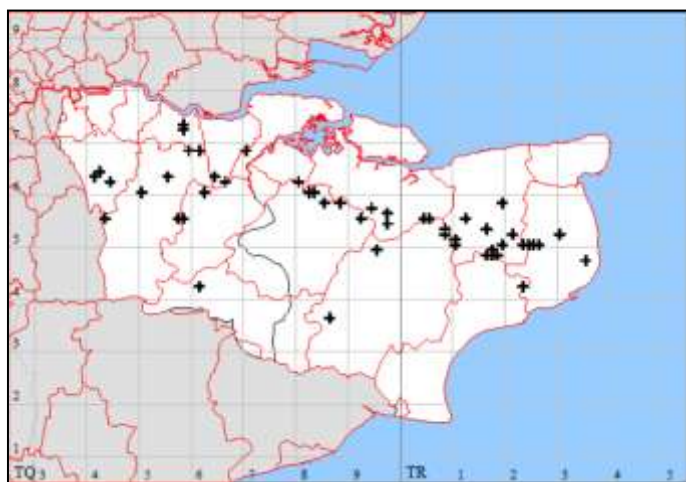
chalk – beech, yew, ash, etc. (1954); Wichling Wood, Sittingbourne, beechwood on chalk (1949); Syndale Wood, Ospringe, ash-hazel coppice on chalk (1956); east of Knowlton under beeches on chalk (1955).



Philp (1982) found Bird's-nest Orchid to be rather local, in 44 tetrads, in shady woods and copses, particularly under beech trees. However, the 1991-2005 survey published as Philp (2010) located the species in only 12 tetrads and it was supposed that there had been a serious decline. Our 2010-20 records do not support this position at all, as the orchid has been found in 42 tetrads (representing presence in 50 monads). Whilst it is likely that the species has declined since its historic status as 'frequent', presumably with the grubbing out of woodland, the change from broad-leaved tree planting to conifers (now no longer so prevalent) and the use of heavy machinery in forestry operations, it is unclear how far these causes are represented in recent decline. It is likely that some of the apparent change between 1971-80 (Philp, 1982) and 1991-2005 (Philp, 2010) is a product of recording methods. The former survey was undertaken by a network of Kent Field Club recorders and the latter by Eric Philp alone: orchid records in particular appear likely to be collected more thoroughly by crowd-sourcing.

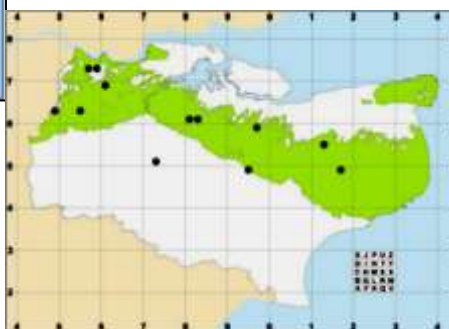
However, there has been a decline in population sizes since towards the end of the 20<sup>th</sup> century (David Johnson, pers. comm.), with some west Kent colonies reducing from c. 20 plants to a handful, so that continued presence in a tetrad or monad is not fully indicative of healthy status. Nevertheless, some substantial populations remain: 40 spikes were counted by David Johnson and Alfred Gay in 2013 at Covet Wood (TR1848), growing amongst numerous plants of its relative, *Neottia ovata* (Common Twayblade); and in the same year Sue Buckingham recorded c. 250 spikes at Woolage (TR2350) under beech with abundant

*Cephalanthera damasonium* (White Helleborine), which favours the same habitat; over 120 plants were seen in 2018 near Tilmanstone (TR3052) by Steve Coates and Mel Lloyd.



*Neottia nidus-avis* (Bird's-nest Orchid) 2010-20

*Neottia nidus-avis* (Bird's-nest Orchid)  
1991-2005  
(showing relationship with chalk – green)



In view of the number of records of Bird's-nest Orchid in Kent, the distributional data maintained in this register will be at 1km square (monad) level. This will entail recording at a finer scale than the tetrads given in Philp (2010), from which the accompanying 1991-2005 map is taken (with kind permission of the late Eric Philp and the Kent Field Club).

