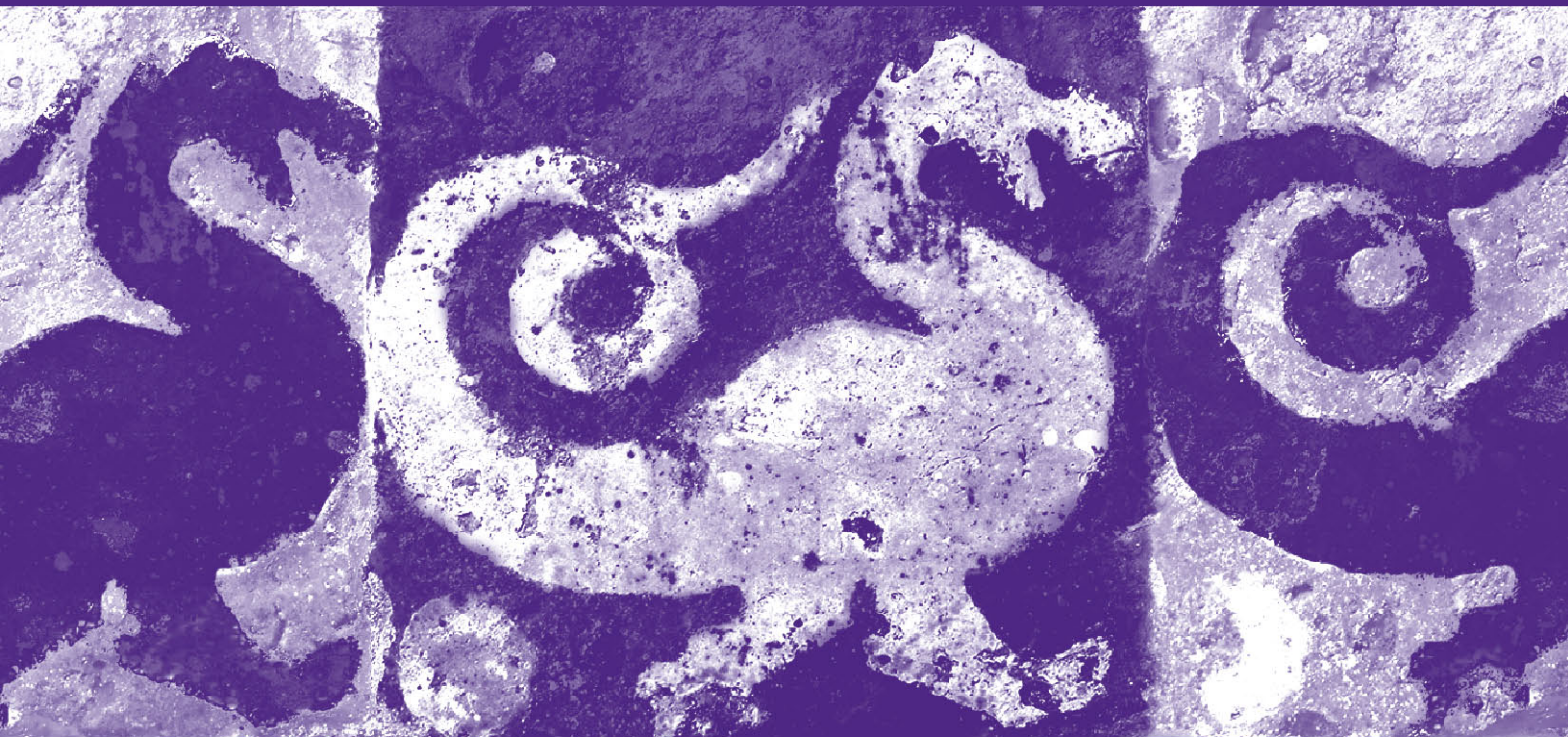


COSMIC+
RISK ASSESSMENT OF
ARCHAEOLOGICAL SITES NEAR
WICK AND CROPTHORNE,
WORCESTERSHIRE



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Darren Miller

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INVESTOR IN PEOPLE

Project 3409
Report 1767

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COSMIC+ Risk assessment of archaeological sites near Wick and Crophorne, Worcestershire

Darren Miller

1. Background

1.1 Sites at risk

This report considers the risk of cultivation and related factors to known archaeological sites in fields near Wick and Crophorne, farmed by Mr Tom Meikle. It is based on a risk assessment model initially developed for English Nature by the Oxford Archaeological Unit (COSMIC; OAU 2006) and further developed by Worcestershire Historic Environment and Archaeology Service for Natural England (COSMIC+: WHEAS 2009).

The assessment is intended to inform a management plan and an application for Higher Level Stewardship. It covers six fields in which archaeological sites were already known from cropmarks or other evidence (Figure 1; see appendix for field numbers, site codes, and brief descriptions). All of the sites had been noted in a previous Farm Environment Plan (WHEAS 2007). Most of them were considered to be of high risk of erosion (truncation and reworking of deposits). The main aims of the project were to define the risk, in each case; to identify the factors that cause and prevent erosion; and to recommend appropriate management options.

1.2 Current management

The six fields are all in continuous cultivation. In the five fields near Wick (Wick Grange), cereals, beans, and vegetables are grown in flexible rotations. In the field near Crophorne, wheat is grown with break crops of millet or beans. Most fields are ploughed every year to a depth of seven or eight inches, but some are cultivated more deeply, using an Imants spading machine, or less deeply, using a plough or tine cultivator. Leeks and salad onions are picked by hand; the other crops are harvested with a combine harvester. All the fields are subsoiled, but not frequently. They do not require frequent drainage work. All these factors are relevant to the risk assessment, as are intrinsic (topographical) factors and archaeological factors.

1.3 Risk assessment

The assessment proceeded in six stages broadly following a detailed project design produced for the holding (WHEAS 2009, 8-19).

The first stage was a review of the Farm Environment Plan and the information on which it was based.

The second stage was an interview with Mr Meikle, who provided detailed information on the fields and their management.

The third stage involved a walkover survey and test-pitting. This fieldwork provided consistent data on slopes, soil types, and depths of cultivation.

The fourth stage involved additional fieldwork. In three fields, the evidence of the cropmarks was supplemented by geophysical surveying. In each field, the results were tested by excavating small trenches.

The information was then assessed, using a modified version of the original COSMIC scoring model. For each site, the likelihood of erosion was established by scoring a range of

management and intrinsic factors. The survival, quality, and significance of each site were established by considering the evidence and current research frameworks. The total scores for each set of factors were weighted to acknowledge particular combinations. Final risk scores were calculated and related to broader risk levels.

Finally, the results were checked and reviewed to identify appropriate management options.

