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Spring 2009



**Distribution of alien species**  
**Threatened Plants 2009**  
**BAP Report on *Luronium natans***  
**Is *Carex maritima* extinct in England?**

# BSBI Recorder

A newsletter for county recorders, referees and herbarium curators in the Botanical Society of the British Isles

13<sup>th</sup> Edition

April 2009

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Cover photograph: leaves of *Fallopia japonica* (A.J. Lockton)

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## Summary

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Our annual list of the important things to do...

1. Please think about sending in your records for Date Class 4 soon. The Maps Scheme is turning out to be one of the best things for making the BSBI influential in universities and in the conservation sector – the highly structured data is invaluable for research, and the constant updating makes it useful for studying such things as the conservation status of a plant or the spread of new aliens. Anyone using Mapmate only needs to sync their data to Bob and the job is done.
2. Happily, this involves no work whatsoever at the moment, but the plan for DC5 (2010-2019) is to make a new date class and to make sure all recording goes over to tetrad scale or better. See the articles in this newsletter to appreciate the much greater value that tetrad recording gives when applied at a national scale. Neither the Maps Scheme nor the conversion to tetrad recording should make any extra work for anyone – with computerisation they are very little effort. All you have to do is make sure you get out and about in your county from one year to the next.
3. Complete an annual return. Many have done so already, on-line, but a printed copy is included to jog the memory of those who haven't. All of us read them, and they are full of insights, comments and criticisms that we find valuable. You can read many of them in the VC Roundup – and note that many recorders are now contributing their own accounts.
4. Take part in the TPP 2009 survey. There was a really good response for the first year (2008) of this new project, and thank you very much. We promise the 2010 papers will be sent out before Christmas, but please take part and enthuse other helpers in your county.

# Progress with the Maps Scheme

Alex Lockton (coordinator@bsbi.org.uk) & Quentin Groom (quentin@bsbi.org.uk)

The Maps Scheme was launched in 2005, to see how well county recorders were getting on with surveying plants in the aftermath of the New Atlas. The data flowing in since then has been quite astonishing. We simplify all records so that a species can only be recorded once in any hectad in a date class. This is a unit dubbed a 'smartie', because it causes a brightly-coloured dot to appear on the Map Scheme Maps. No matter how many records you make in a hectad, you only get the one smartie until the next date class starts.

The key to the success of the Maps Scheme is the rate at which smarties are added to the system. To date you have added just over 1.1 million in DC4, which is post-2000. This is considerably faster than data was accumulated during the New Atlas project and will hopefully lead to nearly the same level of recording as the data comes in over the next year or two.

This raises some interesting possibilities for future recording. If the BSBI can make roughly the same number of records every decade through the 21<sup>st</sup> century, then we will have truly comparable data, and analyses will be far more meaningful. If we can say a species has increased or decreased by a certain percentage, we will be comparing like with like, not performing a complex statistical analysis which may or may not be truly valid. It would put botanical recording on the same footing as, say, the recording of birds or butterflies.

So please carry on sending in your data. Don't worry too much about checking your data sets – we will do that retrospectively when all the records are in. And do please carry on surveying your counties on a steady, thorough, basis, trying to get to all the 10km squares every decade or so.

**County Statistics, March 2009.** Columns show the number of smarties in date classes (0 = -1929; 1 = 1930-1969; 2 = 1970-1986; 3 = 1987-1999; 4 = 2000-2009).

VC	0	1	2	3	4	3/4	VC	0	1	2	3	4	3/4
1	7939	14487	12913	16149	10847	67%	26	1203	13380	6062	13052	13021	100%
2	8123	16964	11568	23764	15860	67%	27	2372	15605	4261	27081	16771	62%
3	2184	24512	28191	36529	15240	42%	28	3141	15244	4358	26445	17977	68%
4	1031	16485	20665	20921	9215	44%	29	3076	16967	12040	16610	3780	23%
5	1053	11798	3347	26291	14299	54%	30	317	10735	13557	13063	11282	86%
6	4877	15232	11372	28157	16378	58%	31	951	6204	8909	5312	4876	92%
7	474	11352	2508	13603	3737	27%	32	5559	12193	7670	22327	7226	32%
8	605	12713	4534	18928	5125	27%	33	727	10567	6114	18093	10551	58%
9	2384	24570	11139	31508	14016	44%	34	1212	11644	9644	19881	13066	66%
10	1289	4928	2374	3472	6468	186%	35	2058	6357	3012	19346	1172	6%
11	7052	15366	8569	24936	19022	76%	36	2054	10251	7599	20474	10912	53%
12	6740	13239	9817	18211	12714	70%	37	1013	10330	5380	22334	21742	97%
13	1176	14336	2149	15948	18382	115%	38	2270	19402	2140	15842	2152	14%
14	1589	16914	3494	16479	18931	115%	39	1838	16111	5419	21250	29622	139%
15	1210	18383	6702	21417	15515	72%	40	9958	3685	20484	21490	18615	87%
16	1133	13271	4769	15152	10733	71%	41	1463	13475	9674	17427	1498	9%
17	3256	20627	9920	23881	17557	74%	42	1202	8918	4980	12304	7388	60%
18	1122	10517	3794	13176	8422	64%	43	377	8184	8918	9219	2165	23%
19	1581	15099	3940	22303	4154	19%	44	317	10384	3057	22769	12995	57%
20	1334	12937	4517	18165	2486	14%	45	394	11062	10124	14920	3177	21%
21	1330	8782	2274	7262	4209	58%	46	447	9034	4825	20248	18322	90%
22	1500	18812	8629	24008	23784	99%	47	325	8461	3383	15571	1375	9%
23	1770	19060	18752	17366	3452	20%	48	655	9243	3401	8943	985	11%
24	6599	14136	18591	21275	8542	40%	49	1317	11692	4034	19313	14482	75%
25	1690	21510	11611	20128	16530	82%	50	665	8152	13646	16923	1616	10%

VC	0	1	2	3	4	3/4
51	297	5213	2715	6019	782	13%
52	564	5961	3175	9214	6686	73%
53	702	14208	4316	19093	1398	7%
54	1497	22864	6969	28536	3413	12%
55	937	13137	17763	12162	1868	15%
56	458	14851	1763	17134	2547	15%
57	2377	13601	5097	17916	16162	90%
58	2059	14497	3500	23208	18561	80%
59	7004	14878	5034	24856	28398	114%
60	1613	9806	4118	12407	16202	131%
61	391	14538	14156	15486	6844	44%
62	1110	16016	3259	21714	16514	76%
63	1269	13439	13799	18171	16141	89%
64	1546	16109	8878	27212	8483	31%
65	779	11121	6072	12376	2597	21%
66	2462	15261	20960	18045	13852	77%
67	791	18013	10511	16959	11612	68%
68	853	11123	6930	10531	6715	64%
69	1262	12802	24616	25548	2638	10%
70	975	19081	33983	34887	2595	7%
71	791	5962	1463	8320	2333	28%
72	859	10546	4226	11177	6918	62%
73	1046	11356	7073	15689	948	6%
74	2495	6666	4020	8676	5600	65%
75	430	11808	2511	15468	1117	7%
76	149	2701	3760	5211	470	9%
77	260	7220	2314	13641	1368	10%
78	943	4895	4308	4454	910	20%
79	454	2290	1170	4124	1780	43%
80	1591	7849	2506	10418	3364	32%
81	2285	8058	5464	10183	6433	63%
82	254	4874	2091	6100	2021	33%
83	797	6700	2974	6670	1006	15%
84	119	2315	1999	4656	911	20%
85	2244	9231	6607	13036	1494	11%
86	372	4261	1584	8334	3448	41%
87	658	4585	8502	8850	2015	23%
88	1917	14968	11962	15347	10730	70%
89	1067	7801	8432	11417	7051	62%
90	999	10453	2849	11638	7171	62%
91	960	3892	1008	5545	5780	104%
92	961	8474	2512	8192	3170	39%
93	353	6816	3298	11276	1683	15%
94	6590	7932	9150	6475	7372	114%
95	1064	10110	3782	13641	8989	66%
96	992	19329	20307	13542	7881	58%
97	693	16029	7642	15822	5847	37%
98	725	16760	2785	19940	1610	8%
99	213	3215	6095	6846	929	14%
100	657	4866	4107	7110	6758	95%
101	150	9736	4656	11094	1562	14%
102	166	7080	1844	9555	602	6%

VC	0	1	2	3	4	3/4
103	434	11010	2940	9458	6229	66%
104	1665	14528	9360	14096	13814	98%
105	754	11765	2777	9854	1459	15%
106	2720	13215	5731	13686	14415	105%
107	330	8822	3586	7010	1330	19%
108	7949	11379	5182	12831	6185	48%
109	745	5950	7497	3427	1854	54%
110	1509	16655	5728	15080	13262	88%
111	2249	7375	2845	8007	5277	66%
112	2186	7688	5643	10582	3681	35%
113	1989	4650	1386	8130	2725	34%
114	820	1616	1398	2080	1815	87%
201	647	10153	837	13319	3849	29%
202	367	3347	588	14529	2610	18%
203	260	9945	152	16934	3603	21%
204	168	5861	213	13163	400	3%
205	189	5891	207	12646	72	1%
206	2120	6331	1447	14557	19229	132%
207	364	4997	187	7905	95	1%
208	343	5438	191	12061	1922	16%
209	1233	8836	1945	10865	4890	45%
210	859	4270	1401	13576	31	0%
211	1133	4723	152	7308	1974	27%
212	879	9002	2282	15256	9505	62%
213	1157	4095	303	3008	542	18%
214	914	4914	264	5218	1320	25%
215	905	4892	240	6253	1872	30%
216	1153	7831	2215	10381	4286	41%
217	1164	5188	392	6661	2387	36%
218	874	4863	77	9064	1764	19%
219	994	3484	2500	6543	1406	21%
220	1233	5648	435	11076	548	5%
221	789	3176	905	8541	335	4%
222	622	4732	356	12420	122	1%
223	919	5087	2697	9538	137	1%
224	568	2463	171	5478	0	0%
225	1027	5979	183	10154	750	7%
226	424	5289	373	7665	314	4%
227	2081	11780	295	13031	138	1%
228	941	6941	356	10205	62	1%
229	960	3949	568	11346	389	3%
230	424	5287	126	6968	122	2%
231	739	2095	503	5452	57	1%
232	147	2799	447	8597	3956	46%
233	440	8466	5607	13179	637	5%
234	170	4901	181	11111	1320	12%
235	380	9486	484	13267	82	1%
236	705	9438	4155	22855	10540	46%
237	316	5694	2629	7793	445	6%
238	743	10242	8694	17412	7842	45%
239	639	11409	11507	18882	4118	22%
240	209	5838	5167	12138	3430	28%

## Looking at plant distributions in a different way

Quentin Groom (quentin@bsbi.org.uk)

The first law of geography, according to Waldo Tobler (1970), is that 'Everything is related to everything else, but near things are more related than distant things.' Put another way, geographic features are not randomly distributed but patchy. The same thing might be said of floras. For example, if you know the taxa living in a tetrad, it is likely that neighbouring tetrads will contain similar taxa and increasingly distant tetrads will have increasingly different floras. This patchiness of distribution is what we plot on our distribution maps; however, it is frequently difficult to see the underlying pattern in a map of dots.

Over the past 15 years landscape ecologists have developed many statistical tools to study pattern in the landscape and recently I have begun to apply these methods to the distributions of plants. One such technique is the semi-variogram. To calculate such a graph you have to calculate the distance (also known as the lag) between every pair of points on a map and calculate the variance of the factor in question at each distance. In our case, the factor in question is the presence or absence of a taxon. If distributions are patchy the semi-variance at short lags will be small (i.e. if you find a plant in one tetrad it is likely to be in a neighbouring one). At more distant lags the semi-variance rises until it becomes effectively independent of the lag.