*Neottia nidus-avis* lacks chlorophyll and for the acquisition of nutrients it is dependent upon mycorrhizal fungi which themselves have an association with the roots of trees for the transport of water, carbon and other nutrients. It also appears that the presence of a specific mycorrhizal fungus (aff. *Sebacina dimitica*) is also requisite for germination and seedling growth of the orchid. Accordingly, *Neottia nidus-avis* grows in shaded habitats where chlorophyllous plants may be unable to survive, but the apparent suitability of the habitat may not assist if the fungus is not present; this may also point to the strong association with beech, and to clumping of populations where germination follows the patchy presence of the associative fungus. Our 2010-18 records are mostly associated with the leaf litter and deep shade of beech, although there are also sightings in the presence of chestnut coppice with hazel (Pembury Walks – also with atypical geology); hornbeam and yew (Trottiscliffe); yew (Stockbury Hill Wood); alder and hazel (Charing); hornbeam and hazel (Denge Woods); ash-hazel-maple woodland (Denge Woods again); birch and hornbeam (Knowle Wood, Kingston).

The flowers are pollinated by a variety of insects, and Darwin noted pollinia which had been removed during the process. He remarked on an unusually fine spike, sent to him by Mr. Oxenden from South Kent, which had 41 flowers and bore 27 large capsules as well as smaller ones.<sup>10</sup>



Perry Wood. Photo by Liam Rooney, 23 May 2010

When seen, and this may not be easy in poor lighting camouflaged against dead leaves, the orchid is not readily mistaken for any other species except, perhaps, for *Orobanche* spp. (Broomrapes), which can be a similar yellowish-brown as they also lack chlorophyll. Hanbury and Marshall (1899) rejected a coastal cliff record near Dover on the basis of just such confusion. *Orobanche* may be expected to grow in well-lit conditions where there are chlorophyllous plants to parasitise. *Orobanche hederæ* (Ivy Broomrape) is most likely to venture into marginal woodland shade; but normally the habitat of *Neottia nidus-avis* would be very distinct, and *Orobanche* flowers have a three-lobed lower lip; the orchid's lip is two-lobed.

<sup>10</sup> Darwin, C. (1862). *On the various contrivances by which British and foreign orchids are fertilised by insect, and on the good effects of intercrossing*. John Murray, London.



## *Nepeta cataria* L. (Cat-mint)

Draft account.

vc 15 and 16

### Rarity / scarcity status

Cat-mint is currently considered to be an archaeophyte, or ancient introduction, derived from its herbal use and now scattered in grassland, waysides and rough calcareous ground in England and Wales. It is in Great Britain as a whole and in England regarded as **Vulnerable** to the risk of extinction, because its area of occupancy in England is taken to have declined by 34% in comparing records for the periods 1930-69 and 1987-99. In Kent there is evidence of decline after 1971-80, and it is (just) **scarce**.

Conyer. Photos by Liam Rooney, 13 August 2013

### Account

The species was first noted in Kent by Thomas Johnson (*Iter Plantarum*, 1629) in the course of his journey between Gravesend and Rochester, and it also featured in his *Descriptio Itineris* (1632), when found in the company of a local medical practitioner during an expedition between Margate and Nash. Hanbury and Marshall (1899) thought that it might be native (as, indeed, have many British authors in the past) and found that it was not uncommon in hedges and on dry banks, but absent from the Weald, other than Tunbridge Wells. Where habitats are given in their cited records, they include chalk pits, brickfields, roadsides, waste places, hedgebanks and cliffs. A record from H. Lamb at Boxley is given which, from a specimen in **MNE** (1887), appears to have been from the edge of a lane near Boxley Abbey, which might suggest an older origin from cultivation; the relationship between gardens and wild status seems equivocal at times.



Francis Rose had records from Upper Halling (roadside bank on chalk, 1946); Capstone (roadside hedgebank on chalk, 1958); and east of Brook (lane hedgebank on chalk, 1947, 1952) – all very similar habitats.

Philp (1982) gave 19 tetrad records, almost all in the north west of the county, and treated Cat-mint as rather local and scarce, usually on chalk. A sharp decline is shown by the data in Philp (2010), with substantial loss of the north west concentration, not off-set by a small scatter of records elsewhere. Only ten tetrad records are noted, a decline of 47%.

It is apparent, however, that there were further records not known to Eric Philp for the purposes of the 1991-2005 survey, and which show that presence in north west Kent continued. For example, it was present at Crockenhill Lane, Eynsford from 1997 to 1999 (TQ 530 664, Rodney Burton); in a scrap of hedgerow by the path to Hogs Wood, Knatts Valley in 1998 (presumably TQ5563, Joyce Pitt); and six plants below Stone Church in 1995 (TQ577645, John Palmer). Outside that survey period it

was known in Lullingstone Park, most recently in 2007 on an earth heap (TQ 5257 6438, Rodney Burton), where it did not persist.