2. Summary of results

The results are summarised below. The detailed results are presented in the appendix, except for the results of the geophysical survey. Information relating to each field is presented together, for ease of reference. Each field is shown on a large-scale plan. Each plan shows the best available plot of the cropmarks and the location of test pits (exaggerating their size). Where appropriate, the plans also show geophysical survey plots and sample trenches. In addition, for each field there is a sheet summarising the results of the walkover survey and test-pitting; an annotated photograph of a typical test pit; and an assessment sheet, showing how each site was scored. Where sample trenches were excavated, there is also a table and at least one photograph.

The main technical terms used below, and in the appendix, are defined and explained in section 6.

2.1 Sites at high and moderate risk

Sites in Big Field, Charford, and Big Seeds at Wick Grange are at high risk, but only when the fields are cultivated with the Imants (Table 1; Figure 2). Another site in Blackhurst near Cropthorne is at moderate risk due to a combination of ploughing and site intrinsic factors. According to the COSMIC+ model, sites at high and moderate risk should be managed in a way that prevents or militates against erosion.

Field number	Field name	Final risk score	Serious	High	Moderate	Low	Minimal
			60+	50-59	40-49	30-39	0-29
		Imants			Plough		
2088	Big Field	55.5			31		
5763	Charford	57.3			32.8		
6942	Big Seeds	53.5			29		
6270	Blackhurst	n/a			40.5		

Table 1: Sites at high and moderate risk

2.1.1 Big Field

Cropmarks on HER photographs indicate four enclosures, apparently of prehistoric date. Mr Meikle has also found several prehistoric flints and sherds of Roman pottery across this area.

Two of the enclosures were selected for geophysical surveying and sample trenching. In one case (WSM 34642), the cropmarks suggest a horseshoe-shaped enclosure and a large pit outside it to the north-east. A geophysical survey grid was located to cover part of the enclosure and the pit. Anomalies were found indicating a straight ditch extending across the

grid, two discrete length of ditch, and five small pits. At the time, the anomalies seemed to bear no relationship to the cropmarks. The linear anomaly was investigated and proved to represent a post-medieval ditch. However, after the fieldwork, it was realised that the plot of the cropmarks was inaccurate, and that the curving anomaly represented the ditch of the horseshoe-shaped enclosure. In retrospect, it would have been better to have exposed this ditch or one of the pits in the sample trench. Nevertheless it is clear that the site exists and is more complex than the cropmarks suggest.

In the case of the second enclosure (WSM 34411), the cropmark suggests a small rectangular enclosure with rounded corners. A geophysical survey grid was located directly over the cropmark, covering it entirely. Several anomalies were identified but none of them corresponded to the cropmark. A sample trench was excavated across the line of the cropmark but no features were exposed. These negative results are puzzling as the cropmark is reasonably clear and it is unlikely that the ditch it suggests has been ploughed out since the photographs were taken (*cf* the correspondence between the cropmarks and anomalies described above and the survival of the post-medieval ditch). At present, there is no obvious explanation for this discrepancy. It is just possible that the ditch survives but is somehow unresponsive to resistivity, and that the sample trench was not long enough to intersect it, but neither explanation is convincing.

Nevertheless, taking all the evidence into account, it is clear that significant deposits exist across Big Field. It is also likely that these deposits are at risk of erosion from Imants cultivation, though not from conventional ploughing. The test pits showed that the Imants operates at a depth of about 35cm (fourteen inches), and has truncated the subsoil to different degrees. This being so, it has probably truncated significant deposits and will do so in the future, if soil is lost during harvesting or through wind or water erosion. In contrast, it seems that the last ploughing was limited to 20cm (eight inches) and left a buffer of 18cm (seven inches). Ploughing to this depth presents no risk of erosion, and the overall risk in these circumstances is low.

2.1.2 **Charford**

The HER paper overlay shows a concentration of cropmarks near the centre of Charford. The drawing is schematic and the quality of the interpretation is uncertain, as the photograph cited in the HER record is held in the NMR and has not been checked. However, as the photograph was taken by an expert flier (WA Baker) the drawing can be accepted for present purposes as secondary evidence of a prehistoric or Roman settlement.

Only one test pit was excavated, and no additional fieldwork was undertaken. The risk assessment is therefore based on limited evidence, but the test pit showed that Imants cultivation is reaching if not truncating the subsoil. It therefore follows that significant deposits are at risk of erosion. Here again, though, there is little or no risk from ploughing. The last ploughing to a depth of 18cm (seven inches) left a buffer of 11cm (four and a quarter inches).

2.1.3 **Big Seeds**

The HER overlay shows another concentration of cropmarks on the east side of Big Seeds. Here again, the drawing is schematic and the quality of interpretation is uncertain. In this case, the corresponding record does not cite any photographic source. Nevertheless, the drawing is likely to indicate a site of some kind, if not the prehistoric settlement recorded in the HER. There may also be a site to the east, indicated by a scatter of Roman pottery that continues into Barracks B. The three test-pits excavated in Big Seeds showed around 35cm (14 inches) of ploughsoil and different depths of subsoil. This suggests that Imants cultivation is eroding, or could erode, significant deposits. In contrast, the last ploughing to a depth of 16cm (six inches) inches left a buffer of 18cm (seven inches).

2.1.4 **Blackhurst**

The site in Blackhurst near Cropthorne is at moderate risk (Figure 2). As described in the FEP, the site was first noted from surface finds scatters by Mr Meikle and was fieldwalked by the Worcestershire Young Archaeologists Group in 2007, the latter recording a dense concentration of Roman material across the area. COSMIC+ trenching here has provided evidence for two phases of Roman ditches and substantial (if truncated) stone walls. The test pit data suggests that the field is ploughed to a depth of around 18cm (seven inches), leaving an average buffer of 10cm (four inches). However, a wall exposed in trench 36 was only 25cm (10 inches) below the surface, implying a buffer of 5cm (2 inches) at best. This is not sustainable, especially as site intrinsic factors (light soils and a gentle slope) increase the risk of soil loss though wind and water erosion.

2.2 **Sites at low and minimal risk**

As shown in Table 1, the sites in Big Field and Charford are at low risk when ploughed, while the site in Big Seeds is at minimal risk. The sites in Barracks A and Barracks B are also at low risk. In both cases, the risk reflects a combination of conventional ploughing, sustainable buffers, and deposits of limited significance.

