

Progress with the *Carex maritima* survey

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For the last couple of years we have been collecting information on Curved Sedge *Carex maritima* in the hope of finding out more about its true status. Many recorders have been good enough to spend time looking for it and sending in new records. There were some highly productive surveys during the field meeting in the Outer Hebrides in July, with several new sites, containing thousands of plants, being found. Many thanks to Richard Pankhurst and Paul Smith for compiling the results and sending them on, and to all the surveyors who took part. These new sites added two whole hectads to the distribution map.

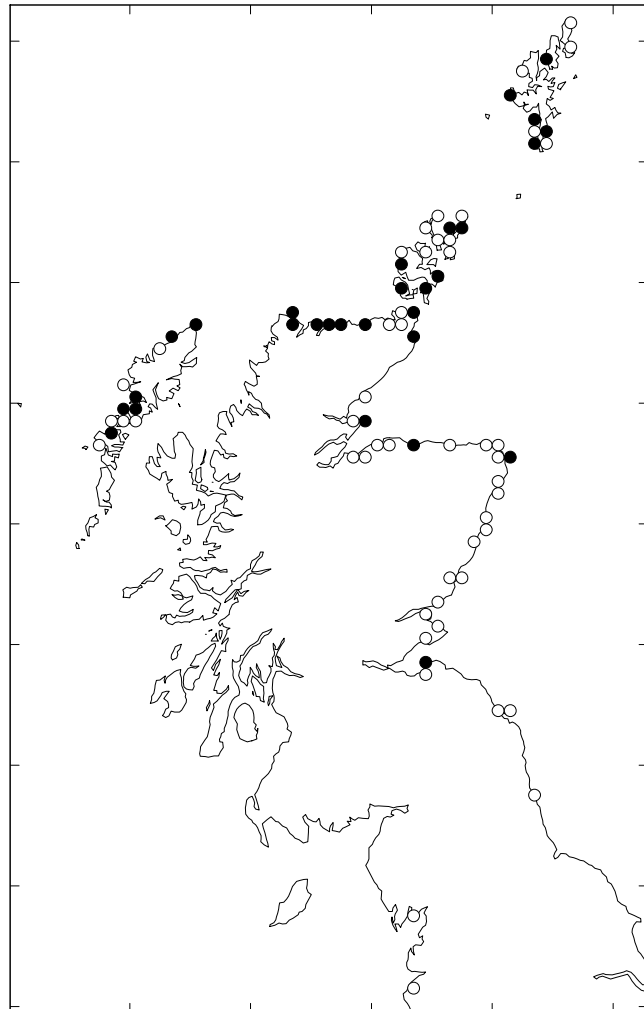
In June Ian Green re-found a population at Lossie Forest in Spey Bay (NJ36) that had last been seen in 1953. Pat & Ian Evans carefully measured the extent of the colony at Faraid Head (NC37) and found it crossed the 10km line into NC36 as well, adding another new dot to the map.

Ken Butler re-found the plants at Bay of Sannick (ND37), where it had been thought lost; and Barbara & Brian Ballinger discovered a new population at Tarbat Ness (NH98) – a square where it had last been seen as long ago as 1842, albeit not in the same place. Other post-2000 updates include Deerness (HY50, Eric Meek) and Sands of Meal (HU33, Sarah Whild & Alex Lockton). The updated distribution map (right) also contains several historical additions and deletions, based on further research into the old records.

The main question we want to answer is whether this species is in decline or not. On the one hand, there are plenty of places where it was recorded in the past and seemingly does not occur now – mostly along the east coast of Scotland and in the more southerly sites. On the other hand, it seems to be doing well in the west and the north, and we know of more sites for it now than at any time in the past. Some of this, of course, must be down to better exploration.

The information is therefore open to interpretation: it could arguably be declining, or simply remaining about stable whilst moving about a bit, or just possibly increasing.

