The Fenland Flora at the start of 2017

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Progress in the *Fenland Flora* during 2016

Although the origins of the *Fenland Flora* project go back further, formal data-gathering began in 2005/6. We aim to complete the systematic recording by the end of 2018 and hence we are right in the middle of the "big push" to which we referred last year. From the outset, we have worked closely with BSBI recorders for the Fenland vice-counties *i.e.* Cambridgeshire, Huntingdonshire, Lincolnshire (north & south), west Norfolk, Northamptonshire and west Suffolk. Many of these vice-county recorders have already transferred copies of their Fenland data to the project, and that process should be completed by 2018 to create an as comprehensive as possible picture of the plants of the Fenland in the first two decades of the 21st century. Some of the imbalance in the coverage map included with this newsletter reflects this progression, with coverage apparently far better in the south and west than the north and east. However, when all the data are collated, we expect all but a few marginal (mainly coastal) tetrads to have at least 150 vascular plant species recorded.

When we took on the *Fenland Flora* project, we knew that it would sink or swim dependent on the inputs of other botanists and naturalists and, as in previous years, we want to express our real gratitude to these colleagues and everyone else who has donated data. Four individuals have made an especially notable contribution of data in 2016. Lewis Saunders (Wisbech) has made his "local patch" amongst the most intensively recorded areas in Fenland and discovered "quality" species as well as quantity. Robin Stevenson (King's Lynn) took on the sliver of Fenland situated on the east shore of the Wash north of Lynn. This area was added late to our definition of Fenland and consequently was under-recorded, as well as being difficult for public access. Robin brought the southern 2/3 more than up to scratch in 2016 and hopes to complete that work in 2017. Jonathan Shanklin much exceeded his role as vice-county recorder for Cambridgeshire, ranging far and wide and contributing data for all the Fenland counties. Jeremy Fraser has done a superb job on the drain flora in Lincolnshire and much of his vc 53 data were transferred to us in early 2017.

The involvement of county flora groups has been highly significant, with targeted excursions in Fenland in 2016, as well as planned for 2017. Special thanks go to our fellow botanists in Norfolk (Jo Parmenter, Richard Carter and Bob Ellis), Cambridgeshire (Alan Leslie and Jonathan Shanklin) and Lincolnshire/Northamptonshire (Sarah Lambert and Alyson Freeman). These field meetings are extremely effective not only in recording an area in detail but also in sharing knowledge about plant identification, ecology and natural history. Details of meetings in 2017 should soon be available on the web-pages of both the *Fenland Flora* and the flora groups themselves.

Fenland botanical highlights from 2016

One could, somewhat arbitrarily, describe the habitats of the Fenland within seven categories: a) semi-natural fragments such as Wicken Fen; b) older grasslands (wash-lands, flood-banks and drove verges); c) drainage channels large and small; d) the coastal fringe; e) arable land and headlands; f) rural road verges; and g) ruderal habitats within and near villages and other habitation. One could also contrast the flora of the Fenland margin, where it abuts the high ground, and that of the open expanses of the Fenland proper.

Water Violet (*Hottonia palustris*) in wetland restoration site near Methwold © Jon Graham (2016)

Much attention has been devoted to the great Fenland nature reserves and sites such as Wicken, Woodwalton, Holme and Baston Fens are amongst the best known and most valuable plant sites we have. In 2016, Kerry Harrison (Bourne) contributed an updated account of Baston Fen and its associated smaller protected areas. He confirmed that the sedge *Carex x subgracilis* (hybrid between Slender Tufted-sedge and Lesser Pond-sedge) grew in two places – one of just 20 British sites known for this plant since 1980. He also found *Eleocharis uniglumis* near Pinchbeck, a species that is very rare in Fenland away from Wicken and the Nene Washes.