2.2.1 **Barracks A**

The NMR digital overlay shows parallel east-west cropmarks crossing the east half of Barracks A and the south half of Barracks B. The cropmarks were originally thought to represent two cursuses or cursūs, i.e. Neolithic monuments defined by parallel ditches and banks. As a result, the area crossed by the cropmarks was scheduled in 1987, although only Barracks A is shown as scheduled on current English Heritage maps, along with Young Yard to the west (an apparent mistake). However, from a current perspective, the cropmarks are more likely to represent parallel trackways defined by drainage ditches. As such, they can be regarded as being of local, not county or regional significance. The HER paper overlay also shows several short linear and curvilinear cropmarks that may represent small enclosures.

The test pits showed that the last ploughing to a depth of 0.21m (eight inches) left a buffer of between 0.08m and 0.19m (three inches to seven and a half inches). There is a slight risk that continued ploughing combined with soil loss might affect deposits along the east side of the field where the lowest buffers were recorded. The risk of soil loss is low, however, and combines with other risk factors to give a low final score.

2.2.2 **Barracks B**

HER photographs show what was originally thought to be another cursus in the south half of Barracks B. However, no trace of it was found in geophysical survey grid 31 and 32 or in sample trenches 31-33. As a result, it must be concluded that the cursus does not exist, and that the cropmarks represent an unusual and misleading natural phenomenon. Nevertheless, there may still be significant deposits in the north half of the field, where Mr Meikle has found a Neolithic axehead and Roman pottery.

The test-pits showed that the last ploughing to an average depth of 0.17m (six and a half inches) left a buffer of about 0.13m (five inches). This is sustainable, although soil in the south of the field has been lost and may be lost again by water erosion in circumstances where heavy rainfall coincides with periods in the cultivation cycle when the soil surface is exposed.

3. Management options

This section considers how sites at high and moderate risk might be protected by changes in management. It is not concerned with sites at low and minimal risk. Options available through Higher Level Stewardship are noted with reference to their codes.

3.1.1 Big Field, Charford, and Big Seeds

The simplest way of protecting the sites in Big Field, Charford, and Big Seeds would be to restrict cultivation to conventional ploughing. As discussed above, the risk from ploughing is negligible by comparison with the risk from Imants cultivation. According to the test-pit data, both Big Field and Big Seeds can safely be ploughed to a depth of 25cm (ten inches). In both fields, this would leave a buffer of at least 10cm (four inches). The safe limit in Charford is less certain as only one test-pit was excavated in the south-east corner. However, it seems that ploughing to a depth of 18cm (seven inches) would always leave an adequate buffer.

3.1.2 Blackhurst

The situation in Blackhurst is different, as the risk here comes from conventional ploughing of silty/sandy soils on a gentle slope. At present, ploughing to a depth of 18cm (seven inches) leaves a buffer of around 10cm (four inches). However, in view of the risk of soil loss through water erosion, and the obvious significance of the site, it would be worthwhile considering a change to reduced depth, non-inversion tillage (HD3) or reversion to grassland (HD2 or HD7). Another option, already noted in the FEP, would be the creation of a wildflower meadow (HK8). However, only the southern half of the field need be put down to grass. The plot of Roman pottery collected by fieldwalking in 2007 suggests that most deposits are concentrated there. Indeed, there is no reason why the northern half of the field (c. 5.46 hectares) should not continue to be ploughed.

Field number	Field name	Main risk factors	Management options	Risk after mitigation
2088	Big Field	Deep cultivation with Imants leaving shallow or no buffer; occasional subsoiling; significant deposits	Restrict cultivation to conventional ploughing (up to 25cm or ten inches)	Low
5763	Charford			
6942	Big Seeds			
6270	Blackhurst	Conventional ploughing leaving shallow buffer; gentle slope; silty/sandy soils; occasional subsoiling; highly significant deposits	Establish crops by reduced-depth, non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Reversion of southern half of field to protect main concentration of deposits (HD2 or HD7)	No risk
			Regeneration of southern half of field to create species-rich, semi-natural grassland	No risk

Table 2: Summary of risk factors and management options for sites at high and moderate risk

4. Acknowledgements

Tom Meikle commissioned the project with the support of Natural England. He also provided information at interview and throughout the fieldwork.

Natural England: The project was initiated and overseen by Jez Bretherton and Helen Trapp.

English Heritage: the sample trenching in Blackhurst and Barracks B was monitored by the West Midlands Regional Inspector, Tony Fleming.

Stratascan: The survey team was managed and led by Simon Stowe. It included Allen Wright, Mel Biggs, Peter Barker, and Amanda Dawson.

WHEAS: The project was managed by Robin Jackson and led by Darren Miller. Information on fields and current management was recorded digitally by Ruth Humphreys. The fieldwork team comprised Darren Miller, Supervisor Adam Lee and Archaeologists Richard Bradley, Tegan Cole, Tim Cornah, Chris Gibbs, Christine Elgy and Mike Nicholson. The sample trenches were excavated for WHEAS by Arthur Redman. Most of the post-fieldwork analysis was undertaken by Darren Miller, Adam Lee, and Richard Bradley. The illustrations were produced by Richard Bradley.

5. References

OAU, 2006 *Conservation of Scheduled Monuments in Cultivation (COSMIC) for English Heritage and Defra*, Oxford Archaeological Unit, unpublished document dated June 2006

WHEAS, 2009 *Project Design. Erosion and Archaeology Risk Assessment for use in support of Higher Level Stewardship Applications (Cosmic+): Kemerton Estate, Worcestershire*, Worcestershire Historic Environment and Archaeology Service, unpublished document dated 11th November 2009

WHEAS, 2007 *Farm Environment Plan: report for features of Historic Environmental potential*, Worcestershire Historic Environment and Archaeology Service unpublished document, dated 22nd November 2007

6. Glossary and notes

Buffer: Soil or soils between *current cultivation* and known or inferred archaeological deposits. The buffers identified in this assessment consist of *former cultivation* but, in other contexts, buffers can include alluvium, colluvium, or made ground. In the COSMIC+ model, buffers are defined as shallow (less than 10cm), moderate (10-15cm), deep (15-25cm) or very deep (more than 25cm). The field summary sheets identify the minimum buffer in each field but also indicate both the range of values and the average (i.e. mean) value. Naturally, the depth of a buffer will vary according to the depth of cultivation (e.g. a buffer may be 20cm after ploughing for cereals but only 10cm after deeper ploughing for salad onions or potatoes). Buffers can also decrease as a result of soil loss through wind erosion, water erosion, and harvesting.

Current cultivation: Soil inverted or reworked by the last cultivation. It can be identified in the field and distinguished from *former cultivation* on the basis of colour, texture, and compaction.

Former cultivation: Soil beneath *current cultivation*, evidently inverted or reworked, but not by the last cultivation.

