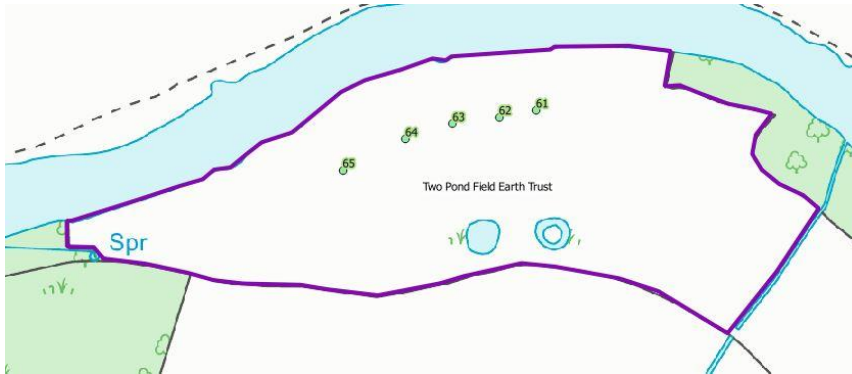


Site Visit Assessment Form – The Earth Trust Two Pond Field, Oxfordshire



The form records survey results collected from various site visits, and includes feedback following interviews with site managers. The map above shows the quadrat locations and numbers collected in 2018 and repeated in 2021.

Site Name Earth Trust – Two Pond Field	Grid Ref SU 584 932	County Oxfordshire	
River Thames	Ownership The Earth Trust	Designation None	Size (ha) 5.93
Dates for surveys 19 th May 2017 2 nd June 2021	Meeting with No-one	Managed by The Earth Trust	
Interview 13 th May 2021	Interview with Chris Parker		
Management and History			
Previously pasture. Forms part of the River of Life project which has involved re-modelling of river and floodplain in some areas, combined with sowing wildflower areas.			
Agri environment agreement AG00402391 Two Pond Field did not go into HK7 because at that time a P index of less than 2 was needed, and Two Pond Field had a higher P index. HLS started in 2021 therefore on Waterboard and Ferry Field, as HK7. HLS finishes in November 2022 – The Earth Trust have not yet been contacted by NE about what happens next (at the time of the interview in spring 2021) but are being told that the agreement will renew on a rolling yearly basis, likely until ELMS. The Earth Trust are keen to stay in the scheme, although they might move from HK7 to			

HK6 if the meadows are of good enough quality for maintenance rather than restoration.

Current management

The meadows are managed on rotation, with 2 years grazed and third year hay cut. Grazed with cattle (1 LU/ha). Each year a hay cut is taken from one of the three fields. This year (2021) the hay cut will be in Ferry Field. The rotation is set as they need some forage for overwinter for grazier, and need summer grazing land. Graze in the summer on the non-cut fields with cattle.

Two Pond Field however did get 3 years in a row of a hay cut 2017-18 and 2019, then was aftermath grazed.

Commented [E1]: Chris, I didn't note why this happened?

Hay cut dates – 15th July is agreement date. The Earth Trust tend to look for 5 good days to make hay. Actual dates:

- 2017 - 24th Aug
- 2018 - 15th July
- 2019 – 20th July
- 2020 - 19th July

Restoration

Sowed commercial seed in 2016, on previously species poor field. The seed was drilled originally into the existing grasslands, and TET think it had good coverage in some places, but in other spots there are still just grasses. They used a high rate of yellow rattle seed (20% of the seed mix). All fields were sub-soiled as part of the restoration activity. They were disked in two directions then power harrowed to create a seed bed. Then drilled on the surface with seed and Cambridge rolled, so it looked like an arable field even though it had been permanent grassland. They were aiming to introduce wildflower, not sow finer grasses. Did the three fields in subsequent years, not all done in the same year, in order to try and spread the risk.

Hydrology	The fields flood regularly, perhaps one year in 5. Land level is quite high above the river level. Flooded in 2014/15 and again in 20/21.
Flooding regime	
Water management	
Soil-water levels (indicated by auger hole/any other data)	

Current site interest See attached excel spreadsheet for botanical data. A botanical survey was undertaken by The Earth Trust (50 quadrats/2018). This can be shared. They were surveying against a target habitat type.