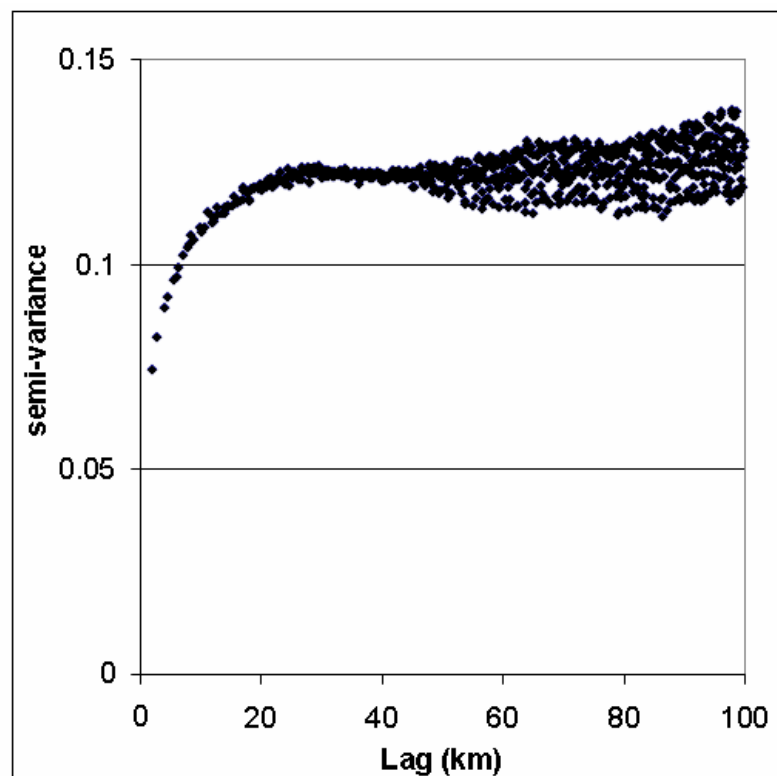


Figure 1. A variogram of the distribution of *Cruciata laevipes* in southern England.

Variograms have a vocabulary all to themselves. The point at which the graph crosses the Y axis is known as the nugget and is related to the natural variability in distribution and the sampling error. The plateau that is reached at long lags is known as the sill. The lag at which the semi-variance reaches the sill is known as the range. Not to be confused with what phytogeographers normally refer to as the range of a species. In this context the range is a value that can be thought of loosely as a patch size.

To calculate the variograms shown here I took the tetrad data accumulated in the BSBI maps scheme database for dates from 1987 onwards for vice counties in lowland England, excluding Cornwall and

Devon. This region was chosen because it is comparatively well surveyed and it has a fairly uniform landscape pattern.

A characteristic semi-variogram produced is that of *Cruciata laevipes* (Fig 1). This pattern is typical of a plant with a patchy distribution with a range of around 20 km. This patchiness is a response of the plant's distribution to climate, soil and other habitat preferences that are also patchily distributed across the landscape. Also, the history of evolution, colonization and extinction can influence the patchiness. In contrast, some taxa are planted by mankind and their distribution has little to do with their habitat preferences etc. Examples of this pattern can be seen in species such as *Symphytum grandiflorum*, *Tropaeolum majus* and *Ribes sanguineum* (Fig. 2, left). Little or no patchiness can be seen in their distribution. Their variograms are practically flat. Another common pattern is that seen in the distribution of bog plants (e.g. *Eriophorum vaginatum* and *Vaccinium oxycoccos*). These have patchy distributions at short lags (<10 km) but have large 'holes' in their distributions, which can be seen from the large trough in their variogram at longer lags (Fig. 2, right).

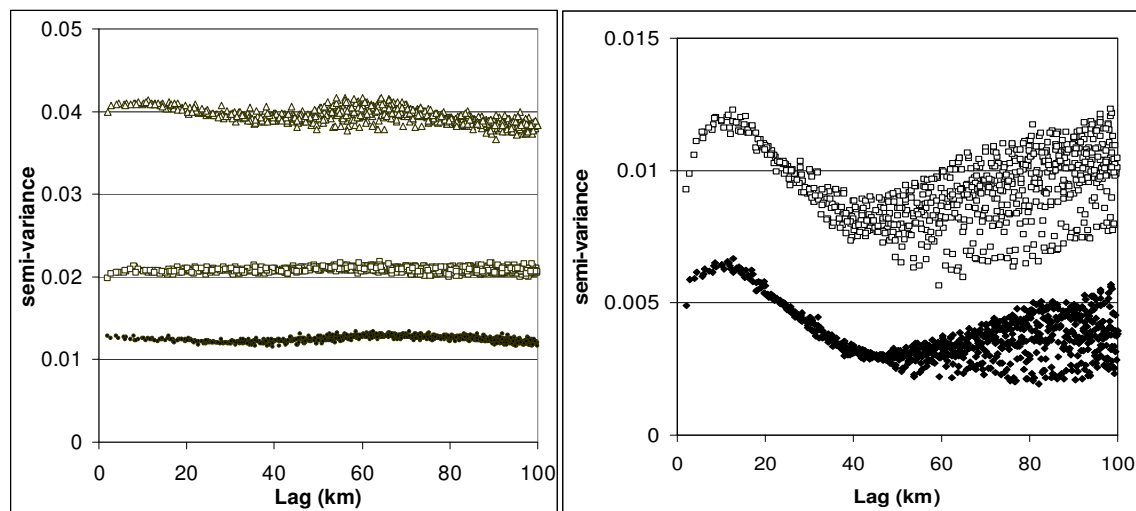


Figure 2. Left: variograms of the distributions of *Ribes sanguineum* (top), *Symphytum grandiflorum* (middle) and *Tropaeolum majus* (bottom) in southern England. Right: *Eriophorum vaginatum* (top) and *Vaccinium oxycoccos* (bottom) in southern England

I am convinced that techniques such as these have a lot to show us about the distributions of plants and how those distributions are changing. I also think that we can design our surveys better if we consider Tobler's first law. For example, surveying using a regular pattern of tetrads such as that used for the local change survey could not have been worse for detecting change in the patch size. The shortest distance between tetrads for the local change survey was 8 km, which is larger than the range of some species. On the positive side, the use of the tetrad as a sampling unit rather than a larger square is suitable for the detection of patchiness in the landscape. Also, this technique shows that you don't need to survey every tetrad to understand some aspects of the distribution of plants; but random selection of tetrads and thorough surveying is important.

## Reference

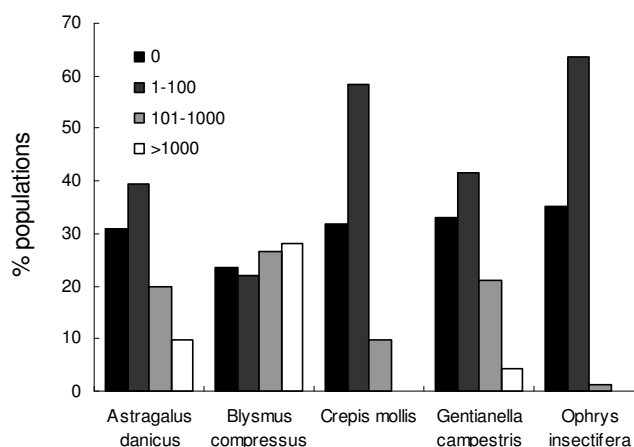
Tobler, W.R. 1970. A computer movie simulating urban growth in the Detroit region. *Economic Geography*, 46(2): 234-240.

# Update on the Threatened Plants Project (TPP)

Kevin Walker (kevinwalker@bsbi.org.uk)

The pilot in 2008 was very successful and to date (16<sup>th</sup> March) we have received over 700 completed survey forms (see table below) plus 1000s of new or amended records for the 10 species covered. Both the number of samples and geographical coverage has been excellent and the initial results suggest some very interesting differences in terms of refind rates (see table below) and population sizes (see figure below). We intend to complete the analyses this summer and report the results in 'status reports' in the autumn.

	Total	Extant	Null	% null
<i>Astragalus danicus</i>	88	63	25	28
<i>Blysmus compressus</i>	66	51	15	23
<i>Crepis mollis</i>	41	28	13	32
<i>Gentianella campestris</i>	142	95	47	33
<i>Campanula patula</i>	18	7	11	61
<i>Monotropa hypopitys</i>	81	44	37	46
<i>Ophrys insectifera</i>	77	50	27	35
<i>Pyrola media</i>	59	43	16	27
<i>Scleranthus annuus</i>	97	41	56	58
<i>Stellaria palustris</i>	49	25	24	49
<b>Total</b>	<b>718</b>	<b>447</b>	<b>271</b>	<b>38</b>



Population sizes of TPP species

This year we are concentrating on the following 10 species: *Carex ericetorum*, *Cephalanthera longifolia*, *Coeloglossum viride*, *Dianthus deltoides*, *Fallopia dumetorum*, *Gnaphalium sylvaticum*, *Groenlandia densa*, *Melampyrum cristatum*, *Oenanthe fistulosa*, *Vicia orobus*. Once again we would like you to (a) survey a randomly selected sample of populations in your v.c. and (b) check the records that we hold.

By now you should have received details of this year's survey in the post. You have probably noticed that we have altered the method in order to reduce the amount of work you need to do. First, the majority of sites to survey have a 100m grid reference which should make re-finding populations much easier. Second, we have simplified data checking by just listing the most recent record for a given hectad. Therefore all you need to do is send us more recent records if you have them.

The full list of records we hold for your v.c. will be available for download from the TPP webpage: <http://www.bsbi.org.uk/html/tpp.html>. This will allow you to check to see if we hold more detailed records for hectads where the most recent record is just at 10 km resolution. Please feel free to check these in the same way as last year but note that in 2009 this is entirely optional!

As in 2008 the priority is to survey the sample sites this summer. If these are impractical to survey then please feel free to substitute them with others of your own choosing. Also please continue to record additional sites not on the list and send in details of any null records as these are vital in helping to explain why some of these species have declined. Please note that in 2009 no sample populations have been selected for v.cc. 74, 76, 84, 85, 107, 113, H4, H5, H10, H15, H16, H18, H20, H22, H26, H29, H31, H32, H34, H35, H37). However, please feel free to survey any sites you know in these counties as the greater coverage we get the better.

In 2008 the response from county recorders was excellent, especially as it was the first year of a new type of project. I hope that all of you, including those who did not manage to survey sites last year, will find time to take part in this interesting project and in the meantime if I can assist in anyway please don't hesitate to get in touch. I would especially like to hear, as soon as possible, from those who do not wish to take part, so that we can attempt to make other arrangements.

# Herbaria at Home

Alex Lockton (coordinator@bsbi.org.uk) and Tom Humphrey (tom@herbariumathome.org)

The Herbaria at Home web site has been running for three years now and has documented some 36,000 specimens. It is proving to be a cost-effective and efficient way to catalogue herbaria, and it produces better information than can be obtained in any other way.

The unique feature of Herbaria @ Home is the way users are invited to create and edit the database.

For a county recorder, there will typically be extra information you can provide that no-one else will know. A specimen might have been assigned wrongly to your county, and you may know that because of your detailed knowledge of the v.c. boundary. The digitizer might have guessed that the 'Whitchurch' on the sheet was your Whitchurch – but you may know, given *this* particular collector and *that* particular plant, that this is unlikely. Another thing you might want to check is the identification of the plant. Some 80% or 90% of specimens can be reliably determined from the photos. Many such confirmations are not controversial – they're just mislabelled specimens. If you are unsure, the message board is a great way to invite other people to help with things such as recognition of a collector's handwriting.

University of Birmingham Herbarium  
BIRM 005204

HERBARIUM OF WM. WEST,  
BRADFORD, ENGLAND.

No. *95* Edit. Lond. Cat. *597* Vice Co. *64*

Species *Saxifraga aizoides* Linn.