Subsoil: Archaeological term for soil above natural, formed by a combination of weathering and leaching. A lack of subsoil between *former cultivation* and *natural* indicates deep ploughing at some time in the past and constitutes evidence of *erosion*.

Natural: Archaeological term for parent material. At Wick Grange, the natural is sand and gravel. In Blackhurst near Cropthorne, similar deposits are overlain in places by alluvium.

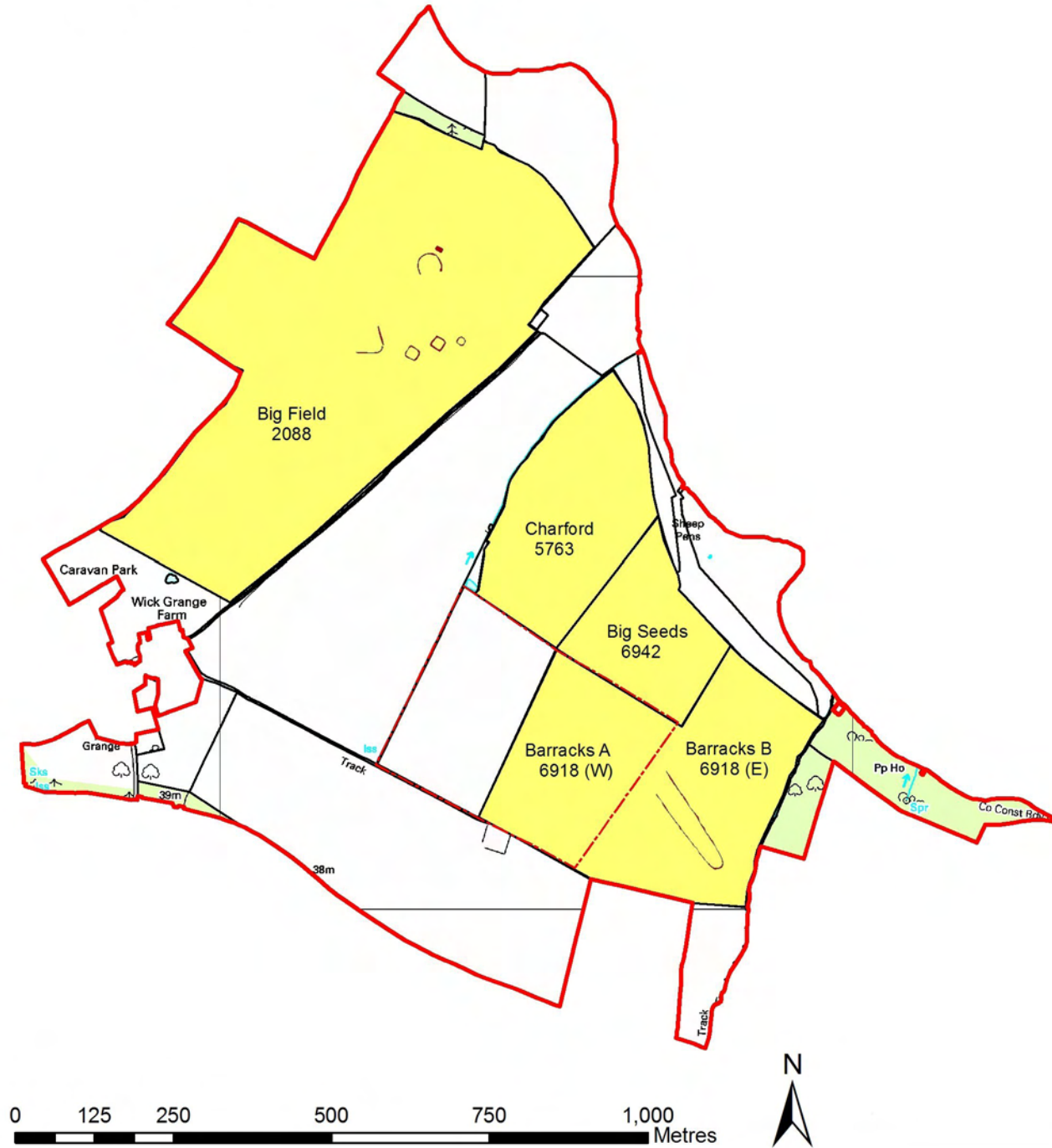
Slope, soil groups, and water erosion: For each field, the model use slope categories and soil groups along with a figure for average annual rainfall to assess the risk of soil loss through water erosion. Slopes are categorised as steep (more than 7°), moderate (3-7°), or gentle (2-3°) and there is a separate category for level ground (less than 2°). In this connection, similar soils are classified as light (sand, loamy sand, sandy loam, sandy silt loam, silt loam); moderate (sandy clay loam, clay loam, silty clay loam, and silty clay); or heavy (silty clay and clay).

Soil types and wind erosion: In assessing the risk of soil loss through wind erosion, the model identifies five different soil groups, namely peats, silts/sands (sand, loamy sand, silty loam), loams (sandy loam, sandy silt loam, sand clay loam, clay loam, silty clay loam), sandy clay/silty clay and clay.

Archaeological deposits: material remains and traces of past human activity, often associated with artefacts and plant or animal remains. The term covers both positive features, such as walls and banks, and negative features, such as ditches and pits.

Erosion, loss of information and significance: When used of archaeological deposits, the term erosion signifies truncation or reworking as a result of cultivation (mainly ploughing and other kinds of tillage, but also subsoiling and drainage work). The erosion of deposits constitutes a loss of information. The extent of the loss is proportionate to the significance of the deposits. In the model, significance is assessed in terms of the survival and character of deposits and their relevance to current research agendas. However, this assessment does not negate the wider significance that some sites might have if they were known to exist (e.g. as personal or communal points of reference to a distant past).

