



National Trust Payment for Outcomes Trial Soil Health





National Trust Payment for Outcomes Trial

- 5 tenant farms in Yorkshire Dales
- Payments made according to outcomes
- Soil health and pollinators are the focus
- NFM project with iCASP



Soil health: the first option for NFM





Soil health and flooding

- Well-structured soil - key to flood attenuation;
- Soils store approx 130 trillion litres of water – more than all lakes and rivers combined;
- Important carbon store;
- Damaged soils – cost £233m per year to flood events;
- Compaction – reduction of ability of soil to hold water;
- Soil erosion leads to flooding of properties, roads.



Visual assessment

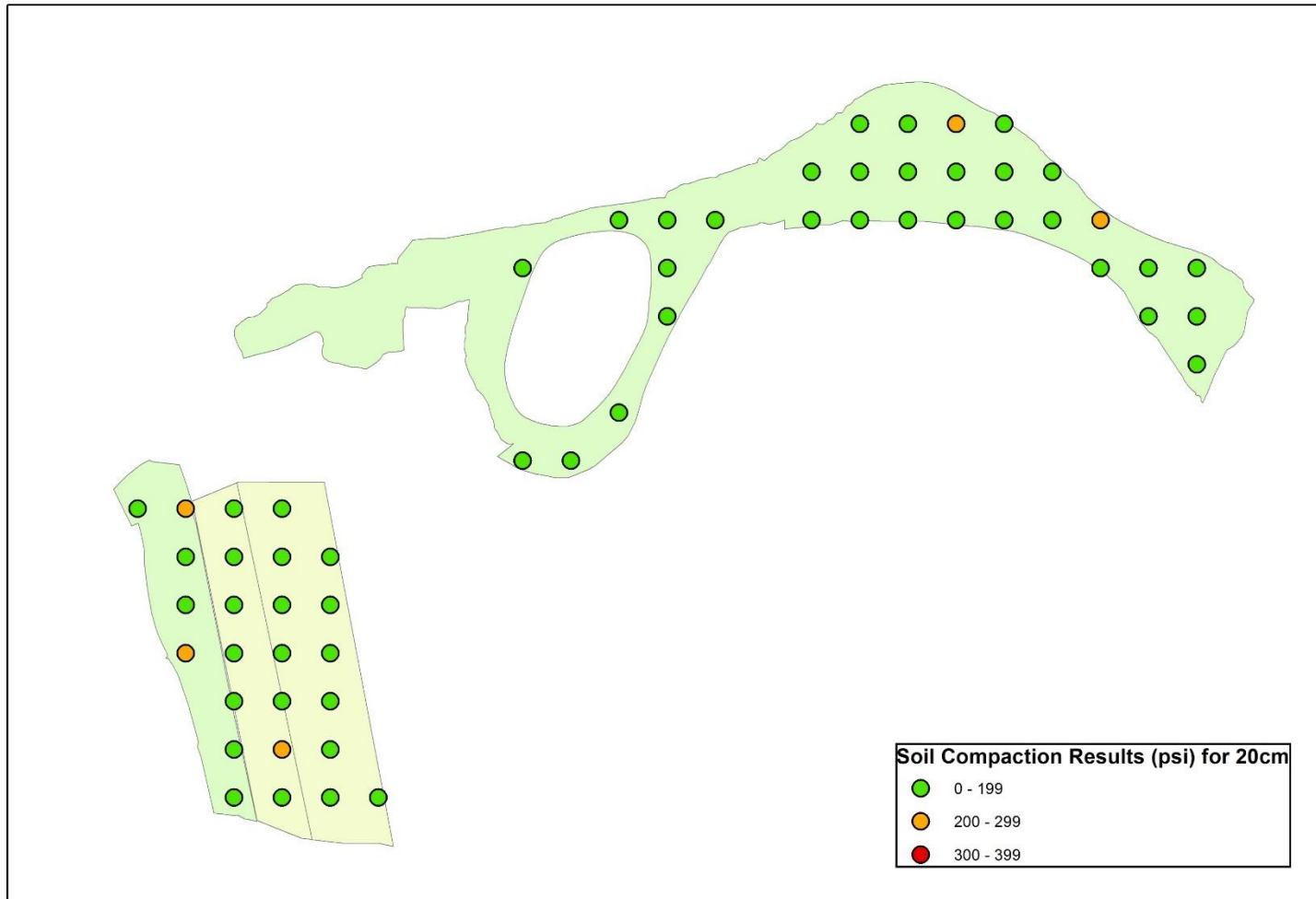
Features	Good	5	Moderate	3	Poor	-1
Sward cover	No break in sward cover		Limited breaks in sward e.g. in gateways		Frequent breaks. Surface capping evident	
Wheelings	Rarely seen		Wheelings visible, but limited damage.		Wheelings across majority of field, obvious damage	
Poaching	None seen		Light poaching e.g. gateways, troughs		Widespread or heavily concentrated damage in certain areas of field	
Weeds	Rarely seen		Limited to wall sides and discrete areas		Scattered weeds widespread. Rushes appearing in meadows	
Legumes eg clovers	Throughout - many areas flowering		Seen in sward but not flowering		Not seen or very rarely seen	
Standing water	Field free draining, no sign of standing water		Limited to gateway areas and track ways		Standing water across > 30% of field, waterlogged stress - red tinge to tips of leaves, scorch marks from livestock urine	
Supplementary feeding sites	Rotated regularly, no damage visible from winter/spring feeding		Rotated regularly with limited poaching damage seen in spring		Site not rotated, severe poaching damage to sward.	