We proposed in the last edition of *BSBI Recorder* (March 2006) that *Carex maritima* is a mobile species that exists in meta-populations that move about in space and occur intermittently in time. We have some direct evidence of it colonising new sites, such as at Helliars Water reservoir on Unst (HP60), where it has been for several years since being inadvertently imported with sand; in a former sand quarry at Traigh Mhor on South Harris (NG09) – arguably a site



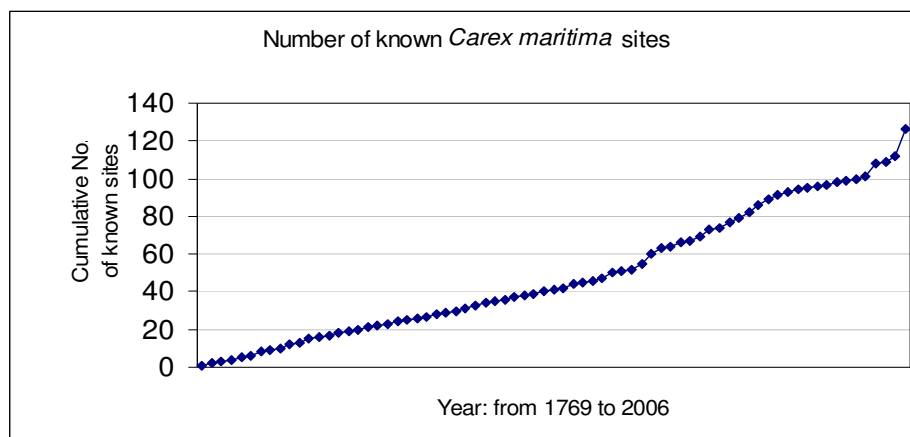
Curved Sedge *Carex maritima* in Britain. Black dots are for current sites (post 2000).

where it might have been already, but certainly new habitat for it; and a roadside on Wideford Hill near Kirkwall, Orkney (HY41), where it grew for a short while after sand was dumped there. At St. Andrews Links (NO51) several large populations were found on the fairways in the 1980s, but they did not last long and it is possible that they were also accidental introductions from the nearby native population. These examples provide evidence of colonisation of new sites, and it is not unreasonable to assume that it gets around by the traditional 'bird's foot' mechanism to new sites on a regular basis.

We also have evidence of its lack of persistence at natural sites. Elaine Bullard documented a place at Hundland on Papa Westray (HY55) where it grew in 'thick, almost fen vegetation' in 1965 and has not been seen since. Ursula Duncan recorded a site at Barry Sands (NO53) that was invaded by *Phragmites*. *Carex maritima* usually grows in places where there is fresh water in otherwise unvegetated sand, such as in dune slacks and alongside streams. These are inevitably temporary habitats, prone to either drying out or becoming overgrown by natural succession. The large, hard seeds of *C. maritima* are presumably adapted to surviving for long periods buried in the sand and for surviving long journeys to potential new sites.

So how can we assess the status of a plant that moves around? The traditional system, as used in the Change Index and in calculating the threat status of species is not altogether helpful as it depends on the assumption that all populations are both stationary and persistent.

The only solution would be to monitor the plant for a period of years and decades and see how it gets on. The number of new sites discovered in the last few years suggests that we have not yet found all the populations currently in existence. The graph below shows no sign of producing a plateau, and raises the possibility that there could be many more populations waiting to be discovered. Either that, or new populations will continue to spring up at the rate of about one a year, and many of those will subsequently be discovered.



The rate of discovery of new sites for *Carex maritima*, taking a 1km square as a site. Approximately one site is discovered every two years, and has been since the 18th century. Is this due to colonisation of new sites, or is it just the result of more survey work?

Can we recommend any action to nature conservation organisations, based on the information that is available? Well, it is clearly a Nationally Scarce species with a large number of individual plants – hundreds of thousands, at least. It has declined in certain parts of Britain, but not noticeably so in recent times, so it would be best considered not threatened. For scientific purposes, we need time to study it without anyone attempting to influence the findings, so it is very important that it should not be planted anywhere or deliberately translocated, other than in the traditional, accidental way that it gets about. Therefore there should be a ban on any funding for targeted conservation work if we are to have any serious chance of quantifying its metapopulation dynamics.