Figure 1: Distribution of sites



Legend

- Cropmark interpretation
- SAM
- Fields investigated

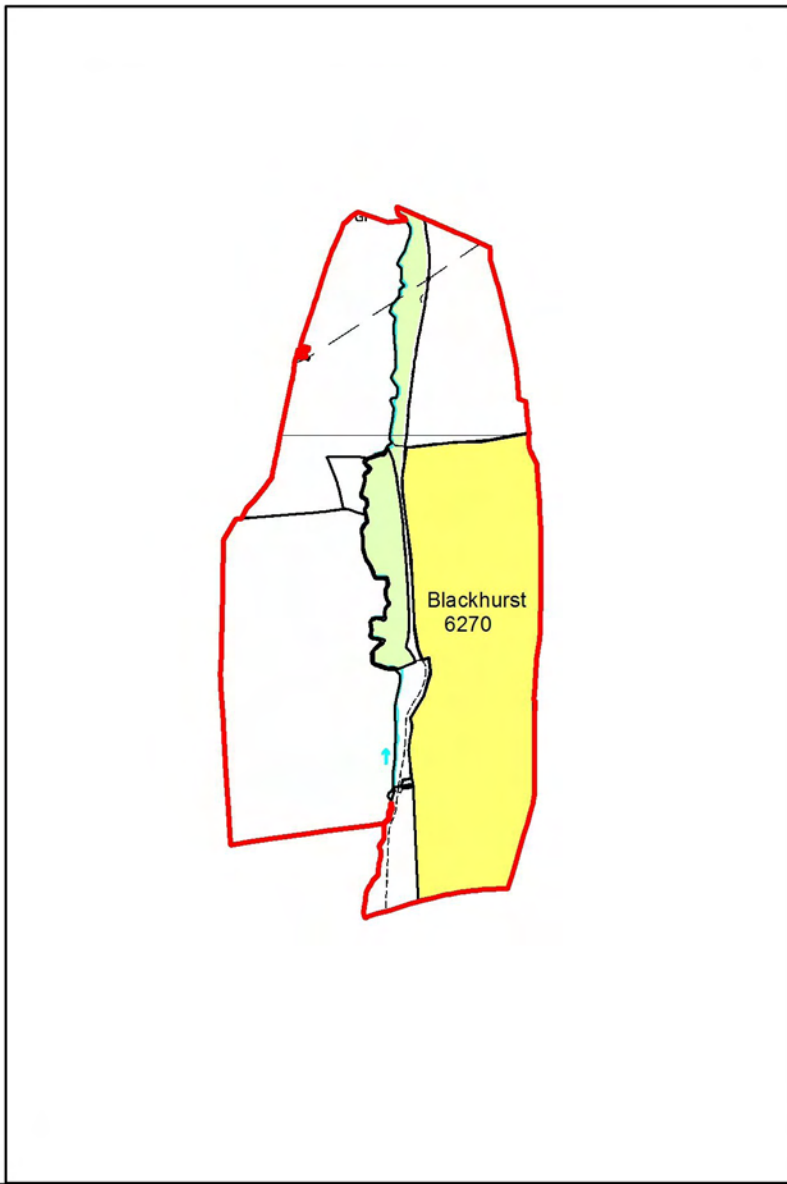
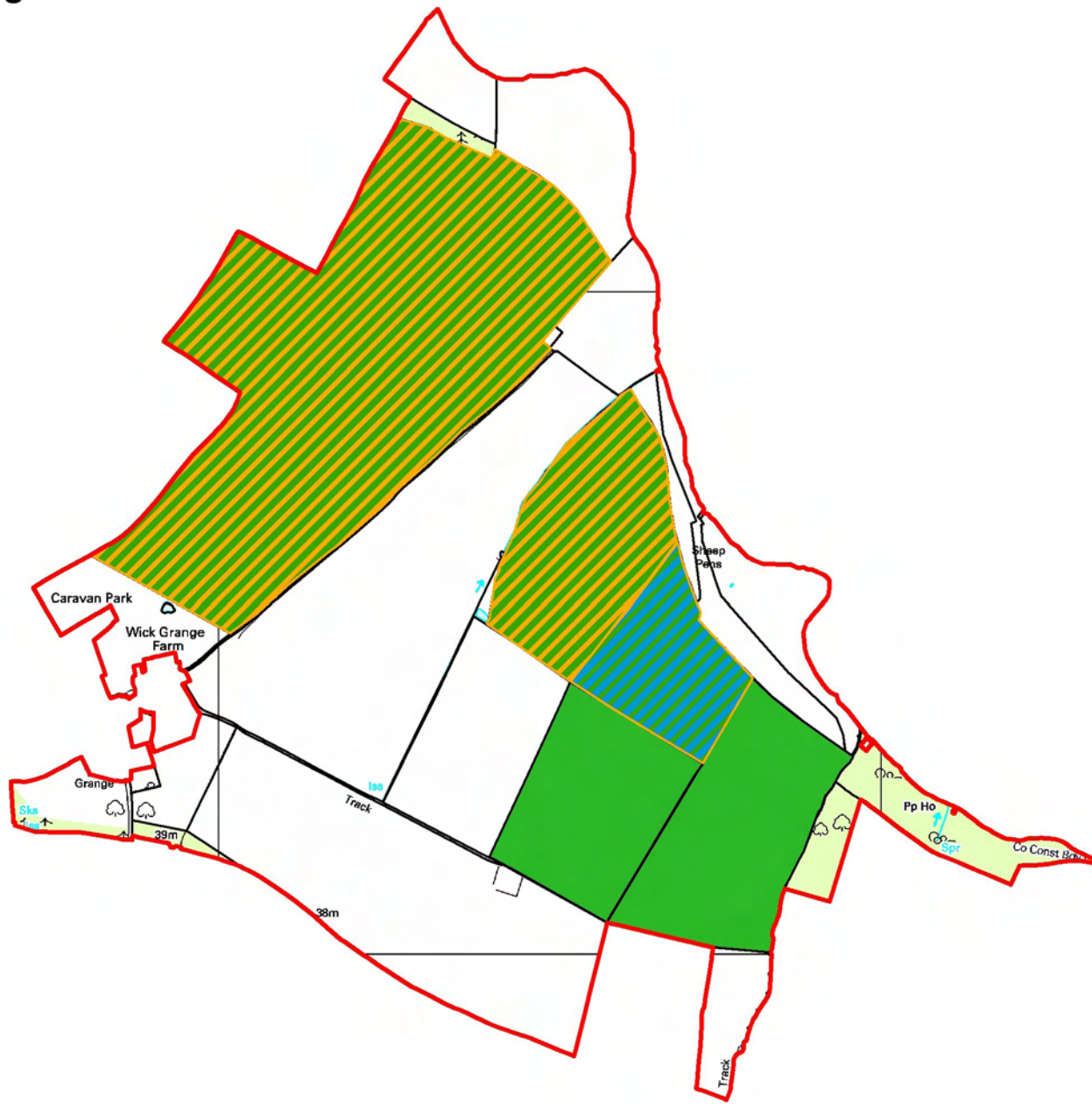


Figure 2: Risk levels



Legend

- Minimal risk
- Minimal/high risk (depending on cultivation method)
- Low risk
- Low/high risk (depending on cultivation method)
- Moderate risk
- High risk



Appendix

Summary of archaeological sites	1-2
Data on individual sites and fields.....	3-49
2088 Big Field.....	3
5763 Charford.....	12
6270 Blackhurst.....	18
6918 (W) Barracks A	28
6918 (E) Barracks B	34
6942 Big Seeds	44