Locality *1/2 miles from Ingleton towards Ribbleshead, W. Yorks*

Altitude \_\_\_\_\_ Geological Formation *Silurian*

Remarks *Plentiful on some wet ground S. of & close to Ingleton*

Date *6/iv/96* Collectors *W. West & W. West*

specimen

taxon

collected by  (☐ illegible)

collection date  (to )

herbarium  (☐ ex herb ☐ illegible)

place name  county

site  (☐ illegible) (☐ cultivated)

precise site or habitat information

notes

units/flowers

herbariaunited.org Forum Index -> Herbarium sheet discussion					Mark all topics read
Topics	Replies	Author	Views	Last Post	
<b>Sticky: About feedback requests</b>	0	Tom Humphrey	429	Mon Dec 31, 2007 5:15 pm Tom Humphrey →	
<b>Feedback request: Orobanche minor (200705161628_2799)</b>	2	psilostemon	29	Tue Mar 24, 2009 7:14 pm irene_a_gates →	
<b>Feedback request: Crataegus laevigata (6875)</b>	0	keith barnett	9	Tue Mar 24, 2009 11:35 am keith barnett →	
<b>Feedback request: Cochlearia danica (200705101403_2636)</b>	1	psilostemon	16	Tue Mar 24, 2009 10:43 am Chris Liffen →	
<b>Feedback request: Sesleria caerulea (200705181152_6929)</b>	0	psilostemon	12	Tue Mar 24, 2009 2:11 am psilostemon →	
<b>Feedback request: Cochlearia danica (200705101403_2636)</b>	0	psilostemon	8	Tue Mar 24, 2009 12:51 am psilostemon →	

A county recorder can often fill in the precise details and then add the record to their own database. Quentin does not take records straight from Herbaria at Home and feed them into the Maps Scheme unless the plant is already recorded from that hectad and this is simply adding another date class record. So if you want those first county records, you have to log on and search for the interesting new finds for yourself.

# Is *Carex maritima* extinct in England?

Alex Lockton, David Pearman & Chris Metherell

Curved Sedge, *Carex maritima* Gunn., is an arctic-alpine species that might well be expected to retreat northwards as a result of climate change. It is widespread and abundant around the coasts of Canada, Alaska, Greenland and northern Eurasia, reaching its southern limits in Britain. It also occurs on high mountains, both in northern regions and further south in the Alps and possibly the Pyrenees and in the Pamirs and the Tien Shan mountains. In the southern hemisphere, it occurs in the Andes, down through Chile and Argentina to Tierra del Fuego (Hultén & Fries 1983).

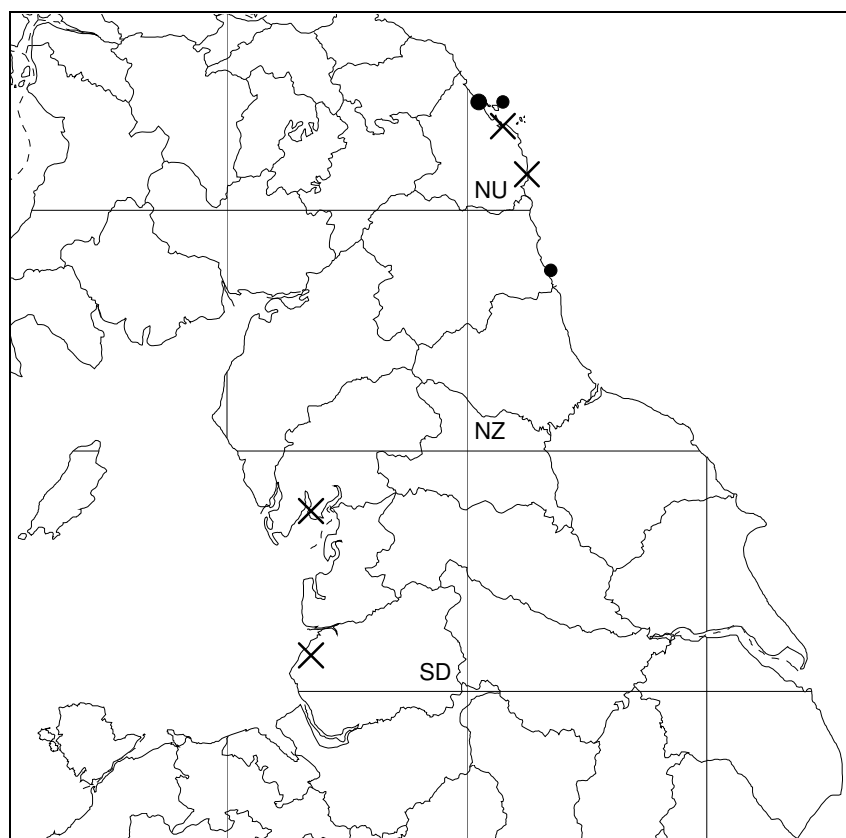


Fig 1. Distribution of *Carex maritima* in England, with dots size-scaled for the date of the most recent record (see text for actual dates). X = unconfirmed or erroneous records.

The distribution map of *C. maritima* in Britain (Fig. 1) shows a few populations in England but no recent records. It seems to be thriving in northern and western Scotland, but it has become rare towards the south of its range. Here is a listing of all the sites, confirmed and unconfirmed, where it has been recorded in England.

**SD31.** Southport (v.c. 59). A dot for this square is given in the New Atlas (Preston, Pearman & Dines 2002), which is derived from a herbarium specimen seen by R.W. David at the University of Birmingham herbarium (**BIRM**) in the 1980s. It was apparently anonymous, but dated 1877, and labelled, simply, 'Southport.' The sheet is no longer at **BIRM** and, in the absence of more conclusive evidence, it is not possible to confirm the record.

**SD37.** Humphrey Head. A single specimen was collected by E.J. Harling on the west side of Humphrey Head in 1971, at SD3874. Although this record is given as confirmed in the Flora of Cumbria (Halliday 1997), the specimen has subsequently been identified as a dwarf form of *C. otrubae*, False Fox-sedge (det. A.O. Chater, **BM**, 2000) and the record was rejected in Jermy *et al.* 2007.

**NZ37.** This site was apparently discovered in 1938 by K.B. Blackburn, in ‘dunes between Blyth and Seaton Sluice’ (Swan 1993). The site may have been Hartley Links, a dune system at NZ3277. It was subsequently seen at the same place by Blackburn again in 1945, by J.K. Morton in 1945, and by J.W.H. Harrison in c. 1950, but apparently not since.

**NU04 & NU14.** Holy Island. Known here since 1867 (Baker & Tate 1868) but last seen in 1984 (by A.J. Richards). Swan (1993) describes it in ‘both 5x5km squares’ on the island, specifically at NU098431 (1983) and NU136435 (1961). Thorough searches in 2007 and 2008 have failed to yield any plants, although it is not impossible that it is still present, as it is a very extensive dune system.

**NU13 & NU21.** Swan (op. cit.) gives unconfirmed records for Ross Links (ca. NU1437) in 1955 and Howick Links (ca. NU2517) in 1980. The former site in particular might be worth another visit.

In 2009 we intend to organise another search of the dunes at Holy Island. If it is not found then, we should conclude that it has become extinct in England – at least temporarily. It is quite possible that populations could recur from buried seed or via long-distance dispersal. But certainly it is a plant that appears to be dying out in this country.

As this is a plant in retreat at the southern edge of its range, is it possible that it is a casualty of climate change? If so, how would a climate change-driven extinction be manifest? Presumably not by any obvious and direct temperature effect – *C. maritima* can survive and fruit in warmer climates. Instead, it is subtle effects that would cause its gradual extinction – increased competition with other plants; predation by new species of invertebrates; or changes in land use. No-one has yet attempted to study such processes in any detail, so this could be a perfect species for such research.

Is there any point in trying to combat the decline by reintroducing *C. maritima* to some of its historical sites? In all probability such introductions might be successful in the short term, as it is such a ruderal species that it will grow well on disturbed soil and loose sand anywhere. However, this would be gardening it, not reinstating natural populations. There have already been several attempts to translocate it to new sites in Scotland, but there are no published reports yet.

Scientifically, one of the most interesting things about *C. maritima* is seeing how it responds to climate change. Thus, any introduction has the disadvantage of undermining scientific study to balance against any wildlife benefit. As *C. maritima* is not rare and is seemingly increasing in the north of its range, we would conclude that there is currently no good reason to introduce it.

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# *Luronium natans* update

Alex Lockton



Fig. 1. All confirmed records since 1986, with dark dots for post-2000 records.

Every now and then we are asked to provide a biodiversity assessment of a species. *Luronium natans*, Floating Water-plantain, is a difficult one to do because of the number of false records. Errors are frequently made both over- and under-recording *Luronium* for *Baldellia ranunculoides* and *Alisma plantago-aquatica*. Sometimes it occurs as long, floating strap-shaped leaves like those of *Sparganium emersum*, easily a metre in length; and occasionally it is found as small rosettes in grassland, looking as much like *Plantago major* as anything.

In the UK it is perhaps our most protected species. Its presence alone is enough to warrant Special Area for Conservation (SAC) status, and it is a criminal offence to collect or disturb plants without a licence. However, despite being arguably the most important plant in Britain, we do not know all that much about it. Below is a list of its current locations, examining all records since 1986 and attempting to assess its status in each site.

The sites are listed in numerical order of their 10km squares to make it easier to work out from the map which is which; unfortunately that means going back and forth between Wales and England; and it is a long list, so I have divided up the sites by country. This is only a provisional listing, so please send additional post-2000 records if you have them, or please resurvey the sites. If there is reason to believe that it has gone from a site, it says so in the text – the crosses and ticks simply indicate whether there is a post-2000 record for that hectad or not.

## List of all sites since 1986

### Ireland

✓ L83 & L93. The only site in Ireland is Invermore Lough, West Galway (H16). It seems to be thriving there still (P.R. Green, 2007).

### Scotland

✕ NN00. Fish Pond, Inverary, Main Argyll (v.c. 98). Plentiful in 1996 (N.J. Willby & J.J. Day).

✕ NN04. Loch Baile Mhic Chailein, Argyll (v.c. 98). First recorded by Kenneth, Slack & Stirling in 1963, and subsequently by B.H. Thompson in 1997: 'still present.'

✕ NN11. Ardkinglas House pool, Argyll (v.c. 98). 'Extremely abundant, often virtually to the exclusion of other species' in 1996 (N.J. Willby & J.J. Day).

✕ NN14. Loch Driumachoish & Lochan Urr, Argyll (v.c. 98). 'More or less abundant in four lochans at the head of Glen Etive' in 1995 (B.H. Thompson).

### England

✓ NY21 & NY22. Derwent Water, Cumberland (v.c. 70). Present in many places around the lake (A.M. Darwell, 2000).

✓ NY22 & NY23. Bassenthwaite Lake, Cumberland (v.c. 70). Present in several places around the lake (A.M. Darwell, 2000).

✓ NY31. Silver Crag, Cumberland (v.c. 70). In a small tarn near Silver Crag – 57 flowers in period of dry weather in 2000 (L. Smith).

✓ SD80 & SD81. Rochdale Canal, South Lancashire (v.c. 59). Frequent in several places (L. Rigby, 2008). A new site at Rainshaw Mill discovered in 2006.

✕ SD90. Ashton Canal at Daisy Nook, S. Lancs. (v.c. 59). Not seen since 1992 (A.R. Franks).

✓ SD91. Rochdale Canal, S. Lancs. (v.c. 59). Present in several places (C. John, 2008).

✕ SD92. Rochdale Canal at Hebden Bridge (S.W. Yorkshire (v.c. 63). Last seen in 1989 (C.D. Preston & N.F. Stewart).

✓ SE01. Huddersfield Canal at Slaithwaite, S.W. Yorks. (v.c. 63). In several places in 2001 (A. Atherton & K. Hatton).