Features	Scoring
Soil readily crumbles between fingers	5 for each feature
Highly porous	
Many well distributed roots that penetrate to spade depth	
Sweet earthy smell	
Small, round aggregates	
Dark coloured top soil	
No compacted layer	
10 – 15 worms	
pH of 6.0 – 6.2	
Aggregates compact and difficult to pull apart	-1 for each feature
Very few pores or air space	
Roots confined to the surface or clustered down large pores or cracks	
Strong sulphur smell (i.e. bad eggs)	
Aggregates are large and angular (>10cm)	
Soil has a grey colour with red/orange mottling	
Severe compaction evident – very firm / hard layer with no structure	
< 5 worms	
pH of <5.5	



Soil compaction survey

PFO Hudswell Woods Soil Compaction Survey Results Map for 20cm





Payments

Visual
assessment

Total score	Soil condition
<5	Poor
5-15	Moderate
16-25	Good
26-35	Excellent

Structural
assessment

Total score	Soil condition
-9 -15	Poor
15-25	Moderate
26-35	Good
36-45	Excellent

Payment bands

Total Score	Payment band	Rate(£/Ha)
<25	1	15
25-44	2	35
46-65	3	45
66-80	4	55

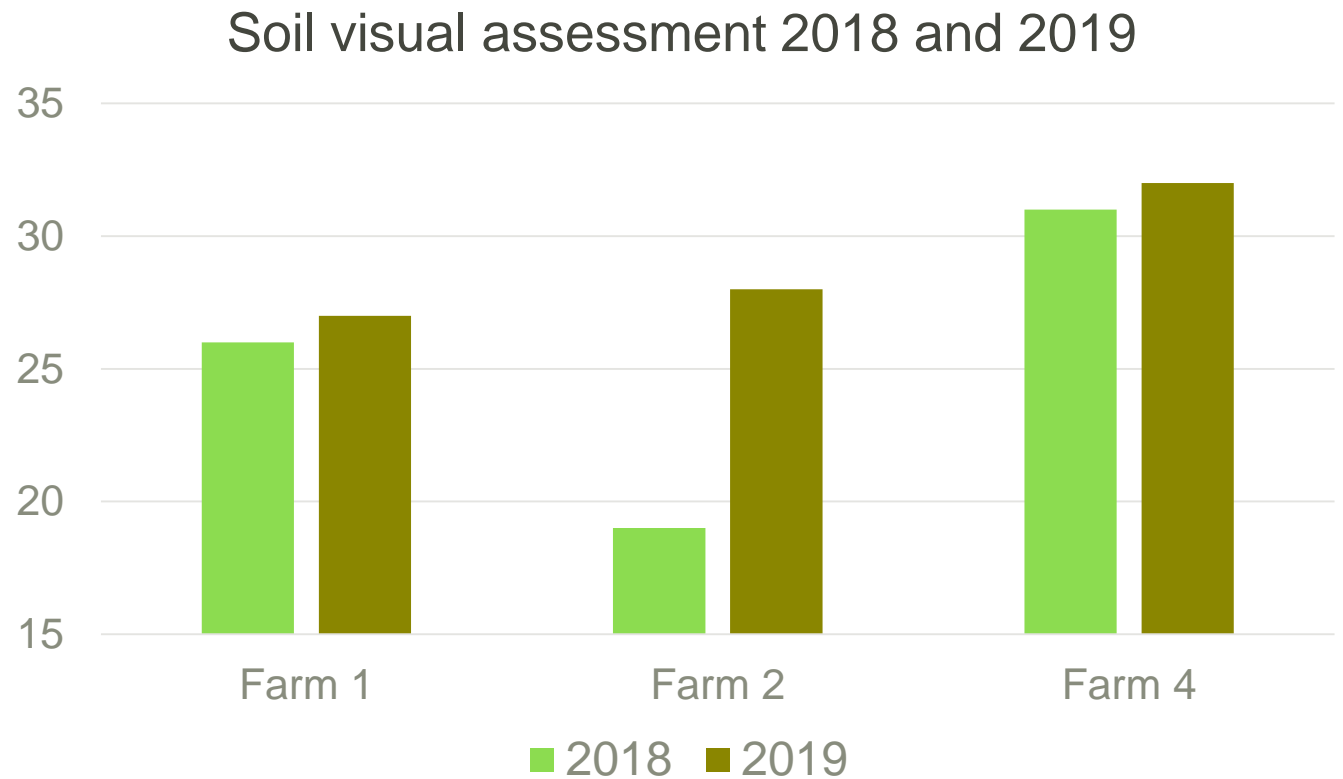


Results to date

Farm	2019 Visual score	Structural score	Payment band
1	27	34	3
2	28	34	3
3	32	38	4
4	32	36	4
5	30	40	4
Max score	35	45	



Results to date





Potential for influencing future funding

- Demonstrate value of this approach to payments;
- Share experiences and findings of trial;
- Report to policy/decision makers;
- Defra Test – and potentially Trial