Some of the finest semi-natural grasslands in Fenland occur on the banks of major drains and rivers such as the outfall of the Nene, Newham Drain (near Mareham-le-Fen), the South Forty Foot, the Hobhole Drain and the South Holland Main Drain. Here short grasslands are maintained by the IDBs and the Environment Agency, often picked out by Glaucous Sedge (*Carex flacca*) and the tiny plants of Fairy Flax. Various orchid species occur in such sites, and in 2016, somewhat unexpectedly, some new sites for Pyramidal Orchid (*Anacamptis pyramidalis*) were found on drain banks, together with the much more common Bee Orchid (*Ophrys apifera*). However, probably the most exciting drain-bank record of 2016 was made by Steven Heathcote downstream of Sutton Bridge, where he found the elusive Slender Hare's-ear (*Bupleurum tenuissimum*) at the upper edge of a saltmarsh. Old pastures are decidedly uncommon in Fenland and usually associated with the former islands or the transition to the upland. In a site of this type by Soham, Chris Preston and Jon found Fen Dandelion (*Taraxacum palustre*) in April – its first recent Fenland locality away from Wicken Fen. Less glamorous, but for Fenland of great interest, was Robin Stevenson's record of Oval Sedge (*Carex leporina*) on Marsh Common, North Wootton. Robin's study area included the coastal dune and shingle grasslands toward Snettisham where he confirmed both Field Mouse-ear (*Cerastium arvense*) and the nationally scarce Clustered Clover (*Trifolium glomeratum*) as Fenland plants.

In many respects, the most consistently valuable features of the Fenland landscape for native plants are the ditches and drains, with their aquatic flora. We have drawn attention before to the frequency of nationally vulnerable species such as *Baldellia ranunculoides, Groenlandia densa* and *Myriophyllum verticillatum* in Fenland ditches, with several new sites being added in 2016, including an interesting range extension for *Groenlandia* close to Hagnaby Lock. Two scarce pondweeds continued their apparent spread in Fenland: Grass-wrack Pondweed (*Potamogeton compressus*) abundant in Bevill's Leam and Long-stalked Pondweed (*P. praelongus*) shown to be widespread in the Cut-off Channel as well as growing with *P. compressus* near Whittlesey. Not all 2016 records reflect a seeming increase but instead demonstrate survival of species typical of oligotrophic situations over many decades in favourable sites *e.g.* Bulbous Rush (*Juncus bulbosus*) at Blackbush, near Whittlesey. Some aquatic plants seem to be found mainly in pits and ponds, and in 2016 Owen found *Ceratophyllum submersum* in a pit near Swineshead, a second post-2000 record for vc 53 to that discovered five or so kilometres further east in 2015.

Bulbous Rush (*Juncus bulbosus*) from a Blackbush drain © Jon Graham (2016)

The saltmarshes of the Wash are very extensive, but not especially species-rich though they do possess several halophytic plants near their northern limit in the UK. The *Bupleurum* site mentioned earlier could be included here too. Jonathan Shanklin reported *Elytrigia x drucei* (the hybrid between Common and Sea Couches) at Foul Anchor in its only modern Fenland site, though Irene Weston and Joan Gibbons knew it on Kirton Marsh in the early 1980s. The phenomenon of coastal plants growing inland by salted roads is now well known, but 2016 saw important new records by Lewis Saunders for *Catapodium marinum* at three sites near Wisbech and Elm and for *Parapholis strigosa* at Walsoken and Walton Highway. Even further from the sea, Jonathan Shanklin noted Sea Mouse-ear (*Cerastium diffusum*) on a verge near Ramsey Forty Foot. Hairy Buttercup (*Ranunculus sardous*) is normally a plant of wet coastal pastures but Robin Stevenson found it in a wet arable field north of Lynn.

Arable land is easily the most extensive Fenland habitat, and several nationally or regionally uncommon weeds are shown to be frequent in the region. Some are more typical of chalky sites *e.g. Polygonum rurivagum*, which has been recorded now at several sites in the Fens. Others are mainly native to western Britain, but are now turning up in Fenland. Common Ramping-fumitory (*Fumaria muralis subsp. boraei*) was first recorded for vc 54 (North Lincolnshire) in 2014 during Fenland Flora surveys, and a second record in that vice-county was made in 2016 near Bardney. However, in the Wisbech area, in 2016 Lewis Saunders recorded several populations of *F. muralis* (in the broad sense) in both Cambridgeshire and West Norfolk (previously rare in both vice-counties).