✓ SE11. Huddersfield Broad Canal, S.W. Yorks. (v.c. 63). Locally abundant in several places in 2000 (J. Welsh).

### Wales

✕ SH44. Llyn Glasfryn, Caernarvonshire (v.c. 49). Last seen in 1987 (Anon.) or possibly 1983 (S.E. Garnett).

✓ SH54. Afon Glaslyn at Hafodyllynisaf, Caerns. (v.c. 49). Collected in 2003 (K. Hatton & M. O'Connor).

✓ SH55. Afon Gwyrfa at Betws Garmon, Llyn Cwellyn, Llyn Dwythwch, Llyn Nantlle Uchaf and Llyn y Dywarchen, all in Caerns. (v.c. 49). There are post-2000 records for all sites except Llyn Dwythwch, where it was last recorded in 1998 (N.F. Stewart).

✓ SH56. Llyn Padarn and Afon Seiont, Caerns. (v.c. 49). Known here for many years; still present in 2002 (R.A. Jones).

✓ SH63. Llyn Cwm Bychan, Merionethshire (v.c. 48). Still there in 2006 (R.A. Jones).

✱ SH64. Llyn Cwmorthin, Merioneth. (v.c. 48). Not recorded since 1997 (R.A. Jones).

✱ SH65. Llyn Cwmffynnon, Caerns. (v.c. 49). Not recorded since 1992 (Anon.) and possibly not since 1969 (P.M. Wade).

✓ SH72. Llyn Cynwch, Merioneth. (v.c. 48). Last recorded in 2003 (M. O'Connor & A. Atherton).

✓ SH72 & SH73. Afon Eden at Pont Llyn-y-Cefn and at Pont y Grible, Merioneth. (v.c. 48). In several places along the river in 2003 (M. O'Connor & A. Atherton) and 2008 (R.A. Jones).

✓ SH83. Llyn Tegid, Merioneth. (v.c. 48). Present in 2003 (M. O'Connor & A. Atherton).

✱ SH90. Llyn Gwyddior, Montgomeryshire (v.c. 47). Not recorded since 1997 (E. Lomas & T. Teearu).

✱ SH91. Llyn Coch-hwyad, Monts. (v.c. 47). Not recorded since 1997 (Anon.) and possibly not since 1989 (A.J. Morton).

✓ SJ10, SJ20 & SJ21. Montgomery Canal, Monts. (v.c. 47). Still abundant in many places (S.J. Whild & A.J. Lockton, 2004).

✱ SJ14. Llangollen Canal at Llangollen, Denbighshire (v.c. 50). Last seen here by N.J. Willby in 1993. Almost certainly gone from here now.

✓ SJ22. Montgomery Canal at Wern Aqueduct, Monts. (v.c. 47). Still present in 2001 (C. Newbold).

✱ SJ23. Llangollen Canal at Chirk, Denbighs. (v.c. 50). Last seen in 1987 (B. Primrose). Almost certainly gone from here now.

## England

✓ SJ31. Edgerley, Shropshire (v.c. 40). Found in a hollow in a field of pasture near the Severn by A.K. Thorne in 2003; presumed gone by 2008, as the field was a dense stand of *Glyceria maxima* (D.H. Wrench).

✓ SJ50. Bomere Pool, Salop (v.c. 40). Still present, but very rare in 2003 (S.J. Whild & A.J. Lockton).

✓ SJ53. Brown Moss, Salop (v.c. 40). Two patches appeared in 2006 (M. O'Connor) after scrub clearance and dredging, following many years of absence, but it did not return in 2007 or 2008.

✱ SJ94. Consall Wood, Staffordshire (v.c. 39). Found by I.J. Hopkins in 1987 in a pool near the Caldon Canal; last seen there in 1988.

✱ SJ96. Bosley Reservoir, Cheshire (v.c. 58). Recorded by G.M. Kay in 1994.

✓ SJ99. Ashton-under-Lyne Canal and Peak Forest Canal, S. Lancs. (v.c. 59). Still present in both in 2008 (C. John).

✓ SK00. Cannock Extension Canal and Daw End Branch Canal, Staffs. (v.c. 39). Rare in 2007 (C. John) and 2005 (M.F. Godfrey) respectively.

## Wales

✓ SM72. Dowrog Common and Ramsey Island, Pembrokeshire (v.c. 45). Still present in both places (S.B. Evans, 2006 & 2007).

✓ SN54 & SN65. Afon Teifi, Cardiganshire (v.c. 46). Occasional in the river in 2005 (N.T.H. Holmes) and 2007 (J. Turner).

✓ SN66. Cors Caron, Llyn Eiddwen, Llyn Fanod, and Afon Teifi, Cards. (v.c. 46). There are recent records for all these sites: Cors Caron (R.A. Jones, 2008), Llyn Eiddwen & Llyn Fanod (A.O. Chater, 2008) and Afon Teifi at Bryn Deri and Pont Einon (J. Turner, 2007).

✓ SN76. Llyn Egnant, Llyn Gynon, Llyn Hir, Llyn Teifi and Llyn y Gorlan, all in Cards. (v.c. 46). Have recent records by R.A. Jones & A.O. Chater except Llyn y Gorlan, which appears not to have been recorded since 1994 (R.A. Jones).

✱ SN86. Llyn Cerrigllwydion Isaf & Llyn Cerrigllwydion Uchaf, Radnorshire (v.c. 43) and Llyn Gynon, Cards. (v.c. 46). Last recorded at LC Isaf in 1995 (R.A. Jones) and at LC Uchaf in 1997 (T. Teearu & E. Lomas) and at the latter in 1998 (A.O. Chater & J.P. Woodman). Part of Llyn Gynon also extends into this square, but there are no records of it here since 1998 (A.O. Chater & J.P. Woodman).

✱ SN87. A small part of Llyn Cerrigllwydion Isaf extends into this square: there is no record of it there since 1996 (Anon.).

✱ SN89. Llyn Bugeilyn, Monts. (v.c. 47). Last recorded here in 1995 (Anon.) and possibly not since 1985 (A.J. Morton).

✓ SN96. Gwynllyn, Rads. (v.c. 43). A new site, discovered in 2007 by T. Hatton-Ellis.

✱ SN98. Llyn Ebyr, Monts. (v.c. 47). Last recorded here in 1990 (R.A. Jones).

✓ SO19. Montgomery Canal, Monts. (v.c. 47). Still present in seven sections of this part of the canal in 2001 (C. Newbold).

## England

✓ SU20. South Weirs, Hampshire (v.c. 11). A small population in a pond in the New Forest where it is suspected to be an introduction but has persisted for 20 years or more (M.W. Rand, 2005).

✓ TG41. Potter Heigham, East Norfolk (v.c. 27). Known here since the 1950s, and sometimes considered an introduction, but there is no evidence for that. Still present in four small populations in 2008 (J. Halls & H. Markwell).

## Analysis

There are 55 10km dots for *L. natans* since 1986, and just 36 since 2000. Some of these are probably not genuine losses – simply a shortage of records. Sites where it probably has been lost include the Ashton Canal at Daisy Nook, Llangollen Canal (two hectads), Caldon Canal, Edgerley and Brown Moss (lost from 6 hectads). However, there are only 44 dots in Date Class 3 (1986-1999), so there have been 11 gains since then.

*Luronium natans* is one of those mobile species that fares badly under the Change Index, but even in the New Atlas it is shown as increasing – despite all newly colonised sites being discounted as introductions. Clearly this is a species that is doing rather well. The graph below (Fig. 2) shows the number of extant sites in all decades since the 18<sup>th</sup> century. It seems there is a fairly constant increase throughout this period.

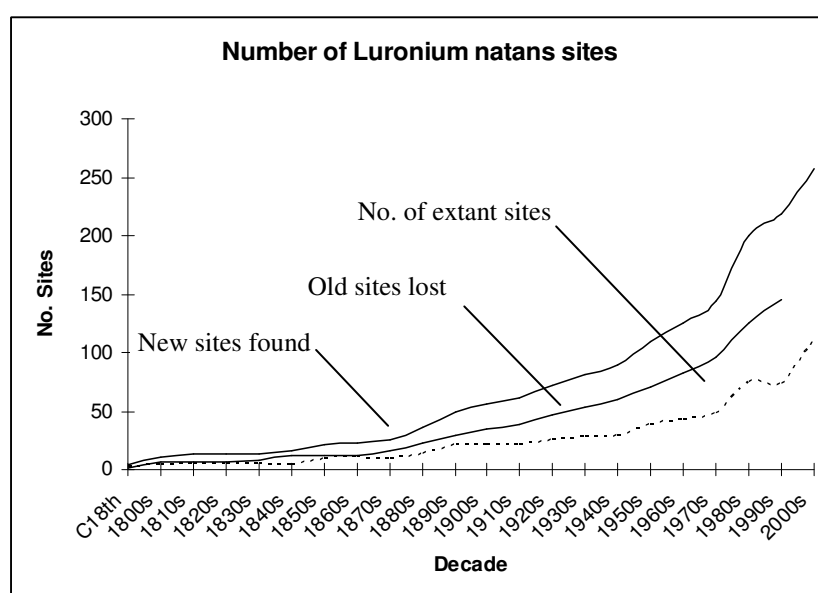


Fig 2: The number of recorded sites for *Luronium natans*, calculated by taking the first and the last known record for each site (1km square), and assuming it was present in the interim. The dotted line shows the number of sites presumed extant in any decade during that period.

A numerical analysis like this has to be treated with some caution. Better recording methods mean that we can now identify several ‘sites’ (1 km squares) along a canal when previously there might have been just one. Similarly, remote lakes are being explored more thoroughly, and new sites are being discovered where the species may have always been present.

The longer the time series we have, the more powerful the analysis will be. If it were essentially a static plant then eventually all possible sites would be explored and the graph would reach a plateau. If that does not happen, then the logical conclusion must be that it is indeed colonising new sites and can be classed as a mobile species. Similarly, if the plant were to go into decline, then eventually the graph would show that sites are being lost faster than they are being gained. This hasn’t happened yet. So, logically, the only thing we can say at the moment is that it appears from the data to be increasing. On the UK BAP web site ([www.ukbap.org.uk](http://www.ukbap.org.uk)) it is described as declining.

Another attribute of the status of a plant is its range, which is best analysed using maps. In order to get comparable maps, the same number of records were selected from the beginning (pre 1950) and the end (post-2000) of our data set (approximately 200 records in each case). There is no obvious reason why the data in either of these periods should be biased in its geographical coverage. For clarity, the maps are shown using 20 km x 20 km recording units (Fig. 3).

The most obvious difference between the two maps is the appearance, in the more recent one, of isolated dots in far-flung corners of the British Isles, from Hampshire and Norfolk to western Ireland. This is combined with a slight decrease in the core populations in Wales and the Shropshire-Cheshire plain, giving no net change in abundance. The most likely conclusion that can be drawn from this is that *Lurionium natans* is not climatically or geographically restricted in the British Isles: it could grow anywhere that suitable local conditions existed.

Over the next decade or so, it will be interesting to see if *Lurionium natans* manages to successfully expand its range and colonise new sites, or whether these far-flung populations (like the ones in Scotland) prove to be temporary. For its long-term future, a lot depends on conservation management, especially of canals.

