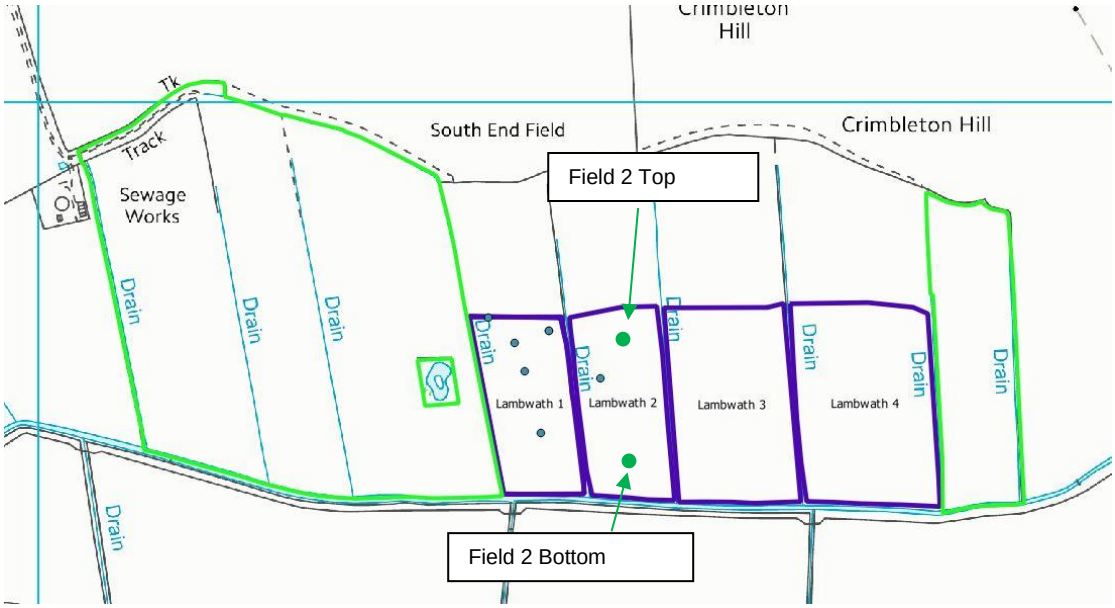
Site Visit Assessment Form Lambwath Meadows, Yorkshire



Restoration fields outlined in purple, SSSI fields in green

Site Name Lambwath Meadows	**Grid Ref** TA204397	**County** East Yorkshire	
Catchment Lambwath Stream	**Ownership** Carstairs Countryside Trust	**Designation** Adjacent fields are SSSI	
Date 15/06/2016	**Meeting with** No-one	**Managed** Carstairs Countryside Trust	**Area (ha)** F1=1.19 F2=1.25 F3=1.8 F4=2.08
Management and History			
Agri environment agreement			
An HLS scheme began on January 1st 2012, and has facilitated the restoration project on land adjacent to the SSSI, which was formerly arable. AG00380312			
Current management			
Annual hay cut, with aftermath grazing.			
Restoration			
Technique used/Dates			
Four receptor fields had one application of green hay taken from the adjacent SSSI fields of equivalent NVC status. This was in 2014 (dates/methods/was the ground			

prepared in any way, when was the green hay cut, was it left for any period of time before spreading?).

However the site has suffered 3 years of summer floods and the hay has not always been cut in those wet years. There has also been a sewage incident. Drains may need clearing.

Hydrology	Floods regularly from the stream.
Flooding regime Water management Soil-water levels (indicated by auger hole/any other data)	

Historical information

Believed to have been meres before drained by monks…when?? Alluvial deposits in the soil instead of peat at about 50 cm below ground suggest when the change in above ground management occurred.

Current site interest	Attach excel spreadsheet for botanical data

The top parts of the fields, both in the SSSI and non –SSSI restoration fields from our brief survey key out as MG5.

Lambwath Field 1. Five 1 x 1 m quadrats were surveyed on the first restoration field The plant community matched NVC MG6 and MG9 most closely. The species richness varied from 19 to 25 species per square metre. Perennial rye-grass *Lolium perenne* and meadow fescue *Festuca pratensis* form tall and dense swards with a projected cover of 10-40%. Marsh foxtail *Alopecurus geniculatus* patches were noticed near some quadrats. Autumn hawkbit *Leontodon autumnalis,* ribwort plantain *Plantago lanceolata,* lesser trefoil *Trifolium dubium* and red clover *Trifolium pratense* are abundant, having a projected cover of 10-20%. Creeping buttercup *Ranunculus repens* dominates in places with up to 35% cover.