Sea Fern-grass (*Catapodium marinum*) in Wisbech © Lewis Saunders (2016)

Common Ramping-fumitory (*Fumaria muralis*) near Wisbech © Lewis Saunders (2016)

Among neophyte weeds in Fenland, White Wall-rocket (*Diplotaxis erucoides*) is especially notable, as our survey work shows that it is common in headlands, particularly those of cabbage fields, from Gedney Drove End around the Wash to Wainfleet – many new tetrad records were added in 2016. More locally, Small Mallow (*Malva pusilla*) was found to be common in headlands within an area east

of Littleport. Other notable non-native arable weeds that were discovered in new locations in 2016 include Bullwort (*Ammi majus*) in Deeping Fen, Ripgut Brome (*Anisantha rigida*) close to Bardney and Red Buffalo-bur (*Solanum sisymbriifolium*) at Wrangle Tofts, probably as a relic from cultivation (a whole field of this was observed cultivated at Donington Eaudike).

White Wall-rocket (*Diplotaxis erucoides*) near Tydd St Mary © Lewis Saunders (2015)

Many rural road verges in Fenland are rather over-fertile and coarse but, where they are mown or otherwise disturbed, notable interesting native and alien species have been found. Where the soil is dry, open and often sandy, Knotted Clover (*Trifolium striatum*) has been discovered near Kirkby Fenside and also by a roundabout near Witchford, where Jonathan Shanklin also found Small Medick (*Medicago minima*). Away from public roads on short turf by a gravel track on Block Fen, Alan Leslie re-found Bearded Fescue (*Vulpia ciliata subsp. ambigua*) in a site first noted by Graham Easy in 1991. More obviously non-native species that are spreading on Fenland verges include the Musk Stork's-bill (*Erodium moschatum*), which has reached Carrington in Lincolnshire, Cut-leaved Teasel (*Dipsacus laciniatus*) near Southery and Narrow-leaved Ragwort (*Senecio inaequidens*) near Whittlesey.

Urban and ruderal habitats are a prime location for neophytes but some important native species have been found by habitation in 2016. Thus, Lewis Saunders observed three populations of the Glabrous Whitlow-grass (*Erophila glabrescens*) in Wisbech, on pavement cracks and at the foot of walls – the only Fenland records since 1980. Early Meadow-grass (*Poa infirma*) has spread hugely in Britain from its heartland along the southwest coast in recent years, with Fenland sites found in 2016 by Alan Leslie at Littleport and Elford Closes. Lesser Chickweed (*Stellaria pallida*) has long been known to be common in East Anglia, but fieldwork now reveals it also to be frequent in Fenland in open dry sites, wall-tops and in conifer shade, including several new sites in 2016.

Rather as described for White Wall-rocket, certain formerly absent or rare species are now widespread and common in Fenland, especially in towns and villages. Two *Polypogon* species have been recorded with increasing frequency and with several 2016 records: Annual Beard-grass (*P. monspeliensis*) often forms large populations in rutted wet waste ground, whereas Water Bent (*P. viridis*) is a common feature at the foot of walls and on the edge of gravel drives. Lewis Saunders found a mixed population of garlics on the banks of the Maud Foster Drain in Boston, both of which were new to Fenland: Rosy Garlic (*Allium roseum*) and Neopolitan Garlic (*A. neopolitanum*). Some non-native species with very few records nationally now have Fenland sites. Jonathan Shanklin discovered Hungarian Clover (*Trifolium pannonicum*) on a track near a dump at Tydd St Mary's. Robin Stevenson's scouring of piles of paper-waste in the Outmarsh north of Lynn produced Cape-gooseberry (*Physalis peruviana*) and Butternut Squash (*Cucurbita moschata*) in what appears to be its first wild British record – see his article in the *Norfolk Flora Group Winter Newsletter* for 2016/17 (Issue 2).

As mentioned in previous newsletters, we have devoted increasing effort to defining the precise margin of Fenland, and understanding which species are absent from our area, which are Fenland specialists and which only penetrate the very edges of the Fens. Once again, Robin Stevenson's work has helped illuminate this. Fenland directly abuts the remarkable lowland heath and mire of Dersingham Bog NNR on the Greensand, and he has been able to show that some calcifuge and shade species do occur in what is certainly Fenland, often associated with conifer shelter-belts (*e.g*. Heath Bedstraw (*Galium saxatile*) and Bearded Couch (*Elymus caninus*)). In this area, Large Bitter-cress (*Cardamine amara*) grows by the Babingley River quite close to the coast. Working with the Norfolk Flora Group in 2016, we found Hoary Mullein (*Verbascum pulverulentum*) had spread from its Norfolk stronghold onto Fenland droves and waste ground at West Dereham, whilst otherwise frequent calcifuge plants such as Creeping Soft-grass (*Holcus mollis*) and Corn Spurrey (*Spergula arvensis*) had some of their only Fenland sites on shaded verges and arable land in the same broad area.