Our 2010-20 records are less substantial, with only eleven tetrad records, from the same number of monads. Those records relate to a garage forecourt in Bexleyheath (2010-11); a chalk valley at Luddesdown (23 plants, 2011); a disturbed chalk slope above Holborough (six or seven plants, 2015); the chalk Medway valley slopes above Wouldham (at least 30 plants, 2012); a scattering in several places at the old Conyer brickworks (many plants, 2012-13); near Coombe Farm, Wye (one plant, 2010); chalky ground disturbed by roadworks at Burham (2017); a car park at Sole Street (2017); and grassy slopes on chalk at Polhill (2018). These records are given in the accompanying distribution map at 1km square (monad) level and perhaps show a little more clearly a chalk-related distribution than the accompanying 1991-2005 map, taken from Philp (2010) with kind permission of the late Eric Philp and the Kent Field Club.



*Nepeta cataria* (Cat-mint) 2010-20



*Nepeta cataria* (Cat-mint) 1991-2005

It is very much a plant of disturbed ground and often casual only. Whilst it may disappear as a consequence of further disturbance, the longevity of the seed and the likelihood that its germination is staggered offers the prospect of re-appearance. It is unlikely to be confused with other species except, possibly, for *Marrubium vulgare* (White Horehound), which is rarer in Kent. The latter's inflorescence whorls are, however, spaced out along the stem, whereas those of *Nepeta cataria* are terminal. Also, the smell of *Marrubium* is reminiscent of thyme; Cat-mint is, unsurprisingly, minty.



Conyer. Photo by  
Liam Rooney, 13  
August 2013

Lullingstone Park.  
Photo by Rodney  
Burton, 26  
August 2007



## *Nymphoides peltata* Kuntze (Fringed Water-lily)

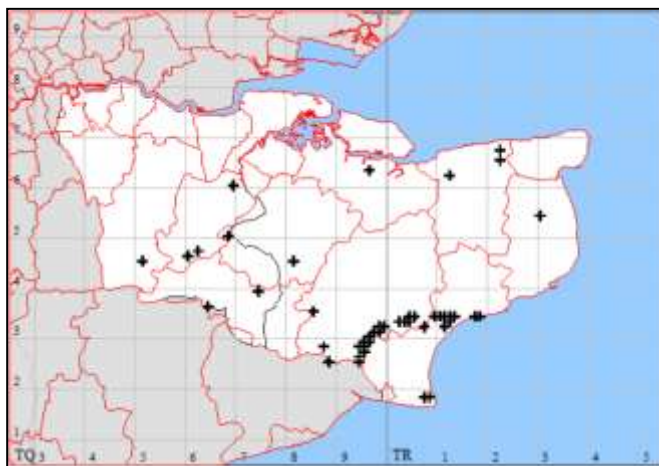
Draft account.

vc 15 and 16

### Rarity / scarcity status

*Nymphoides peltata* was included in the rare plant register on the basis that it was listed in the Joint Nature Conservation Committee taxon designation spreadsheet as nationally scarce. This designation is based on a plant being recorded in only 16 to 100 hectads (10km squares) in Great Britain. However, the *New Atlas of the British and Irish Flora* (ed. Preston, C.D., Pearman, D.A. & Dines, T.D., 2002) gives *Nymphoides peltata* as present in 441 hectads during the period 1987-99. It is therefore apparent that any assessment of the species as nationally scarce must be restricted to localities where it is regarded as native. The *New Atlas* treats 30 hectads as of native occurrence (in the Thames basin and the East Anglian fens) and the remaining 411 hectads, including all Kent records, as relating to introductions. Its conservation risk status in England and in Great Britain as a whole is of 'Least Concern'.

It is not uncommon in Kent. The core distribution area for Fringed Water-lily in Kent is the Royal Military Canal, constructed 1804-09. The species was unknown, there and elsewhere in the county, to Hanbury and Marshall (1899), and the first record on the canal appears to have been in 1959, near Appledore. On the basis that all Kent plants may be assumed to be introduced (subject to the possibility that birds may be responsible for transmission to further sites from introductions elsewhere<sup>11</sup>), there is limited value to the species' inclusion in the rare plant register, and information will be limited to its mapped 2010-20 distribution.



*Nymphoides peltata* (Fringed Water-lily) 2010-20



Appledore. Photo by Lliam Rooney, 16 July 2015

<sup>11</sup> Suggested by Francis Rose as a possibility in relation to a lake (former gravel pit) at Leybourne Castle (specimen, 1955, at **MNE**). It seems that such transmission would have to be by being caught up on the bodies of wildfowl, and not by passage through the digestive tract.