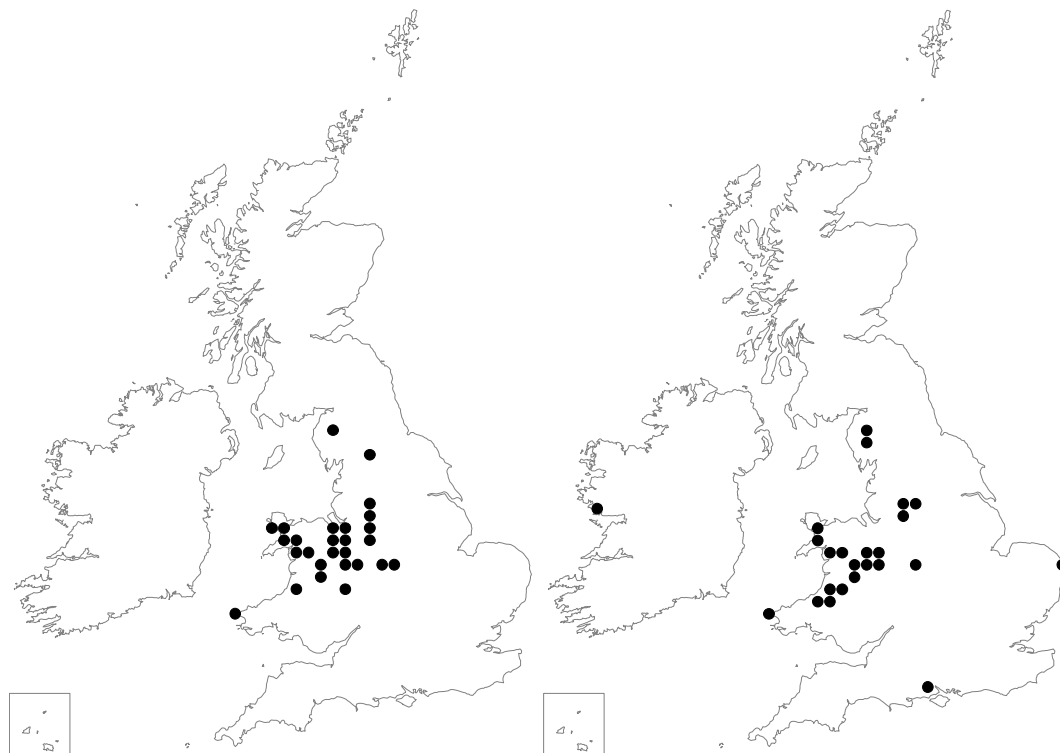


Fig 3. The distribution of *Lurionium natans* on a 20 km scale in the British Isles prior to 1950 (left) and since 2000 (right), showing some local losses but little overall change.

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## To record or not to record: some guidelines please

Helena Crouch (jim-helena@supanet.com)

At the recent Recorders' Conference, we were urged to record planted trees, native or not, because they make an important contribution to the landscape. This made me think about what I do, or should, record – a topic I seem to revisit frequently – and I realised that what I really need is some guidelines.

I do record some planted trees, but not consistently. I would record the planted Horse Chestnut on a village green and the row of small Plane trees down a street, but not the massive Walnut that dominates the skyline of our road, because it is planted in a garden. Yet that tree is a more prominent landscape feature. I have tended to record trees planted in public spaces but not in private gardens, which may be a mistake. Thus I would record the Beech tree in the churchyard, but not the Luccombe Oak of similar age in the vicarage garden next-door, yet if we are to make an effort to record planted trees which are features of the landscape, does it matter which side of the church wall they are planted? And if not, where does it stop? Any tree in a garden contributes something to the landscape – it is just a matter of scale and time – and many trees in semi-natural woodlands were originally planted anyway.

Should plants of importance to the landscape stop at trees? What about planted drifts of daffodils on road verges? Daffodils also made me think this Spring when I was asked to check a record sent to the local Records Centre for *Narcissus pseudonarcissus* in a wood near Bath, where they were previously not known. The record was correct regarding species and location, but nearby were a few clumps of cultivated daffodils, and various garden shrubs, so I judged that the *N. pseudonarcissus* were probably an artistically planted landscape feature. Exploring the wood, I eventually wandered into a more formal garden, with no boundary between the two, and was left wondering what, if anything, I should have recorded in that wood. How are we to judge where to draw the line when recording planted species?

Leading an urban walk this year, I was asked to justify to a young ecological consultant exactly why I was recording some of the weeds in a garden but not others. I explained that I record native species growing as weeds in a garden (e.g. *Senecio vulgaris* in the vegetable garden), but not native species being cultivated (e.g. *Tanacetum vulgare* in a herb garden) or cultivated species behaving as weeds within a garden where they were probably originally introduced (e.g. *Erigeron karvinskianum* growing on my drive, although if it grew out on the pavement, I would record it). When he appeared more confused than ever, I realised that I am making subjective judgements all the time about whether a species is likely to have been introduced to a garden, based on my knowledge as a gardener as well as a botanist and based on experience gained by following the advice and example of other recorders, all of which he lacked. (This system does, of course, break down in the gardens of botanists, where rare native species of little aesthetic value in the garden often appear as weeds.)

A particular quandary at the moment is whether to accept a record for *Euphorbia portlandica* growing between steps in a garden. It has been there for twenty years and was not deliberately introduced by the owner, who believes that seed must have come back from a seaside holiday on buckets and spades. We are all recording maritime species unintentionally introduced along roadsides, but should I record this one, which is in a garden? If I do, it is the first occurrence of this species in N. Somerset (v.c. 6).

It would be very useful to have some guidelines regarding records made in and outside gardens. Is there consistency across the country? And exactly where does one draw the line when recording planted trees?



## County Roundup

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Rosemary Parslow (v.c. 1a, aka 114, **Scilly**) tends to do her surveying whilst running training courses or wildlife holidays, as this helps to defray the cost of travel. Her New Naturalist book, 'The Isles of Scilly' was published in 2008. She wants to survey the uninhabited isles, but the logistics and cost make it very difficult.

Rosemary suggests that the BSBI sometimes seems to think up projects just to keep recorders active. [She credits us with too much intelligence and planning. We don't always think things through sufficiently well, but you can always ignore our requests – none is obligatory.]

From **Cornwall** (v.cc. 1 & 2), Colin French & Ian Bennallick give the following report on their activities: '2008 has proved to be a record year. Over 120,000 vascular plant records made in 2008 have been computerised in the Erica for Windows database bringing the database total to 1,147,000 flowering plant and fern records. A grant towards travel expenses was received from the County Council to assist with recording. This certainly boosted targeted recording, and despite a poor summer, weather-wise, over 300 1km squares that had not been surveyed since the publication of the last Flora of Cornwall in 1999 have now been visited. There now remain just under 600 1 km squares with zero post-1999 records to target in forthcoming seasons. Thankfully, the grant funding has been extended for another season and so the intensity of recording experienced in 2008 can be expected in 2009.

'Colin Wild, a BSBI member, living in Helston, deserves special mention, as he has been systematically surveying every 1 km square on the Lizard Peninsula (and some way beyond). He has single-handedly re-surveyed the Lizard Peninsula to such an exacting extent that it is probably true to say that his survey now exceeds that done by the Lizard Project, conducted by the University of Bristol, in the 1980s.

'The Erica for Windows database has been updated to Access 2007, thanks to a grant from BSBI. This has solved an imminent problem of the Access 2003 database file size limits being reached. The new limits have more than doubled the capacity of the overall database.'

Helena Crouch reports that new vice-county records for **Somerset** (v.c. 6) began with an alien fern in a basement in Bath (*Adiantum raddianum*) and look set to end with one (*Pteris nipponica*). *Agrostis curtisii* was a star native find, whilst *Lotus subbiflorus* is a puzzling addition to the Somerset flora; both support the tenet that even in a well-botanised county there is always something new and squeak-worthy to be discovered. *Glaucium flavum* has turned up at three separate locations, having been extinct in North Somerset since 1992. It was reported independently by two correspondents, and Helena comments on how fortunate she is to be recorder for a county with a strong recording community. Many people are actively recording in Somerset, with all records made at 1 km resolution or better, and she finds that coordinating and encouraging recording effort is as important as going out botanising herself.

A major success this year has been the launch of the Somerset Rare Plants Group website ([www.somersetrareplantsgroup.org.uk](http://www.somersetrareplantsgroup.org.uk)), as yet still under development. The list of species to be included in the Somerset Rare Plant Register can be viewed on the website. Next year, all fieldwork will again be focused on updating records for the Rare Plant Register (although peering into basements in Bath in search of alien ferns is likely to remain a dangerous preoccupation). The RPR itself will hopefully grow to a noteworthy number of species accounts during 2009.

In **Wiltshire** (v.cc. 7 & 8), Sharon Pilkington reports on the unexpected product of a survey for black-poplar *Populus nigra* subsp. *betulifolia* being the discovery of a monster pollard which was amazingly 'hidden' in a village despite being 30 m high and covered with scarlet catkins in April. Members of the Wiltshire Botanical Society have also been helping Natural England advisers in carrying out SSSI condition assessments across the county by recording the status of the qualifying plants there.

The group is also dipping a toe into the world of charophytes (so to speak) and were grateful to receive records from some of Nick Stewart's recent survey work in the Cotswold Water Park. Many different species of stonewort are found in the flooded marl pits and quarries there,

including some real rarities. It is a stronghold for species such as *Chara aspera* and *C. curta*, along with many other aquatic macrophytes. The army training estate on Salisbury Plain also supports a good population of stoneworts. *Chara vulgaris* var. *longibracteata* is a characteristic member of a tank-rut assemblage which also includes *Glyceria declinata*, *G. notata* and *Alisma plantago-aquatica*. The nationally rare Fairy Shrimp is also commonly found in the same ruts. Elsewhere on Salisbury Plain, the first county record was made of the nationally scarce *Tolypella glomerata* in a headwater pond, in the course of a survey counting great crested newts.

Alan Knapp & Paul Harmes say it has been a busy year in **Sussex** (v.cc. 13 & 14). Recording for the new flora continued, with just over 40,000 new records in 2008. Use of electronic submission of records by the majority of recorders means that they can keep their website up to date, so people can follow the progress and focus their recording in the areas most needing work. Data from Mapmate is synced with the BSBI roughly every month. They have started writing draft species accounts for the Flora and so far over 700 have been done. They find it rewarding to write up species accounts as they go along, rather than waiting until the end of the fieldwork. This brings to light gaps in recording and habitat information that can be filled rather than wishing it was there at the end. They have also agreed a provisional timetable up to publication which they are hoping will be at the end of 2012. The aim is to complete most of the recording during the next two years with 2011 as a 'tidying up' year for those things which have been missed. Over this period the focus will move away from general recording toward 'refinding' old records which have so far proved elusive.

Interesting finds this year included first records for v.c. 14 for *Orchis purpurea* & *Orobancha hederaceae*, a new v.c. 13 site for *Myosurus minimus* and the discovery of *Poa infirma* much further (c. 30 km) from the coast than in any previous Sussex site. It was an excellent year for *Wolffia arrhiza* in v.c. 14 with one ditch in the Pevensy levels NNR covered with it for a distance of over 500m. Unfortunately, despite several searches, they cannot refind it in any of its v.c. 13 sites.

There was a BSBI field meeting at Amberley Wild Brooks where they managed to find a good range of the characteristic species of area

including plenty of *Potamogeton acutifolius* and *Leersia oryzoides*. Unfortunately *Baldellia ranunculoides* could not be found in its only known v.c. 13 locality due to the poor condition of the ditches where it grows.

Eric Philp claimed that there was not much to report from **Kent** (v.cc. 15 & 16). His Flora is written and is due to be published shortly, but the Kent Field Club wanted some changes, which has delayed production. Eric complained that the Maps Scheme's ten-year date classes should not have started in 2000. He says: 'when I was born I was one year old after having lived in my first year. After ten years I was ten years old. Age and a decade begin in the first year, i.e. start in year 1 and finish in year 10, So why has the BSBI started in year 0 and finished in year 9?'

Well, Eric's confusion rather answers the question. Date class 4 started in year 0 (2000) so at the end of one year it is 1 year old, and 2001 starts. This is actually the way that normal counting works, as in the age of a botanist. Unfortunately, the calendar doesn't work that way, because there was no year 0: 1 BC was followed by 1 AD. This means that 2000 was part of the 20<sup>th</sup> century, not the 21<sup>st</sup>, and – although he got the example wrong – Eric is actually right that this is incorrect. Still, this argument was discussed very thoroughly at the end of the millennium and it was widely agreed that people would celebrate 2000 as the start of the third millennium, not 2001. So that is why we're stuck with DC4 running from 2000-2009. Fortunately, it is what most people prefer.