Old woodland is now very nearly absent from Fenland (or hugely degraded) but typical species, such as Wood Sedge (*Carex sylvatica*) infiltrate Fenland on ditch banks near Southrey Wood in Lincolnshire and Three-veined Sandwort (*Moehringia trinervia*) does the same thing at several sites, including Kirkby Bank, surveyed by Bill Meek and Owen in 2016. However, working along the Cat's Water Plantation near Thorney last year, Jonathan Shanklin found not only *M. trinervia*, but also Wood Anemone (*A. nemorosa*) and Dog's Mercury (*Mercurialis perennis*) – a fine assemblage for Fenland.

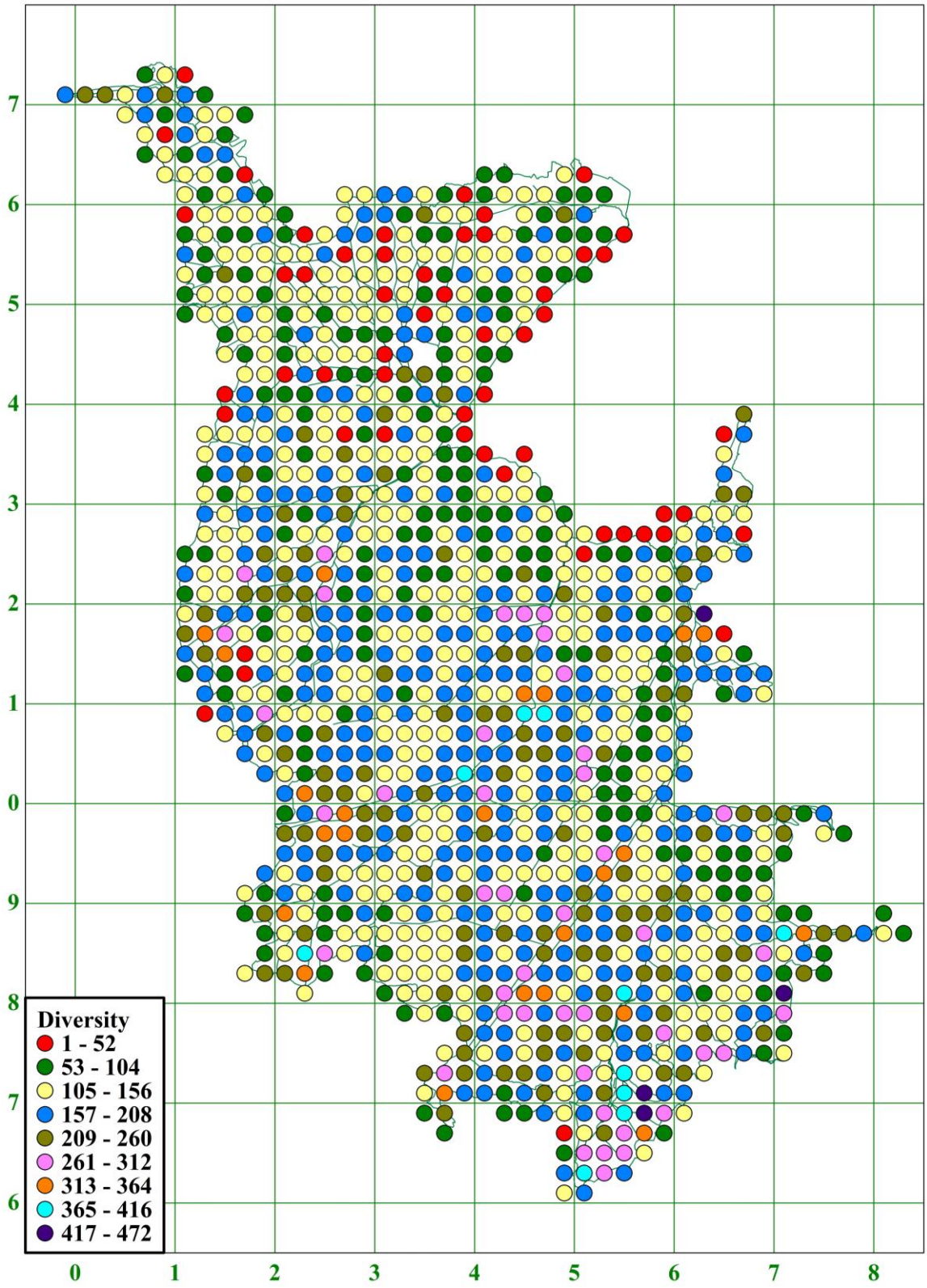
Not all the special plants of 2016 have been confirmed as yet, and some revisiting of sites to gather further voucher specimens will be necessary. Hence records of *Epilobium lanceolatum* from Wootton Marsh, *Polypogon maritimus* from King's Dyke and *Chenopodium chenopodioides* from close to the Haven near Boston must still be regarded as provisional. All the more reason to get out in 2017!