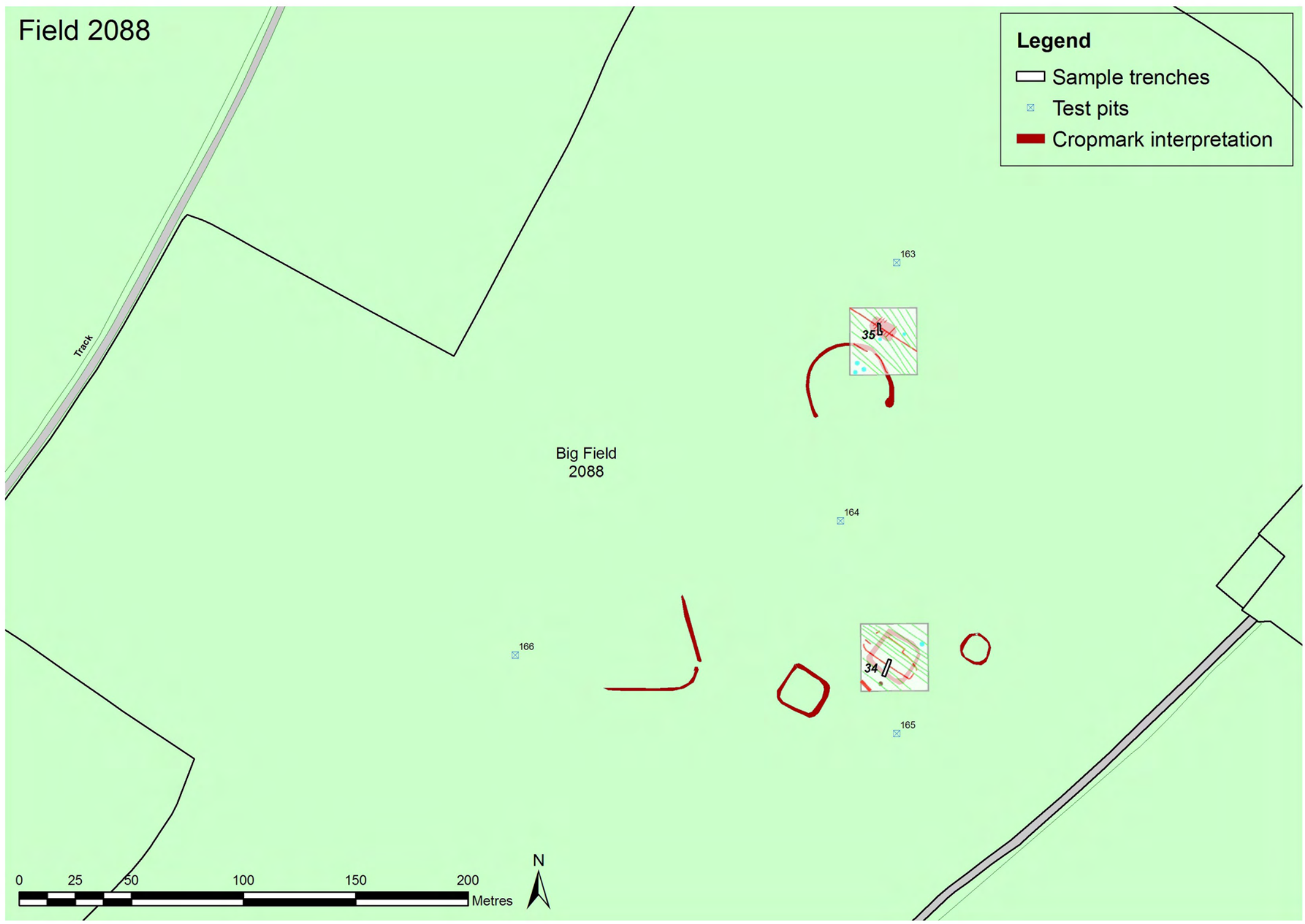
Field number	Field name	HER number	Grid reference	Monument type	Documentation before fieldwork	Results of fieldwork
2088	Big Field	WSM34411	SO9730 4587	Iron Age/Roman enclosure	Cropmarks on HER photographs indicate three small enclosures. Two of the enclosures are square with rounded corners; the third is more sub-circular. They are equidistant and their sides are oriented on the same axes.	The middle enclosure was not confirmed by geophysical survey grid 33, nor by sample trench 34.
		WSM34412	SO9722 4590	Iron Age/Roman enclosure	Cropmarks on HER photographs indicate two sides of a square or rectangular enclosure.	n/a
		WSM34642	SO9733 2460	Iron Age/Roman enclosure	Cropmarks on HER photographs indicate a horseshoe-shaped enclosure, open to the south, and a pit outside it to the north.	Part of the enclosure but not the pit was confirmed by geophysical survey in grid 34. A linear anomaly was targeted in sample trench 35. It represented a post-medieval field ditch.
5763	Charford	WSM11258	SO9765 4545	Roman settlement	Roman pottery found in this field may indicate the same settlement represented by cropmarks in Big Seeds to the east.	n/a
6270	Black Hurst	WSM07692	SO9961 2437	Roman settlement	Roman settlement identified from extensive scatter of artefacts and discrete scatters of worked limestone. Finds made before the assessment included including large quantities of Severn Valley ware, some Samian ware, nails, a coin of the Empress Crispina (AD 177) and the broken top half of a rotary quern.	Geophysical survey grids 35 and 36 targeted one of the stone scatters. Anomalies were found suggesting a grid-like pattern of small enclosures. Sample trench 36 exposed ditches representing two phases of enclosure. The trench also exposed a wall foundation of roughly-hewn limestone and a pile or stack of limestone rubble. A small assemblage of Roman pottery and animal bone was recovered.

