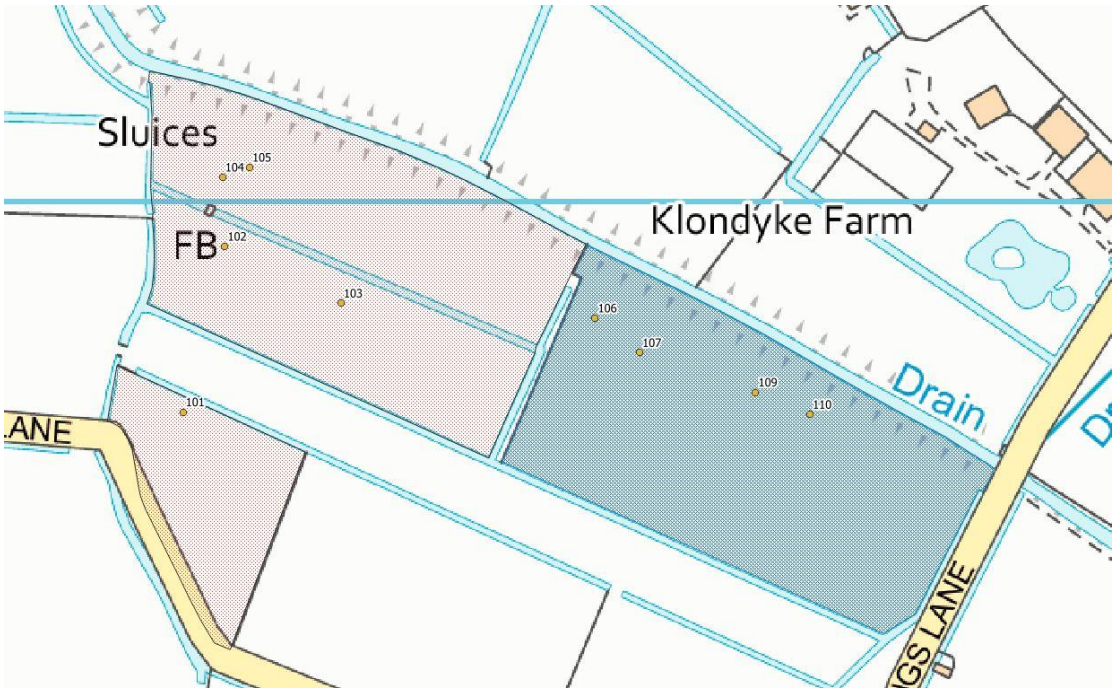
Site Visit Assessment Form – Bratoft, Lincolnshire



Yellow dots are quadrat locations visited in 2022.
Red fields are SSSI, the blue field is restoration field

Site Name Bratoft Meadow restoration field	**Grid Ref** TF484639	**County** Lincolnshire	
River Cowcroft Drain draining to the River Steeping	**Ownership** Lincolnshire Wildlife Trust	**Designation** SSSI adjacent	**Size (ha)** 1.6 ha
Date 23/06/2022	**Meeting with** LWT staff	**Managed by** Lincolnshire Wildlife Trust	
Management and History			
The ancient Bratoft Meadow was designated in 1984 as one of the best examples of species rich neutral grassland in Lincolnshire. It includes two parts divided by a narrow strip of improved grassland. Bratoft Meadow SSSI is managed by annual hay making in July and aftermath cattle grazing. The restoration field (Clark's Field) is adjacent to the bigger part of the meadow. Managed by the Trust since 2005 it is being restored from improved agricultural grassland by application of seed and green hay from Bratoft SSSI.			
Restoration			
Technique used/Dates			
Wildflower seed heads were collected from SSSI with a flail cutter and spread over the restoration meadow by hand in 2011. After hay cut in 15 July 2013 two hay bales loaded with seed from SSSI were spread on two third of the field on 26 July. Until 2015 the field had been cut for hay and aftermath grazed; and every 4 years			

grazed only. From 2015 it has had a two-system approach: it has been grazed by cattle one year followed by hay cut and grazing in the next year. This was an attempt to control hogweed which dominated the north side of the field near the drain. Hogweed has been much reduced by 2022.