Ellenberg indicator scores varied across the field. The top area was only slightly drier but much less fertile than middle and bottom areas.

Field 2. Three quadrats were surveyed (but only 208 was recorded in GPS, hence the other 2 are mapped as approximately on the map above). Vegetation at the bottom (lower) part of the field comprises up to 80% of red-veined dock *Rumex sanguineus*, with a dense sward of grasses like meadow foxtail *Alopecurus pratensis,* meadow fescue *Festuca pratensis,* perennial ryegrass *Lolium perenne* and tufted hair grass *Deschampsia caespitosa*, all about 150 cm tall. The abundance of ribwort plantain *Plantago lanceolata* in the bottom part of field 2 reaches 80% in places, indicating favourable conditions for the distribution of the seeds of this species. Meadowsweet *Filipendula ulmaria,* meadow rue *Thalictrum flavum,* Autumn hawkbit *Leontodon autumnalis,* oxeye daisy *Leucanthemum vulgare* and common knapweed *Centaurea nigra* were all found in the lower part of the meadows but with much lower abundance than in the top part. Species richness in the bottom part is lower (15 sp/m^2) than in the top (22 sp/m^2) part of field 2.

Ellenberg indicator scores show that the middle of the field is noticeably wetter and more fertile (N=6) than the top (N=4.4) and the bottom (N=4.8) ends. There is a very consistent vegetation indicative of weakly acid soil across the fields (R=6).
Distribution of the Ellenberg scores for soil fertility along the first and second fields were very similar.
Field 3 was not surveyed in great detail, with only 13 species listed there in a brief walkover survey.

Field 4 was completely dominated by grasses. Large areas were carpeted by creeping bent *Agrostis stolonifera*. However, in places, Yorkshire fog *Holcus lanatus* and tufted hair-grass *Deschampsia cespitosa* dominated the plant community. There are several nice meadow forbs and grasses in fields 3 and 4 but their presence there is very small. Double hay cuts are recommended to reduce the vigour of the grasses and reduce the soil fertility.

Phosphorus levels	A soil sample was taken to test P levels at Quadrat 208 (field 2). The Olsen-P value was 8.9 mg/kg PO4-P, which is relatively low level for floodplain habitats. Soil pH=6.64 is close to neutral
Soil auger photo and findings	Soil profile recorded at quadrat 208
	Soil profile *A horizon* 0-15 cm silty loam *B-horizon* 15-45 cm grey and orange mottled silty clay 45-120 cm peat with some clay lenses, sticks of wood approx. 1 cm length, seeds (ancient?). From 60 cm the peat is waterlogged. *C-horizon was not found at the depth of 120 cm*
Site manager aspirations/objectives	More species rich meadow
Management recommendations	

The restoration areas in the bottom halves of the fields looked like they had been flooded after the green hay was spread, as they weren't very diverse. The site looked very fertile with very tall grass growth, and really needed to be cut asap. However, Olsen P in the soil at least in field 2 (Q208) was not very high, there is a chance the grasses have benefitted directly from nutrients released in the sewage incident mentioned above, but the soils P availability has not been substantially altered.

Recommend timely hay cuts over next couple of years (June) and where feasible a second cut in September. May need re-seeding/green hay spreading as likely that the consecutive floods and no cutting, resulting in increased fertility and very vigorous growth of a few coarse species combined with flooding after green hay spreading, preventing germination of many species, has resulted in the failure of some of the finer grasses and herbs.

	Lambwath 1	Lambwath 2 top	Lambwath 2 middle	Lambwath 2 bottom
Ellenberg F (moisture tolerance)	5.66	5.3	5.9	5.7
Ellenberg N (soil fertility)	5.46	4.4	6.0	4.8
Ellenberg R	6.0	6.0	6.0	6.0
Species/quadrat (mean/1 x 1 m^2 and range)	19-25	22	21	15
NVC (top 2 MAVIS subcommunities)	MG6 MG6a	1 quadrat only recorded	1 quadrat only recorded	1 quadrat only recorded