UK Fen Orchid (*L. loeselii*) survey results 2015

Royal Society for the Protection of Birds, September 2015

1. Introduction

This report summarises the currently available fen orchid survey data from the UK.
Seven separate surveys have been carried out in the UK in 2015.

1. South Sutton Broad,Plantlife partial count
2. Hand Marsh, RSPB partial count
3. Catfield Fen Mill Marsh West, RSPB partial count
4. Catfield Fen Mill Marsh east, RSPB partial count
5. Catfield Great Fen, Plantlife partial count
6. Upton Fen, Norfolk Wildlife Trust full count
7. Kenfig dunes, Natural Resources Wales & Bridgend Council full count

2. 2015 Monitoring data

2.1 South Sutton Broad 2015

Since 2012, Plantlife has been employed by the RSPB to complete a detailed survey of a 3ha area of South Sutton Broad. The survey area is split into 80 areas that coincide with blocks of cut fen.
51 blocks were counted in 2015 with a total count of 3168 fen orchid spikes in 305 clusters. This is slightly more than double the 2014 count, though it is important to note that the survey area varies from year to year. Whilst these counts provide an indication of the overall health of the population they are only partial counts of the full area in which the fen orchid colony occurs.

Figure 1: Fen orchid clusters counted in Sutton Broad South in 2015

Red blocks = areas surveyed

Red star = fen orchid cluster

2.2 Hand Marsh

This small colony has been present since at least the 1990s but has only ever been counted informally. In 2015 a 30 min search found 54 fen orchid spikes. The count should be considered a 'minimum' count, not a total count. In 2016 a more thorough count of this colony is planned.

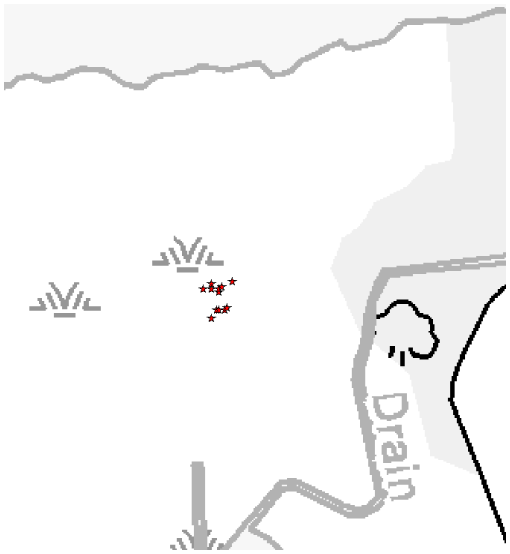

Figure 2: Fen orchid clusters counted in 2015 in Hand Marsh
Red star = fen orchid cluster

2.3 Catfield Fen Mill Marsh West

The colony on Mill Marsh West, was found in 2009, Since 2013, RSPB has been monitoring the colony. A full count is carried out on all reed plots cut in the preceding winter. As part of the reedbed is on a 4 year rotation, the whole area has not yet been counted, so the 2013, 2014 and 2015 counts are partial surveys with some overlap between years.

In 2015, 5 of the 9 survey blocks were counted, with a total of 4398 spikes found. This represents a notable increase in orchid numbers within blocks compared to 2013 and 2014 data. The increase seems to be across all blocks, though there has been a loss of 159 spikes (59 clusters) from the north-west corner where *Sphagnum* encroachment is taking place.