What should we do and where should we go in 2017?

As we near the end of the fieldwork, our efforts may become increasingly focussed, though clearly similar to those we've stated in the last three years:

- Precedence should still go to those areas where we have as yet no *Fenland Flora* data (blank on the map), especially in the east part of the North Lincolnshire (vc 54) Fenland.
- With the exception of some coastal tetrads, and those at the landward edge (where only a fragment of Fenland is present), we believe that it should be possible to find at least 100 species even in the most uniform arable fenland with few wet ditches and no villages. In most cases a total of 150 species should be attainable. Thus, another focus must be the "red" (≤53 species recorded) and "green tetrads" (54-106 species recorded) which merit more attention.

Fenland Flora coverage at the end of 2016
Numbers of species recorded since 2000



Note that these totals only reflect records already incorporated within our database, and that totals for Lincolnshire (especially North, vc 54) and West Norfolk will increase as BSBI data are transferred.

- We must continue to target the "Fen edge" tetrads to be sure which taxa occur in Fenland and which do not, especially in Suffolk and Cambridgeshire where data transfer from the BSBI vice-county recorder has already occurred and where the good totals may be inflated.
- We expect 2018 to be a sweeping-up year but also one where we will target sites of classic Fenland specialities and rarities, especially where the plants have not been observed recently. That process of assessing the key Fenland sites and populations can start in 2017.

However, we still maintain that more data from anywhere in Fenland are useful. The *Fenland Flora* sets out to improve the botanical knowledge of this region of the UK and to ensure that our region is properly covered for the next national Atlas as well as our own project. Finally, there is no reason for a "close-season". Sarah Lambert and Pete Kirby were out in a tetrad near Crowland on the 9th January 2017 - 136 species were observable at that time, amongst which were *Groenlandia* and the uncommon Clustered Stonewort (*Tolypella glomerata*)!

Anyone interested in contributing to the Fenland Flora should contact:

Owen Mountford at om@ceh.ac.uk or fenburdock@icloud.com and 193 Great North Road, Eaton Socon, St Neots, Cambridgeshire, PE19 8EE *or*
Jonathan Graham at jonathan.graham@ntlworld.com

Web-page on the BSBI website: http://www.bsbi.org.uk/fenland.html

To help recorders, we will provide on request:

- Standard BRC record cards and those specific to each of the Fenland counties
- Documents defining what we mean by Fenland – especially important at the edge of our recording area
- Prospectus for potential recorders, outlining what the project is trying to achieve and how other potential recorders can help
- The updated listing of priority tetrads for survey, identifying those with no *Fenland Flora* data or with fewer than 53 species recorded.
- Back-up with difficult identifications

Once more, we wish you happy botanising in 2017, with our huge thanks for your efforts so far and look forward to your future contributions toward putting the flowers of Fenland on the map.

Jon and Owen, 20th March 2017

Fen Violet (*Viola persicifolia*) at Verrall's Fen, Wicken © Pete Stroh BSBI (2014)