Field number	Field name	HER number	Grid reference	Monument type	Documentation before fieldwork	Results of fieldwork
6918 (W)	Barracks A	WSM20691	SO9757 4519	Iron Age/Roman settlement	The overlay to the HER 1:10,560 map shows indistinct cropmarks of ditches cut by medieval or later furrows. They may represent part of an Iron Age or Roman settlement.	n/a
		WSM04554	SO9768 2451	Trackways	NMR plan of cropmarks shows ditches running east-west across the east side of Barracks A and the south half of Barracks B. They were thought represent two Neolithic cursūs, and the area is a Scheduled Ancient Monument (WT217).	No fieldwork was undertaken, but a review of the evidence suggests that the cropmarks are more likely to represent a sequence of tracks.
6918 (E)	Barracks B	WSM05585	SO9773 4513	Neolithic cursus	HER photographs show cropmarks indicating part of a Neolithic cursus extending to the north-west from a typically rounded end.	Geophysical survey in grids 31 and 32 did not confirm the cropmarks. Other cropmarks were targeted in sample trenches 31-33 but no ditches or other features were found.
		WSM04554	SO9768 4510	Trackways	NMR plan of cropmarks shows ditches running east-west across the east side of Barracks A and the south half of Barracks B. They were thought represent two Neolithic cursūs, and the area is a Scheduled Ancient Monument (WT217).	No fieldwork was undertaken, but a review of the evidence suggests that the cropmarks are more likely to represent a sequence of tracks.
			SO9780 4530	Roman settlement	Surface scatter of Roman artefacts extending into Big Seeds to the west.	n/a
			SO9780 4525	Findspot	Findspot of Neolithic stone axe.	n/a
6942	Big Seeds	WSM11258	SO9770 4530	Roman settlement	The overlay to the HER 1:10,560 map shows cropmarks indicating two or more enclosures. Roman artefacts have also been found in this field.	n/a

Field 2088

Legend

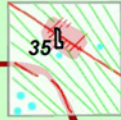
- Sample trenches
- Test pits
- Cropmark interpretation



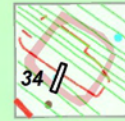
Track

Big Field
2088

163



164

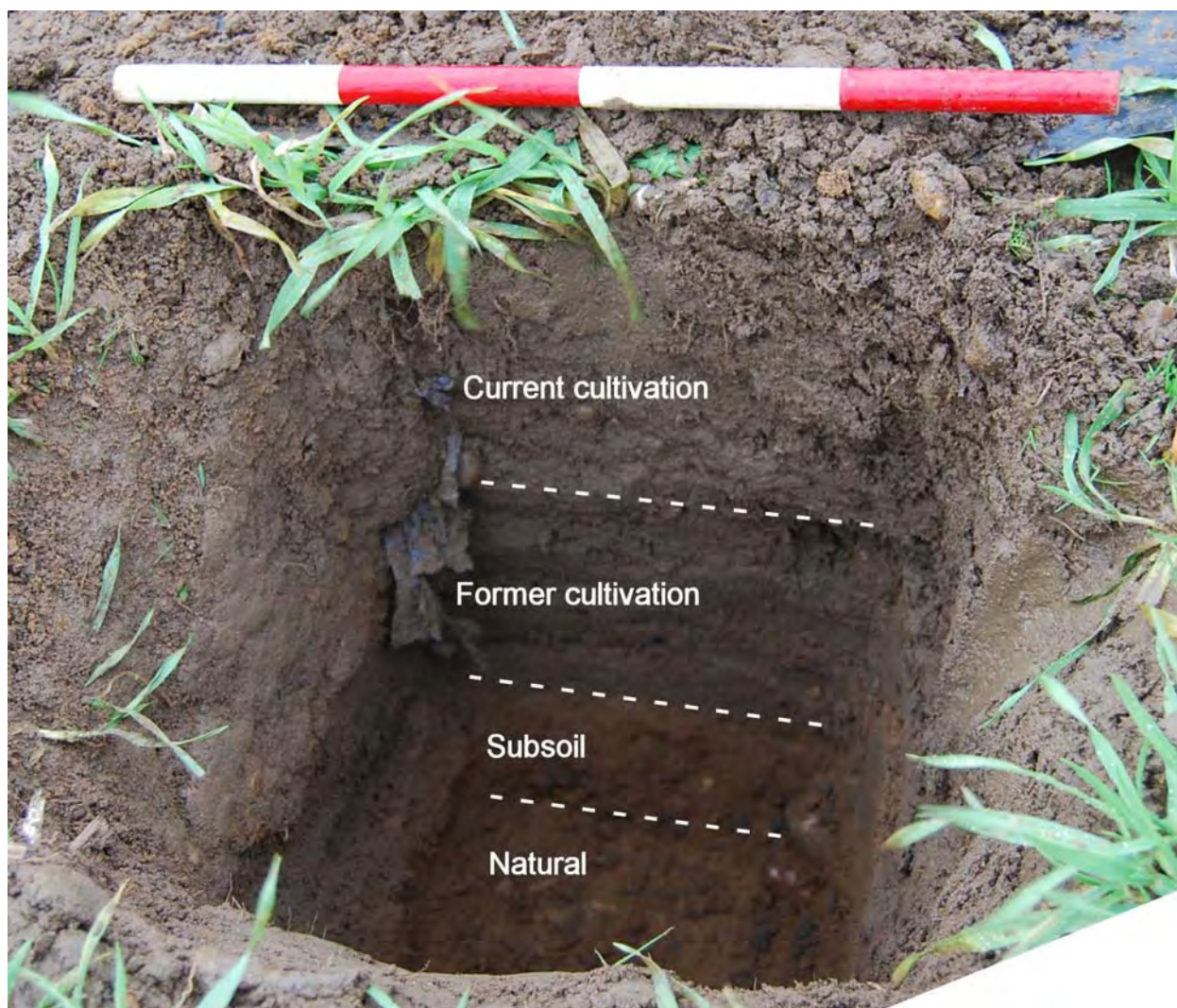


166

165



Field 2088: Big Field							
Test pits	163	164	165	166	Range		Average
					min	max	
Current cultivation	0.20	0.20	0.20	0.18	0.18	0.20	0.20
Former cultivation	0.15	0.15	0.23	0.20	0.15	0.23	0.18
Subsoil 1	0.25	>0.10	>0.05	0.10			
Subsoil 2	>0.10	n/a	n/a	Unex			
Natural	n/a	Unex	Unex	n/a			
Minimum buffer: 0.15							
Notes							
1) Test pits 163 and 166 with lower subsoil are located on a slight ridge running NE – SW across the northern half of the field.							
Slope: Level ground							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Silts/sands							



Test pit 166 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

2088

Field Name

Big Field

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A.....2 (5 with Imants) B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A.....3 (5 with Imants) B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						12 (17 with Imants)
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5 (2.5 with Imants)
Initial score multiplied by weighting						A18 (42.5 with Imants) B C

* Graded A-C according to quality of evidence

* Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion								
Average annual rainfall = 650mm								
	Steep slopes ($> 7^\circ$)		Moderate slopes ($3^\circ-7^\circ$)		Gentle slopes ($2^\circ-3^\circ$)		Level ground ($> 2^\circ$)	Score*
Soil group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....1 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil group	Peats	Sands/Silts	Loams	Sandy clays/silty clay	Clay		Score*	
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1		A.....4 B..... C.....	
Risk of soil loss during harvesting								
Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable/hand-picked crops			Score*		
	Serious Score 5	High Score 4	Medium Score 3			A.....3 B..... C.....		
Initial score						8		
Weighting	Any of above in grey shaded box = 2					1		
Initial score multiplied by weighting						A8 B..... C.....		