In **Surrey** (v.c. 17) Ann Sankey says that due to mobility problems she had to rely on Surrey Botanical Society members for recording this last year (2008). There were three main aspects where they rose to the challenge admirably:

1. TPP – all but two sites were visited.
2. The full field meetings programme was both enjoyable and productive in terms of records.
3. Databasing - a good core of people also supplied their own records. Ann notes that those who use MM and have access to the full list of records are frequently the ones who do the most recording.

The main recording emphasis in 2009 will be updating records for RPR species. In addition, a full field meetings programme has been arranged. The species lists resulting from these meetings,

together with members own recording, will add data for the Maps Scheme

Ann also makes the following appeal: ‘as I mentioned before, it would really help me and probably other VCRs if the spreadsheets sent from museums and herbaria@home and those used to send records for *Watsonia* could be in a format suitable for importing into MM – subject to some local adjustment if necessary.’

This is a nice idea, but in practice might not be all that useful. Most of the databases that we send to county recorders are in the style of the originator, which is often rather different to what Mapmate holds. For instance, lots of databases have different taxonomy to our current standard, and people may want to know about this. Herbaria at Home records subspecies and varieties that are currently out of fashion, but could well be of interest to certain people. If we translate them all into the Mapmate checklist, you would lose that information. Then there are assumptions to be made about the locations of sites and the names of recorders. This is a job best done by county recorders.

What we have achieved is the ability to get the majority of records to county recorders. It is not something to take it for granted: no other organisation, from Natural England to LRCs to the ornithological societies or other naturalist organisations has anything equal to this, in scale or comprehensiveness. Over 20,000 records a day pass through our central systems, and every single one is made available to the county recorders. It takes an enormous amount of effort and political willpower to prevent the fragmentation of botanical recording, given all the different organisations and interests involved.

Trevor James writes about **Hertfordshire** (v.c. 20), ‘A further six meetings held to continue work on re-recording scarce species. We also hosted part of the BSBI AGM weekend, unfortunately rain-sodden! The text for the new Herts. Flora was almost completed, and the database to generate the maps is nearly validated.

‘This year (2008) I hope to produce the long-awaited Flora. We have a further series of field meetings aimed at re-visiting some areas not examined for some time, and also to re-find some scarce plants. The Flora Group is also going to get a web-presence, under the auspices of the Herts. Natural History Society.’

Roy Maycock (**Buckinghamshire**, v.c. 24) says: ‘The proposed Rare Plant Recording Group materialised in September 2007. A list of people interested in the group contained about 60 names (where did they all come from?) and 20 turned up at the first meeting. In preparation, work with the LRC produced a list of some 100 taxa to be included in the Rare category – using tetrad information rather than sites. Some group members searched for species, with 34 being found (mostly in well-known localities) but 5 were not.

Maps of taxa produced by the LRC show that very large areas of the county have not been visited this century. Villages north of the River Great Ouse are all on Blisworth limestone and, with the glorious spring weather, we searched for *Erophila* spp.. *E. verna* was abundant but still no sightings of *glabrescens* or *majuscula* – two species on our rare plant list. However, have just received a record for *Minuartia hybrida*, which is probably its second extant site for the county.’

In **Cambridgeshire** (v.c. 29) Gigi Crompton has updated her remarkable web site (at [www.mnlg.com](http://www.mnlg.com)) with rare plant records, effectively providing a red data book for the county. The Flora Group (led by Alan Leslie and Nick Millar) has about six field meetings a year, and they have started writing up species accounts for their planned new Flora.

In **Huntingdonshire** (v.c. 31) Dave Broughton says he has had a productive and enjoyable first year as Recorder. Over the winter he took on the mammoth task of entering all the tetrad records collated during survey work for the county Flora into Mapmate. The field season has been spent getting to know the county and undertaking intensive recording to update hectad records and collect data for the RPR. As a result his database currently stands at around 80,000 records, of which around 10,000 have been made this year. This total does not include his notebook of several hundred other records that he has been unable to enter into Mapmate because they are not in the species list (non-native species, microspecies and infraspecifics).

When taking on the role of Recorder he was slightly surprised at the relatively low number of species listed in the Census Catalogue, given the geographic location of the county and the totals for neighbouring counties. The county is undoubtedly under-recorded and the species list has swollen considerably this year following

better recording of subspecies, planted trees and adventives. Several new native species have also been added as a result of intensive surveys, by himself and others, of National Nature Reserves e.g. *Osmunda regalis*, *Deschampsia flexuosa* and *Gymnocarpium dryopteris*.

He writes: 'The most significant plant discovery of the year is arguably *Oenanthe lachenalii*, rediscovered for the county at Woodwalton Fen NNR, after a 162 year absence. This find was integral in stimulating reassessment of the supposed *O. silaifolia* populations in adjacent v.c. 32. These populations also turned out to be *O. lachenalii* and there has clearly been a poor understanding of the differences between these two species locally over recent years. While there is no doubt that *O. silaifolia* is present in v.c. 31, I have seen one more pressed specimen that looks like it has been mis-identified. A much more critical eye will have to be cast over records of these two species from now on, particularly those records of *O. silaifolia* that do not conform to this species typical ecology and phenology. The two species may even prove to be sympatric at some sites.'

Dave says he would like to acknowledge all the assistance he has had this year including help with setting up the web page and input from the network of referees – the latter especially for their general swiftness and the detail of their responses.

Gill Gent and Rob Wilson (**Northamptonshire**, v.c. 32) are producing a rare plant register and have drawn up a draft list of axiophytes. There is also a plan to produce an updated Flora of the county, which is being initiated with a draft County Checklist.

Mark & Clare Kitchen (**Gloucestershire**, v.cc. 33 & 34) both took early retirement in 2007 and report that they are catching up on their backlog of botanical jobs. This included adding 63,000 records to Mapmate in a year, and they regularly sync data to both the BSBI and their LRC. In 2007, of course, there was a serious flood in the county, which led to the cancellation of field meetings; but an exciting find that year was a new site for Lizard Orchid, *Himantoglossum hircinum* - the success of which is apparently linked to levels of rainfall in the autumn.

Peter Garner is the current recorder for **Herefordshire** (v.c. 36) and he reports that his predecessor, Stephanie Thomson, spends a lot of

time at the Local Records Centre with Steve Roe and Heather Webster improving the historical data for the county. Clive Jermy has assumed responsibility for a Rare Plant Register and Peter has taken on the task of gathering data for DC4. It sounds like an effective arrangement, and it is good to see that the county has excellent statistics for both tetrad coverage and date classes.

Peter reported that a lot of the data available in Herefordshire is from site based surveys by conservation organisations such as the Wildlife Trust and Natural England. These are usually listed by site centroid, and the records cannot always be assigned reliably to a tetrad. They have a system for excluding such records from any analysis, but that would be a shame if this meant that a lot of potential dots disappeared from the maps. This sort of thing is only really important for the rarest of species. Almost all county recorders must have data that cannot be very reliably assigned to a grid square, but most of the time it is better to take your best guess than to exclude it altogether. It would be interesting to know what proportion of errors could be introduced by this means when compared to other sources of error, such as misidentification, failure to record, or transcription error.

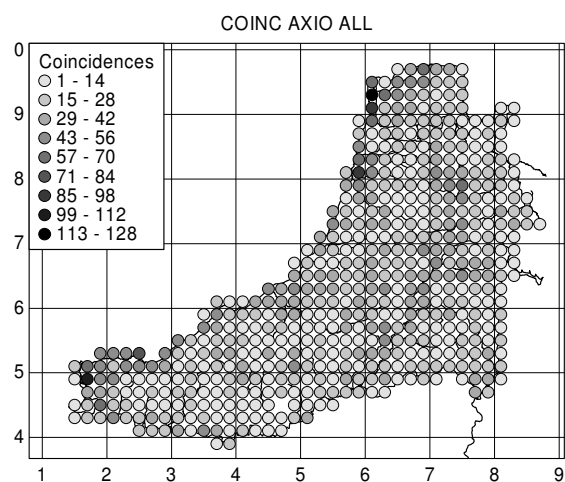
John Hawksford produces an annual Rare Plant Register for **Staffordshire** (v.c. 39) which is available on the BSBI web site. His predecessor as county recorder, Bryan Fowler, died in December 2008, and left in his will his slide collection to the BSBI. Ian Trueman kindly collected it on our behalf.

## Wales

Richard Pryce (**Carmarthenshire**, v.c. 44) writes, in his characteristically humble way:

'plodding on as usual – never get as much time to do all that I would like to! As usual, a very successful Glynhir meeting in 2007, together with many records made for the County Council, who want all the settlement limits in the Local Plan checked to avoid areas of ecological interest as far as possible.' George Hutchinson will be retiring from the National Museum of Wales in 2010, so Richard is working with him to get as many as possible of the Carmarthenshire specimens confirmed before then. George has apparently decided to drop out of botanical matters entirely after that.

In v.c. 46, **Cardiganshire**, Arthur Chater has been exploring the use of axiophytes for identifying areas of particular ecological importance. The results were quite unexpected. It turns out that there is a relatively even distribution of axiophytes across the county. There are two likely explanations for this – either his list of axiophytes includes too many widespread species, so the patterns are somewhat masked by the background noise; or perhaps Cardiganshire has a relatively even distribution of habitats. ‘Evenly’ is a relative term, of course, as one tetrad has no axiophytes at all, while others have as many as 128, so there are substantial differences between the best and the worst areas. However, it probably is true that this county has a lower degree of variation of land use, geology and habitat than many others; and it is relatively unspoiled by development.



Coincidence map of axiophytes in Cardiganshire.

In **Caernarvonshire** (v.c. 49), Wendy McCarthy held six monthly recording meetings from April to September 2008, recording in tetrads and updating records. She surveyed target species for Threatened Plants Project and published her Caernarvonshire Rare Plant Register. An interesting discovery was of a large population of *Lythrum hyssopifolia* - a first v.c. record far from its nearest site, in an area of grassland on a golf course where turves had apparently been stripped, leaving bare ground which became colonised by annuals.

**N**orthern England  
Paul Kirby reported on the state of play in **Lincolnshire** in August 2008: ‘at present there are over 746,000

records on my copy of Mapmate and an unknown quantity with Malcolm (S. Lincs.). The <show duplicates> query throws up some 30,000 records, but this does not include all the identical records that appear in various disguises, so there is a lot of duplication. Where the records are straightforward repetition I don’t see this as a significant problem, only clutter, but obviously it does matter when several variations of the same record have been entered on the db. The main cause of this type of duplication is the multiplicity of site names and map references used for the same site.

‘Remaining data to be computerised - it is nigh on impossible to give a figure but if pressed I would suggest about 20%. There are still numerous large boxes of material to be examined and I am sure more will come to light as Rene’s effects are sorted. In April 2008 the Environment Agency agreed to fund a further 280 hrs work for inputting their river corridor data. Though this varies greatly in quality, much of it is by reliable surveyors and worth entering.

‘Malcolm & I have also just started to receive data from The Lincolnshire Wildlife Trust. This includes records from their scarce species monitoring programme and recent records from both Trust Nature Reserves and from Trust surveys to identify additional sites of local nature conservation interest.

‘Recent work has been aimed at filling in the blank tetrads. In 2005 there were 147 in v.c. 54 and now there are only 34 and this number is steadily falling. Good progress has also been made in v.c. 53 but there is still a lot of ground to cover in the Fens. Owen Mountford & Jonathan Graham are working on a Flora of the Fens and the fieldwork for this will fill in many of the blanks in v.c. 53 and contribute many records for v.c. 54.’