Hydrology	The site floods occasionally.
Flooding regime Water management Soil-water levels (indicated by auger hole/any other data)	

Historical information

The Trust bought Clarke's Field in 1993 although there was a tenant on it until 2005. It was pretty rough at that time and full of thistles which were sprayed off over a two to three-year period and the field brought into some sort of order initially by summer grazing and later by taking a summer hay crop followed by aftermath grazing.

Current site interest	Attached excel spreadsheet for botanical data

A botanical survey was carried out on both Bratoft Meadow SSSI and the adjacent restoration field with five 1 x 1 m quadrats in each field recorded. The ancient meadow is very species-rich, with between 24 and 27 species per 1 m^2. The restoration field has not developed species richness to the same level, with between 14 and 18 sp/1 m^2. Desirable species like great burnet *Sanguisorba officinalis*, devil's-bit scabious *Succisa pratensis*, and meadow vetchling *Lathyrus pratensis* are present, however, they are not yet well spread across the site.

The SSSI field has very healthy populations of Dyer's greenweed *Genista tinctoria*, saw-wort *Serratula tinctoria*, green-winged orchid *Orchis morio*, glaucous sedge *Carex flacca*, great burnet, rough hawkbit *Leontodon hispidus* and yellow rattle *Rhinanthus minor*. The site is famous for the flowering displays of devil's-bit scabious.

Bird's-foot-trefoil *Lotus corniculatus* and common bent grass *Agrostis capillaris* are most abundant in the meadow. The abundance of hogweed *Heracleum sphondylium* in places is also high.

The restoration field still has a high cover of perennial rye-grass *Lolium perenne*, indicating its improved pre-restoration status. Common bent grass, red clover *Trifolium pratense* and crested dog's-tail *Cynosurus cristatus* are the dominant species in the field.

The plant community in the SSSI field shows high similarity scores to MG4a and MG4b – cock's-foot and Typical subcommunities of MG4 (Burnet floodplain meadow *Alopecurus pratensis-Sanguisorba officinalis Dactylis glomerata sub*-community and Typical sub-community).

The plant community on the restoration meadow has just over 60% similarity score to the typical subcommunities of MG4 and MG5, suggesting it is well on the way to developing a target community similar to the SSSI.

The Ellenberg indicator value (Table 2) for soil moisture for the restoration field is F=5.06 which is lower than the SSSI at F=5.32.

The soil nutrient level in the restoration field is low: Ellenberg N=4.5, and it is even lower in the SSSI field (N=3.84). The functional diversity of the plant communities in both fields is very well balanced (Table 2).

With some increase in species richness, the restoration field will continue to develop more similarities to the adjacent SSSI field.

Both fields qualify as Priority Habitat Lowland Meadow: the SSSI as Condition A and the restoration field as Condition B.

Phosphorus levels	Phosphate index (P) = 0
Soil profiles	
	Not recorded
Site manager aspirations/objectives	
More species rich meadow, similar to SSSI fields.	
Management recommendations	
Management on both SSSI and restoration fields has been very successful. The management to control hogweed appears to be working and should continue. It is recommended to submit both fields (if not already) to the PHI team at Natural England HabitatInventories@naturalengland.org.uk if you want to include them for future Stewardship applications. Send this report with the botanical datasheet attached to the above email address.	

Table 1. Summary of botanical data.

	Bratoft Meadow SSSI	Bratoft Meadow restoration
Ellenberg F (moisture tolerance)	5.32	5.06
Ellenberg N (fertility)	3.84	4.5
Ellenberg R (reaction)	5.72	5.98
Species/quadrat (mean and range /1 m x 1 m)	26.4 (24-27)	15.6 (14-18)
NVC (top 2 MAVIS subcommunities)	MG4a MG4b	MG4b MG5a

Table 2. Five categories of meadow restoration progress, measured by indicator scales based on species richness, NVC similarity score and ratios of Grime's plant functional types. Adapted from Rothero, Tatarenko & Gowing, 2020.

Bratoft Meadow restoration	**Score of success/progress**				
Measure	1	2	3	4	5 Success
Average scores from five botanical quadrats per field. Calculated in MAVIS					
Species richness (number of species per 1 m^2)	<8	8 to 12	13-15	16-20	>20
NVC similarity score	<50%	50-55%	55-60%	>60%	>60%
C:S ratio	1.65	1.39	1.23	1.1	1.09
S:R ratio	0.67	0.79	0.81	0.89	0.93