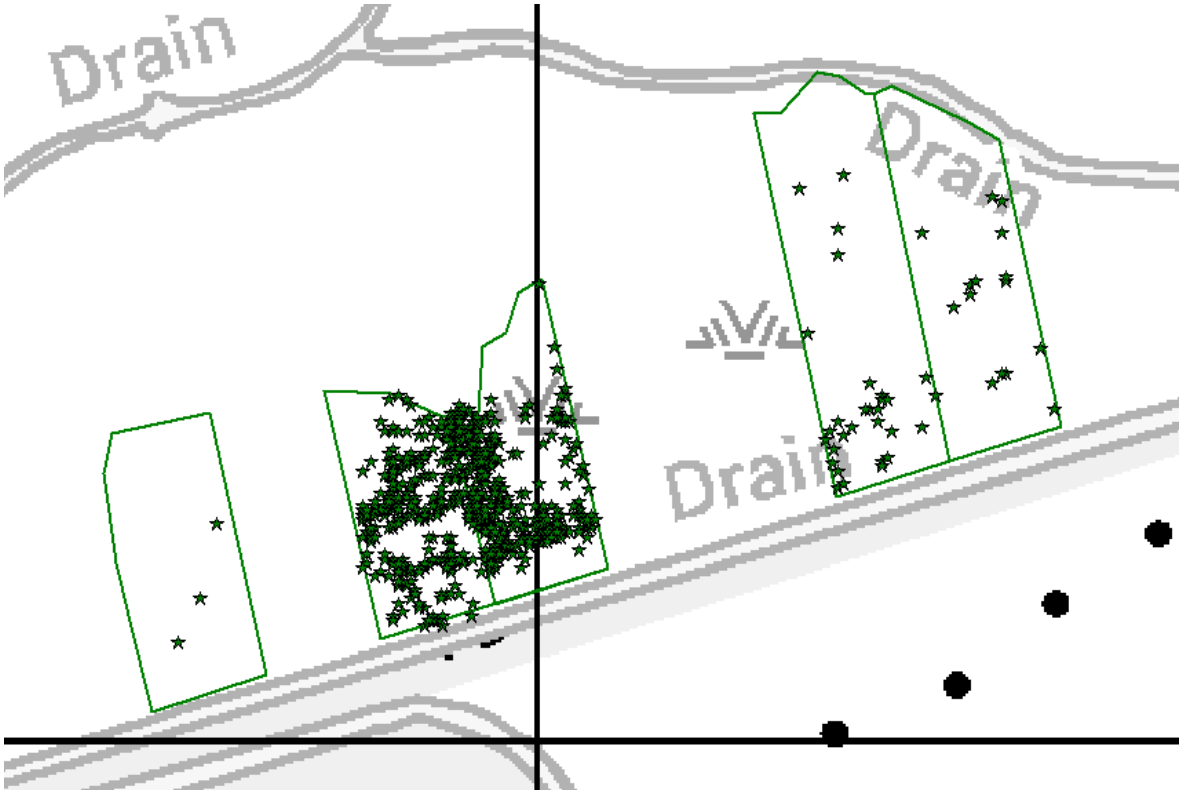

Figure 3: Map showing fen orchid clusters counted in 2015 in Mill Marsh West

Green star = Orchid cluster

Green block = Area surveyed

2.4 Catfield Fen Mill Marsh East

This colony was found in 2013 and counted fully in 2014. In 2015 a small block to the West of the colony was cut in November 2014 and then counted in June 2015. 2 non flowering spikes were found. Clearly this is not representative of the colony population as a whole as the main colony was not counted.
The method for counting this colony will be considered ahead of 2016. It may be more suitable to do a full count of the whole colony each year as the plan for cutting in this area is informal (not in rotational blocks).

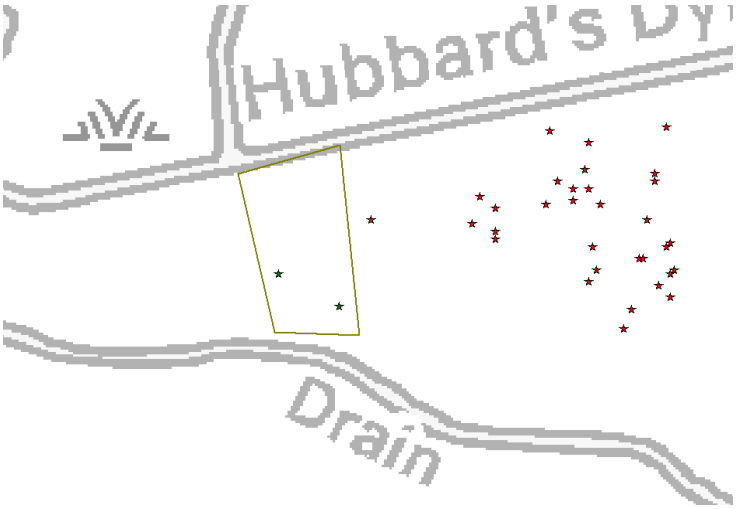

Figure 4: Fen orchid clusters counted in 2015 in Mill Marsh East
Green star = Orchid cluster 2015
Red star = Orchid cluster 2014
Green block = area surveyed in 2015

2.5 Catfield Great Fen

Plantlife visited this colony on 24th August 2015 and counted the area cut recently for commercial sedge. This was only a partial count of the colony. 53 spikes were counted in 26 clusters. In 2014 the full colony was counted, within the area counted in both 2014 and 2015 the number of spikes counted was more than double in 2015.