Michael Jeeves has been repeating the Habitat Studies from Pat Evans and Tony Primavesi’s Flora of **Leicestershire** (v.c. 55) and has completed an annotated county checklist. He asks whether Natural England has adopted the axiophyte concept – the answer is no, but they do seem to be independently moving towards a similar concept. If we do the ground work for them, they will presumably find it easier when they find they want full lists of biodiversity indicator species.

Dick Middleton is rarely enthusiastic about v.c. 61, **South-east Yorkshire**, but this year he writes: 'The poor weather and few active members would normally have resulted in very few records for the year. Fortunately the East Riding of Yorkshire Council is at present pursuing an active programme of surveying its Local Wildlife Sites and, as a member of the assessment panel, I expect to be able to add species lists from the 130 or so sites examined. Hull City Council also engaged consultants to assess Urban Greenspace sites this year and the data from their report will swell the database significantly.'

'The Threatened Plant survey was a little disappointing, returning largely negative results, largely as a result of habitat loss and lack of detailed map references for the original records. Non-recording activities have been reasonably fruitful with the rescue of a complete, bound set of *The New Phytologist*, which was surplus to Hull University Library's requirements, for the BSBI. The transportation of the quarter tonne of books from Hull to Shrewsbury did, however, present some interesting challenges. A new examination of the unattributed sheets of the Hull University Herbarium (HLU) has thrown up a surprise. Handwriting comparisons have revealed that a substantial number of these specimens may now be attributed to Rev. Joseph Hesselgrave Thompson (1811-1889), vicar of Cradley, Worcestershire. By coincidence Thompson was born in Hull and retained family links with the area, resulting in a sprinkling of records for v.c. 61 among the multitude for v.c. 37; article to follow when the re-examination is complete.'

In v.c. 62 (**North-east Yorkshire**) Vince Jones and Mike Yates have been hard at work recording tetrads, and had got 200,000 records into Mapmate by the beginning of 2008. They have also produced a draft rare plant register. The previous recorder, Tom Medd, has gone into an old people's home, and his son asked Mike to collect his botanical notebooks in case there was anything important; but in fact Tom had already handed over most of his papers when he retired.

From **Mid-west Yorkshire**, v.c. 64, Phyl Abbott sent her last report as County Recorder and included a list of axiophytes that she has drawn up (available on the web site). She will continue as Recorder for the Yorkshire Naturalists Union, will still be sending in records, but says the BSBI role is too demanding. Phyl writes: 'Groups and

individuals throughout the vice-county have been roaming the countryside and urban areas and finding interesting plants. There were 18 new vice-county records. All but one were aliens and most of these had escaped from gardens. The one native plant was *Atriplex portulacoides* which had escaped from the coast onto a roadside south of Greenhow. We now have a total of 179,124 records of 1,919 taxa on the database.

'I found *Mentha cervina* on a Yorkshire Naturalists' Union visit to the Yorkshire Wildlife Trust's reserve at North Cave. Although this has been a deliberate introduction into a single small pond at the site, the plant seems to be spreading aggressively and seems set to colonise more of this wetland site and provide an addition to Britain's flora. Roy Crossley discovered a colony of *Impatiens capensis* on the bank of the River Derwent below Kexby, a first for the vice county. By contrast this plant seems to have arrived unassisted, possibly from its v.c. 62 station at Castle Howard via Cram Beck and the Derwent – a hop of 20 km.

'Michael Wilcox has been busy microscopically investigating rushes and has found *Juncus x kernreichgeltii* (*J. effusus* x *J. conglomeratus*) all over the place. It was rewarding to see the first flowering *Cypripedium* in the Yorkshire reintroduction sites though there have been others elsewhere. It's been a long learning curve but we seem to be getting there at last – we hope!

'Another highlight for me personally was a blissful day spent with the Botany Section of the Wharfedale Naturalists' Society walking round the edges of the wonderfully species-rich hay meadows in Langstrothdale. The meadows are owned by the National Trust and managed appropriately.'

The following report was sent by John Richards on progress in v.c. 67 (**South Northumberland**): 'Working towards an RPR we distributed a list of historical sites for scarce plants in the county to active botanists in the county (mostly the 'Wednesday Botany Group' of the Natural History Society of Northumbria), and something over one third of these sites were visited during 2007. We were successful in locating seven filmy fern sites, three for *H. tunbrigense* and four for *H. wilsonii*, one of which was new, and other species for which most or all sites were successfully relocated included *Neottia nidus-avis*, *Goodyera repens*, *Ribes spicatum*, *Hordelymus europaeus*, *Betula nana*, *Sedum*

*villosum*, *Arctostaphylos uva-ursi*, *Allium schoenoprasum*, *Salvia verbenaca*, *Rhynchospora alba*, *Carex magellanica*, *Drosera anglica*, *Saxifraga stellaris*, *Asplenium septentrionale*, *A. marinum* and *Euphrasia rostkoviana*. We are starting to record 'Teesdale Alchemillas' in the south of the county with new sites for *A. acutiloba* and *A. subcrenata*.

'Other species are proving much more difficult to relocate. Despite strenuous efforts, *Crepis mollis* has not now been seen in the county for several years, and we are aware of only one remaining station for *Pyrola media*. Having shown that the only county record for *Drosera x obovata* was unlocalised (the locality on the 1915 sheet at Kew was the address of the collector), we were able to record it in the first localised site for the county, together with quantities of both parents. We have noted in the request for seed for the Wakehurst Place seed-bank that a surprising number of absentees occur in our county and we have laid plans to collect a number of these.

'Much of the Botanical activity in the county is now centred around the 'Wednesday Botany Group' which has at least 25 active members and meets weekly in season. We are fortunate to have such a dedicated and well-organised group of workers. Quentin has cooperated with John Durkin (v.c. 66) and others to produce a website ([www.floranortheast.org](http://www.floranortheast.org)), and has also produced an axiophyte list for the county and this is available on the website. We would both like to record our gratitude to Gordon Young who works so hard entering records and in many other ways.'

**S**cotland  
David Hawker joined in the British Pteridological Society's national meeting in v.c. 73 (**Kirkcudbrightshire**) in July 2009, to look for a few national rarities and to 're-find' some old records. *Thelypteris palustris* was doing well at one of its two sites, but *Osmunda regalis* was struggling to maintain itself at another site. The group re-found several species and hybrids and tried out a new draft key to the *Dryopteris* group. David is now trying to persuade the local golf course groundsman to mow tall vegetation in the hope that *Ophioglossum vulgatum* will reappear after a gap of ten years.

David also undertook detailed rare plant monitoring at two coastal SSSIs, with five species showing considerable population

increases since 2003: *Centaureum littorale*, *Crambe maritima*, *Euphorbia paralias*, *Calamagrostis epigejos*, *Raphanus raphanistrum* ssp. *maritimum*. He also completed detailed surveys of open ground within three forest blocks for Forest Enterprise Scotland and advised on management possibilities to conserve biodiversity.

New taxa for the county included *Malus x robusta* and *Cortaderia selloana* in forestry blocks; and there were new finds of *Scleranthus annuus*, *Calamagrostis epigejos* and *Blysmus rufus*. However progress is still too slow to cover all the hectads adequately in DC4. He says he now need to spend part of this winter collating the records on to RP25s and entering some records into MapMate. Yes, please! Actually, it is quite surprising that he doesn't enter such records into Mapmate before producing reports for organisations that have commissioned surveys. Do people not find that it is quicker to put data into Mapmate and then export it, than to produce lists in other ways?

Alan Silverside (v.c. 74, **Wigtownshire**) had a grumble about the direction that the BSBI is going in. He says that it seems county recorders are increasingly being treated as unpaid data gatherers. This is an interesting point to raise. What is a county recorder? Is it someone who volunteers to collect data for the BSBI? Or is it someone who independently collects data for their own purposes, and who has chosen to join the BSBI so they can work with other county recorders on collaborative projects such as national Atlases? Historically, recorders have been self-motivated and the society worked for them and with them. In the modern world, most organisations work the other way round – HQ makes the plans, and the volunteers carry them out (some bird recorders actually pay for the privilege of collecting data for the BTO). One of the interesting things about the BSBI is that we don't do things that way – yet.

Rod Corner (**Selkirkshire & Roxburghshire**, v.cc. 79 & 80) writes: 'help was given to site condition monitoring for *Juncus alpinoarticulatus* on the Whitlaw Mosses NNR. Although lost from one of the four mosses in the reserve, it appears to be holding its own in the remainder. It was found in a new site in v.c. 79 but has been lost from a site in v.c. 80 due to the effects of neighbouring coniferisation.

'*Cardamine impatiens*, originally recorded as being native in its only site in Scotland in v.c. 80, appears to be extinct. Another extinction was *Saussurea alpina* in one of two sites in v.c. 79. This was inevitable as sitka spruce shaded out the plants and the forest owner was reluctant to help.

'*Eleocharis mamillata* was refound in a hectad where the recorder was doubtful of the original record (his own!) and thus updating it to its three Scottish hectads, all in v.c. 79. *Alchemilla glomerulans* occurred on river gravel near by at a new site showing it is capable of spread from known colonies in the neighbourhood. The rare Scottish hybrid *Viola odorata* x *hirta* thought to be extinct was refound in v.c. 80 but was being trampled and chewed by cattle.

'A group visit organised by the local biological record centre visited a lowland site in v.c. 80 where *Eriophorum latifolium* had been discovered. This previously overlooked site amazingly had escaped the ravages of modern agriculture and had probably been an old raised mire cut over for peat in the distant past exposing the underlying marl which provided basic conditions for the *Eriophorum*, *Parnassia* and the three subspecies of *Gymnadenia* amongst other interesting flora. The landowners appear interested and sympathetic.

'Significantly one of the only two sites of *Crepis mollis* in v.c. 80 where it was thought to be extinct was refound by the detective work of two lady botanists. The *Crepis* then became a source of ammunition for those opposing the application for a wind-farm near the site. The recorder was happy to give evidence to the enquiry for the protection of the *Crepis* and although officially listed to do so, his evidence was not required. The enquiry is still ongoing.

'A recent early winter visit by Paul Green has added 6 NCR's of introduced species to v.c. 80.'

Michael Braithwaite has been resurveying some of the squares in v.c. 81, **Berwickshire**, that he visited for the New Atlas project, and is finding rather more species than he did previously; but Berwickshire was well recorded, so these findings give us a better idea of how well the good squares were surveyed for the Atlas.

For those who like to keep up with technology, he bought a new computer, wristwatch Garmin GPS, and Memory-Map (1:25,000 OS maps on computer). The computer, which uses Microsoft Vista, caused problems with Mapmate because

when you run the program 'as administrator' it assumes you are a different user than if you just run it normally. Then, in future, you can only view the records that you input when running the program in the same mode.

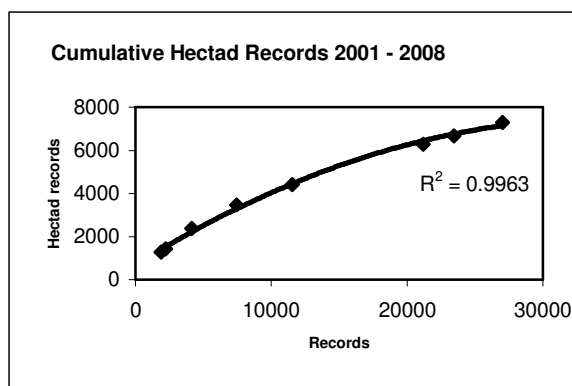
Despite this, Michael has input 5,459 new records and worked on historical data sets, yielding another 8,975 records from his card index, and 1,144 records from a set of Wild Flower Diaries. Working through Captain F.M. Norman's herbarium, he finds that only 20% relates to v.c. 81, with very few records of interest as the scarce species are from well known populations. This is always a problem when digitizing herbaria: only a small proportion of the specimens will be of interest to the digitizer, and it is impossible to justify working on the rest. This is where Herbaria at Home comes in useful: it is cheap enough that one can afford to photograph all the sheets in a collection, and the web site allows all other potential users to find the small proportion of specimens that they are interested in.