Survey from 2017:

The field is heavily dominated by two grasses, *Lolium perenne* and *Poa trivialis* (up to 70% ground cover). This explains the MAVIS score of 56% similarity to MG7 type of mesotrophic grassland. A small presence of yellow rattle in the community doesn't appear to have made much difference, due to the the dominance of the grasses.

According to Ellenberg indicator value for soil fertility N=6.18, a high level of nutrients is most probably responsible for the grass dominance. A seedling of great burnet *Sanguisorba officinalis* was found on one of the survey quadrats indicating that this target species did germinate on the field. However, with current abundance and density of grasses this has very little chance to survive the competition.

Survey in 2021:

Botanical survey of five sample quadrats first done in 2017, was repeated in 2021 by Irina Tatarenko.

The Ellenberg indicator scores didn't show any changes in soil fertility or soil moisture. The vegetation is dominated by three species of grasses: *Arrhenatherum elatius* (false oatgrass), *Lolium perenne* (perennial ryegrass) and *Hordeum secalinum* (meadow barley). The plant community type has moved from MG7 in 2017 to MG9 or MG1 in 2021, however all of these types are characterised by high grass cover and low species diversity. Functional types of plants in the community: competitors, stress-tolerants and ruderals, have changed their ratios over four years between the surveys. In 2017, ruderals dominated over stress-tolerants, while the balance between competitors and stress-tolerants was relatively good. By 2021, ruderals decreased their abundance, but competitors increased. Typical meadow species like *Leucanthemum vulgare* (oxeye daisy), *Gallium verum* (ladies bed-straw) and *Centurea nigra* (black knapweed) are slowly spreading in the field, but the grass biomass is still massive. Poor taxonomic diversity (7-16 sp/m²) and poor functional diversity in C:S ratio suggest that more intensive management should be applied on the field to decrease soil fertility level, and after that, additional seed sowing of herb mixture could be considered to improve biodiversity in Two Ponds field.

Phosphorus levels	Not known. It had an original test in 2011/12, and might have also had some arable run off from the adjacent field. Would be good to know whether it has dropped from above P index 2
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Soil profiles

Commented [E2]: Would like a soil sample from Two Ponds Field (woops, I didn't tell Irina that – my apologies).

	<p>Soil at quadrat 63</p> <p><i>A horizon</i> 0-10 silty loam, dark-brown 10-20 – transition to clay loam</p> <p><i>B horizon</i> 20-60 – light brown clay loam, plenty of organic matter, remains of the thick roots? 60 – iron appears in the profile 60-120 – light-brown silty clay loam with iron, organic matter plentiful down to the bottom of the profile, 3% of small gravel.</p>
<p>Site manager aspirations/objectives</p>	
<p>Wildflower meadows are a long term aim for The Earth Trust here. The River of Life Project (2) is going to create ponds and backwater channels in areas that are botanically less diverse. The Trust are not sure about re-seeding these areas, might see what comes up naturally. They are wetter meadows.</p>	
<p>Management recommendations</p>	
<p>A double hay cut could be recommended for next three years to reduce the vigour of the grasses and provide herbs and finer species of grasses with an opportunity to establish themselves in the community.</p>	

The Earth Trust						
	Two Pond Field		The Waterboard		Ferry Field	
	2017	2021	2017	2021 (small field)	2017	2021
Ellenberg F (moisture tolerance)	5.38	5.42	5.2	5.44	4.96	5.1
Ellenberg N (fertility)	6.18	6.2	5.24	5.78	5.2	5.2
Ellenberg R (Reaction)	6.04	6.7	6.28	7	6.4	6.62
Species/quadrat (mean and range /1 m x 1 m)	13 (12-14)	11.7 (9-16)	17 (15-19)	11.6 (10-14)	21 (16-25)	25 (21-30)

NVC (top 2 MAVIS subcommunities)	MG7D	MG9	MG7D	MG4c	MG4a	MG4a
	MG7	MG1	MG4v2	MG9	MG4v2	MG4b

Measure	Score of success/progress				
	1 Failure	2	3	4	5 Success
Average scores from five botanical quadrats per field. Calculated in MAVIS					
Species richness	<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