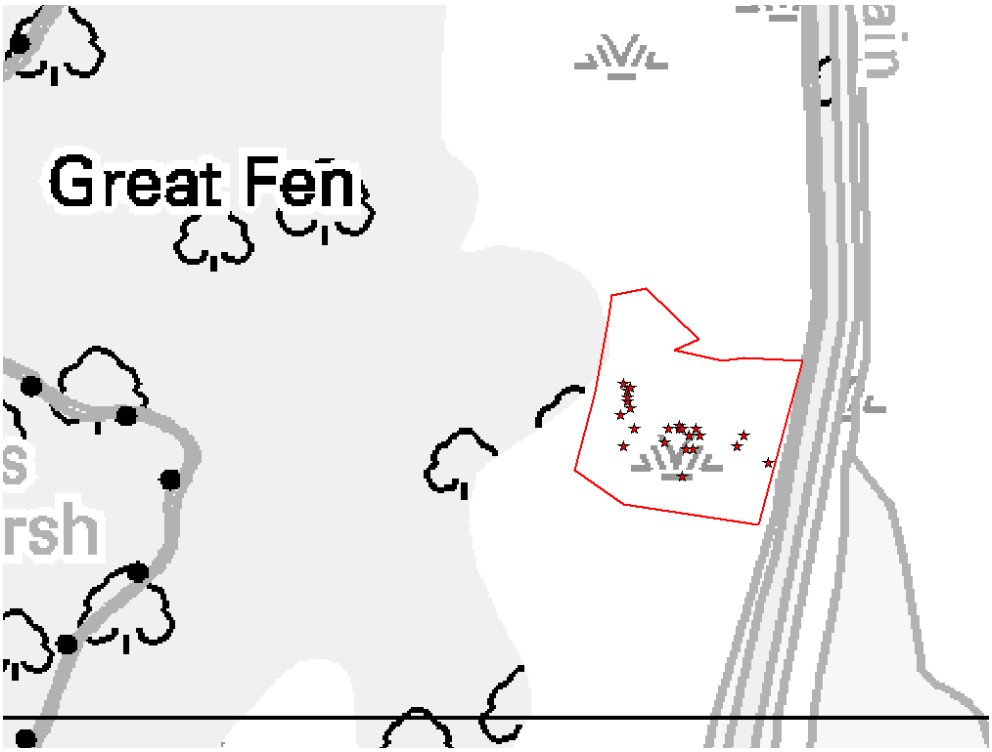

Figure 5: Fen orchid clusters
counted in 2015 in Catfield Great Fen
Red star = Orchid cluster 2015
Red block = area surveyed in 2014

2.6 Upton Fen

The full population was counted on 30th June by NWT with a total of 146 spikes. The count took place later in the year than normal. (Pers comm. Adam Pimble). This is a significant increase compared to 2013 and 2014.

2.7 Kenfig Dunes

Final data is still being awaited, but an early assessment of the data has provided a count of around 400 spikes (Person comm.. David Carrington)

3. Summary data

Table 1: Recent counts of fen orchid colonies within the UK. All numbers are number of 'spikes'			
	2013 count	**2014 count**	**2015 count**
Sutton Broad			
Sutton Broad South	1326 (partial)	1538 (partial)	3168 (partial)
Sutton Broad East	23 (full)	30 (full)	54 (full)
Catfield Fen			
Catfield Mill Marsh West (BC)	964 (partial)	1843 (partial)	4398 (partial)
Catfield Mill Marsh East (BC)	3 (partial)	83 (full)	2 (partial)
Catfield Hall Estate	1(partial)	0 (full)	0 (partial)
Catfield Great Fen	Not surveyed	187 (full)	53(partial)
Upton Fen			
Upton Fen (Broads)	12 (full)	38 (full)	146 (full)
Dune subspecies			
Kenfig Dunes (Bridgend, Wales)[1]	45 (full)	40 (partial)	c.400 (full)
Total, var. *loeselii* only	**2329**	**3719**	**7821**
Total, both subspecies	**2374**	**3759**	**8221**

The introduced population at Ranworth is not included - the plants are of non-UK origin and are not considered part of the native fen orchid population.

1. Liparis loeselii Ovata (Dune variety) subspecies.

4. Summary

Any assessment of population trends of orchids over short timescales is difficult, as fen orchid populations fluctuate annually and are sensitive to a range of biotic and abiotic factors. Nevertheless, 2015 was clearly a very good year for fen orchid in the UK with all well counted populations increasing significantly. The wholesale increases implies a positive effect from recent weather, with two relatively mild winters and relatively moist summers in succession perhaps involved.

Whilst count methods are now more uniform between sites (i.e. using closely spaced transects to search with clusters recorded by GPS) the smaller colonies are still counted on a rather ad hoc basis, relying on areas of cut vegetation to make searching practical, this means that these outliers are undercounted and comparison between years is not possible. From 2016 onwards RSPB will attempt to coordinate full counts of the Hand marsh and Catfield Mill Marsh East colonies.

For further assessment of the Catfield Mill Marsh West population and the potential threat of hydrological change and *Sphagnum* spp. expansion see the separate report titled 'Catfield Mill Marsh West fen orchid survey 2015, RSPB'.

Definitions

Fen orchids have a fairly typical and consistent growth form, they generally occur as a cluster of spikes growing in close proximity. These clusters are usually one plant all having originated from the initial coloniser (which could have germinated from seed or propagated asexually from plant material). Over time the plant sends up new spikes, some of which flower, but often do not. For the sake of clarity, below are the definitions used in this report:

Non flowering spike – the (usually smaller) spikes of 1 or 2 leaves that do not bear a flowering spike.
Flowering spike – the (usually larger) spikes of 2 leaves that do bear a flowering spike (though at the time of survey the actual flowers may be yet to bloom, or may have gone to fruit).
Spike – both flowering or non-flowering spike, this is generally used as the total population count (total number of spikes).
Cluster – The group of flowering and non flowering spikes that in theory make up one plant. This is subjective (which is why it is not used for the population count), as sometimes plants are growing adjacently and it is impossible to separate one plant from the next. However, this is generally used for mapping purposes as it is generally not practical to present a map showing each individual spike (as they can grow in such close proximity).
Colony – A discrete colony of plants separate from other colonies by a barrier (for example, a ditch, scrub, unsuitable fen).
Block – A survey area, often coinciding with a management area (a reed plot for example).