Jackie Muscott (v.c. 84, **West Lothian**) writes: 'I have continued to visit areas of the county which have not been looked at recently (working in a 1 x 1km basis, as always) to update the Atlas. In 2008 I was also involved in the Threatened Plants Project and have submitted an article about it for the Scottish Newsletter. I plan to do much the same next year, and hope for new finds, I gather my historical records are likely to be input as part of the Scottish records scheme in or around 2010, and this will require some work on my part.'

Andy Amphlett reports that, in **Banffshire** (v.c. 94), some 3,604 records of 594 taxa were made in 2008, entered into MapMate and synched to BSBI. Some 84% were made by, or jointly by, Andy himself. He writes: 'it would be interesting to know what proportion of records are made by recorders in other counties. Notable at a county level were *Corallorhiza trifida* – refound at a site where previously recorded in 1971 – 74, but not since; *Equisetum hyemale* – at a new site, the fifth in the county. Small plants in calcareous flushes; *Helictotrichon pubescens* – found by Ian Green. The first county record since 1989; *Arabis hirsuta* – a scarce plant in NE Scotland. First coastal record for >50 years, though extant in a few inland sites; and *Juncus maritimus* – refound at its only v.c. 94 site, where last recorded in 1971.

'No new native species were found, but c. 8 aliens new to the county were recorded. A BSBI / NESBReC (NE Scotland records centre) data sharing agreement was signed in late 2007. I supplied c.70,000 records to them in May 2008. However, the return flow of data from NESBReC has been slow, and what has appeared has required a lot of tidying up. Unfortunately there has been no progress on supplying the most recent and useful data that they hold. Hopefully 2009 will see things resolved.

'Overall, recording in v.c. 94 post 2000 exceeds that achieved in the most recent Atlas date class (87 – 99); slightly at the hectad scale, but c. 2.5 fold at the tetrad scale. Comparing post 2000 hectad recording to all date classes combined shows that re-recording is currently at c.50%. The two graphs below illustrate the increase in hectad records vs. actual number of records(left), and, the number of new hectad records per 100 records (right). I am still gaining c. 17 or 18 additional hectad records for every 100 records. I conclude from this, that at the hectad scale, 10 years is too short a time scale to adequately cover the county, and that 20 years is more appropriate – unless a few new botanists decide to move to the area!



The diminishing rate of returns in Banffshire, in terms of new hectad 'smarties' as fieldwork reaches saturation point. When the graph reaches a plateau, then the fieldwork is done.

'I was wondering about the 10 year recording period related to the Maps Scheme. Come 2010 I could just start again - which could mean going to the same sites (interesting and or accessible), and recording a lot of the same species, hence leaving many parts of the v.c. un-recorded. Or I could continue going to new sites making plant lists, perhaps consciously searching for species not recorded in the hectad for >10 years. In doing

that, I'd pick up many of the common species anyway. The AUP will presumably continue to show distributions by decade (a good idea), but I may choose to plan my field work in order to get the best possible coverage of the v.c.'

From v.c. 109, **Caithness**, Ken Butler writes: all the post-2000 records are now in Mapmate and up to date. After 8 years of post-2000 recording the v.c. coverage is very patchy with several remote hectads not visited at all. Relations with SNH are good. I sit on the local Biodiversity Group and there liaise with other natural history interests, notably RSPB and the local Forest Trusts. I also sit on the Plantlife management committee for the local reserve.

I ran a Field Meeting in Thurso this year. There were 15 members and 2 non-members at various times over the four days. 1,384 records were made including 5 new v.c. records. A report has been sent in for publication.

My book on 'The Wild Flowers of the North Highlands of Scotland' is complete and with the publisher, with a publication date probably in late May. As a result I have made no progress with the Rare Species Register which stands half finished.

New species for the county during the year are: *Sedum forsterianum*, *Hammarbya paludosa*, *Lythrum portula*, *Glyceria maxima*, *Poa compressa*, *Euphorbia cyparissias*, *Circaea x intermedia* & *Rosa x dumalis*. I still need to get these off for publication/Census Catalogue, etc.

Lynne Farrell (v.c. 103, **Mid Ebudes**) reports that by the end of 2007 she had just 123 tetrads to survey to get full coverage for Mull. One of the sites she surveyed involved getting a lift from the local fisherman, walking across four tetrads to get to the target one, and spending a full ten hours doing just this one midge-infested tetrad. However, she was rewarded by the only known site for *Carex magellanica*. She also surveyed one island by binoculars as it is impossible to land and – astonishingly – recorded *Platanthera bifolia* there. Is this our first tetrad survey by remote sensing? Like many Scottish recorders, Lynne has had grant aid to get her 19,000 records input onto Mapmate by a contractor.

Lynne also reports favourably on a new book on the flowers of Coll & Tiree, produced by locals with her help and an HLF grant. It complements the recent Flora by David Pearman and Chris Preston.

Barbara & Brian Ballinger (**Easter Ross**, v.c. 106) say, 'We finally got into our last 10km square for atlas updating (or rather a little corner of it), on the third attempt and with the help of a boat. We had previously had to turn back because of unfordable torrents or lack of daylight hours. A full tetrad coverage of v.c. 106 is not a realistic proposition, but all records are to monad accuracy or more.'

'The first version of our Rare Plants Register is now available, although it is being regularly updated. We managed to get round all our 21 threatened plant sites, some remote, and refound most populations. With regard to *Pyrola media* we did a small study of vegetative identification of all 5 British wintergreen species (see the BSBI Scottish website). We continue to work with the local voluntary and statutory organisations.'

'Plans: we aim to fill gaps in the Atlas updating and RPR. We are working on our annotated checklist; we are organising a BSBI field meeting and also meetings for other groups; we continue to record other organisms as well as vascular plants when in remote areas that others do not visit. In the immediate future we will be checking the Important Plant Areas in our vice-county as requested by Plantlife.'

The report on the Outer Hebrides, v.c. 110, by Paul Smith and Richard Pankhurst, reads: 'Paul visited twice, once in May for a blitz on *Taraxacum* (for which big thanks to John Richards for dealing with 50 specimens!), and a shorter visit at the end of August which was productive for a range of species best identified later in the year, including *Atriplex*. On this latter visit we followed up a report of *Juncus filiformis* in a new site in unexceptional habitat in peaty moorland, which was duly corroborated and written up for the BSBI Scottish Exhibition meeting. We continue to make headway on tetrad recording, although we will be saying that for a few years to come.'

'We finished the first edition of a Scarce Plant register for v.c. 110 in mid-2007, and is now available on the web, although we have already circulated it to SNH and the Western Isles Council's biodiversity officer. We commented on an early draft of the Western Isles Native Woodlands Strategy, a result of earlier contact with the woodlands officer – we had already passed on records of native tree species for him to use. Paul completed abstraction of details of specimens from v.c. 110 in NMW, which was

well worthwhile, not least because it turned up a further locality for *Carex maritima*.

'Richard extracted nearly 9,000 records from the report of the Lewis wind farm survey in 2004, and added them to the database, which now contains over 130,000 records. Orchid enthusiasts were out in force in 2007, and a new locality for *Dactylorhiza ebudensis* was found on the island of Berneray (Harris), in addition to the two known sites in North Uist. There was also a rush of records for *Gymnadenia conopsea* in North Uist; previously only known from one locality on the island of Fuday, between South Uist and Barra. The oddest record of the year was perhaps the pink water lily *Nymphaea marliacea*, looking wild in a lochan on Barra, but presumably planted.'

## Ireland

Alan Hill sent his last batch of data for v.c. H32 (Co. Monaghan) before retiring. He asks that his records be made available to the new National Biodiversity Centre in Waterford – which we are happy to do.

Ian McNeill (**Co. Tyrone**) says that in 2008/9 he will, health permitting, attempt to produce a meaningful contribution to the Atlas Updating Project for Date Class 4. He has also been working with Paul Hackney on the Flora of Co. Tyrone and contributing to the work of the Irish Committee. Ian sent an extensive list of additions and corrections to the New Atlas and asks if any other counties have done anything similar. Oh yes! Many counties have added 20% or more to the records included in the Atlas and deleted many of the ones that were printed. This is because it can take years for all data to filter through, and the checking process is an ongoing one. In truth, there can be thousands of corrections to make to a data set after a time, and we have not completely worked out how this can be done. As long as county recorders know what they are doing, though, it should be soluble.

David McNeill, **Co. Antrim** (v.c. H39), writes, 'My activities in 2008 were seriously constrained by the atrocious weather. The main focus was on recording for the Threatened Plants project. I visited all 4 of the sites I was allocated (some more than once) but failed to find the target species in any of these sites. However, I did find *Pyrola media* near to one of the sites. Although my grid reference is new, there is a possibility that the 'new' site was already known but wrongly referenced. I have written a 2-page

report for Kevin Walker and submitted a detailed species record card. The conclusions are that 8-figure grid references are absolutely necessary for all rare and threatened plant records and that a local recording group would make a huge difference. I have also obtained a handheld GPS and have started recording more accurate grid references whenever I am out. Did some general recording in the Belfast Hills. Established contact with Jim Bradley of the Belfast Hills Partnership.

‘My plans for the winter are to enter all my records into the Recorder database in conjunction with CEDaR. It is encouraging that the CEDaR records seem to be getting to BSBI. I plan to write to all BSBI members resident in County Antrim to generate interest in a local recording group. I will be leading a field trip to the Belfast Hills in June 2009 and it is hoped that this will generate interest in field recording as well. I also intend to visit as many sites for rare species as possible and record 8-figure grid references.

‘I have made a provisional list of 300 axiophytes based on my gut feelings about the plants in the county. There is insufficient data to finalise the list but the exercise was interesting and it was a useful list to pass to conservation groups (such as the Belfast Hills Partnership). I instinctively felt it was right to include ‘good’ species (such as *Dryas octopetala*) even if they were confined to a single site in the county. Including them means that maps of species richness will be more accurate. Paul Green did not include these species in his axiophyte list for Waterford. What do you think?’

In answer to that, we agree that rare species should be included in the axiophyte list. Originally we wanted to exclude them because they don't add much statistically and, more importantly, in the south of England you tend to get a lot of Mediterranean species on the very edge of their range, which then dominate conservation plans to no obvious benefit. But, on reflection, a little ecological understanding should eliminate them from the axiophyte list just as easily.

## Referees

**R** Alec Bull (brambles) reports that he receives plenty of specimens each year, and also visits several counties to help with their bramble recording. In 2007 he found *Rubus sneydii* in Nottinghamshire, and he says a national *Rubus* database would be a good idea.

## Museums

**M** Tim Rich (**National Museum of Wales**) reports that Rose Murphy's *Fumaria* handbook is about to go to press (mid January). ‘Thank you to those who have helped revise my lists of species and infraspecific taxa recorded for each vice-county. It is clear many of the infraspecific taxa are under-recorded, and Rose will continue to work on *Fumaria* and update the records after the handbook is published.

‘We have completed documenting the Swansea University herbarium which is now incorporated into **NMW**. Amongst the material are records from v.cc: 1-31, 33-46, 48-50, 52-59, 61-66, 69-70, 72-73, 78, 83-85, 88-94, 96-97, 100, 103-105, 107-108, 110-112, H1-H3, H9, H15-H16, H24, H27-H28, H38 and the Channel Islands. Please contact me if you want an Excel spreadsheet of the records for your vice-county.

‘We are 80% of the way through curating and documenting the national *Taraxacum* collection, and hope to complete it by the end of March. We will make the data available after comparing against the *Taraxacum* database, though many of the records, but not all, are already held in the database.

‘We have also been documenting the herbarium material of all British and Irish Biodiversity Action Plan priority species, and would appreciate help checking the records later in the year.’