Archaeological factors						
Survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]	- Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits	-Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits	-Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits	-Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance	- Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters	A.....2 B C.....
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	A.....2 B C.....
Initial score						4
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1
Initial score multiplied by weighting						A ... B ...5 C ...

* Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	18 (42.5 with Imants)
Site intrinsic factors (out of 30)	8
Archaeological factors (out of 20)	5
Final risk score (out of 100)	31 (55.5 with Imants)

Risk levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk

Big Field (2088)

Trench 34

Maximum dimensions: Length: 8.20m Width: 1.55m Depth: 1.04m

Orientation: N – S

Context	Classification	Description	Depth below ground surface
3400	Ploughsoil	Loosely compacted mid greyish brown sandy silt with occasional small and medium sub-rounded stones.	0-0.17m
3401	Ploughsoil	Moderately compact mid greyish brown sandy silt with occasional small and medium sub-rounded stones. Wavy lower boundary produced by deep cultivation.	0.17-0.36m
3402	Natural	Loose mid reddish brown sand with frequent small gravels.	0.36-0.63m+

Trench 35

Maximum dimensions: Length: 5.00m Width: 1.55m Depth: 0.72m

Orientation: NW – SE

Context	Classification	Description	Depth below ground surface
3500	Ploughsoil	Loosely compacted mid greyish brown silt loam with occasional small to medium sub-rounded stones.	0-0.30m
3501	Ploughsoil	Loosely compacted slightly reddish brown silt loam with frequent small sub-rounded stones.	0.30-0.47m
3502	Subsoil	Moderately compact mid reddish brown silty sand with occasional small rounded stones and charcoal fragments.	0.47-0.66m
3503	Fill of 3504	Moderately compact mid brown silty sand with occasional small to medium sub-rounded stones and clay aggregates. Also one sherd of 18 th century pottery.	0.66-0.72m+
3504	Ditch	Linear, parallel-sided feature partially exposed and excavated in sondage. Aligned roughly north-west to south-east. Concave sides with gradual breaks of slope at top and base.	0.66-1.04m
3505	Subsoil	Loosely compacted mid greyish brown sandy silt with occasional small to medium sub-rounded stones. Cut by 3504.	0.66-1.04m
3506	Natural	Moderately compact mid brown silty sand with frequent small rounded stones.	0.72-1.04m+



Trench 34 facing south (1m scales)



Trench 35 facing south-west (1m scale)



Trench 35: east facing section of ditch 3504 (1m scale)

Fields 5763, 6942, 6918 (W) and 6918 (E)

Charford
5763

Big Seeds
6942

Barracks A
6918 (W)

Barracks B
6918 (E)

162

155

156

157

220

217

218

219

159

160

158

31

32

33

161

Legend

- Sample trenches
- Cropmark interpretation
- Test Pits
- SAM

0 25 50 100 150 200 Metres



Def

Def

Field 5763: Charford				
Test pits	162	Range		Average
		min	max	
Current cultivation	0.18			
Former cultivation	0.11			
Subsoil	0.16			
Natural	>0.05			
Minimum buffer: 0.11				
Slope: Level ground				
Soil group in relation to water erosion: Light				
Soil group in relation to wind erosion: Loams				



Test pit 162 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

5763

Field Name

Charford

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (16-25cm)	Very deep buffer (> 25cm)	A.....3 (5 with Imants) B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling with no subsoiling (< 10cm)	A.....2 (5 with Imants) B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						12 (17 with Imants)
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5 (2.5 with Imants)
Initial score multiplied by weighting						A18 (42.5 with Imants) B C

*Graded A-C according to quality of evidence

*Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion								
Average annual rainfall = 650mm								
	Steep slopes ($> 7^\circ$)		Moderate slopes ($3^\circ-7^\circ$)		Gentle slopes ($2^\circ-3^\circ$)		Level ground ($> 2^\circ$)	Score*
Soil group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....1 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil group	Peats	Sands/Silts	Loams	Sandy clays/silty clay	Clay		Score*	
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1		A.....3 B..... C.....	
Risk of loss during harvesting								
Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable/hand-picked crops			Score*		
	Serious Score 5	High Score 4	Medium Score 3			A.....3 B..... C.....		
Initial score						7		
Weighting	Any of above in grey shaded box = 2					1		
Initial score multiplied by weighting						A7 B..... C.....		

Archaeological factors						
Archaeological survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
<p>[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]</p>	<ul style="list-style-type: none"> - Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits 	<ul style="list-style-type: none"> -Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits 	<ul style="list-style-type: none"> -Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits 	<ul style="list-style-type: none"> -Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance 	<ul style="list-style-type: none"> - Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters 	<p>A..... B3 C.....</p>
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	<p>A..... B3 C.....</p>
Initial score						6
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1.3
Initial score multiplied by weighting						<p>A ... B ...7.8 C ...</p>

*Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	18 (42.5 with Imants)
Site intrinsic factors (out of 30)	7
Archaeological factors (out of 20)	7.8
Final risk score (out of 100)	32.8 (57.3 with Imants)

Risk levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk

Field 6270

Legend

- Sample trenches
- Test Pits

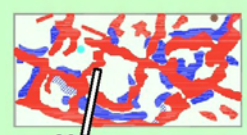
FB

167

Blackhurst
6270

33.4m

168



36

169

FB



The
Orchards

170



Pond

Track

Field 6270: Blackhurst							
Test pits	167	168	169	170	Range		Average
					min	max	
Current cultivation	0.16	0.26	0.17	0.20	0.16	0.20	0.18
Former cultivation	0.09	Unclear	0.11	0.10	0.09	0.11	0.10
Subsoil	0.05	None	None	0.18	0.00	0.18	0.06
Natural	>0.04	>0.09	>0.08	Unex			
Minimum buffer: 0.09							
Notes							
1) Test pit 168 did not show a clear distinction between upper and lower cultivation. The aggregated figure is not included in the average. There was also a feature in the base of the test pit.							
2) Roman and post-medieval pottery identified across the field. Patches of limestone rubble also noted, especially in the southern part of the field.							
Slope: Gentle slope							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Silts/sands							



Test pit 169 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

6270

Field Name

Blackhurst

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A.....4 B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A.....2 B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						13
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5
Initial score multiplied by weighting						A19.5 B C

* Graded A-C according to quality of evidence

* Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion								
Average annual rainfall = 650mm								
	Steep slopes (> 7°)		Moderate slopes (3°-7°)		Gentle slopes (2°-3°)		Level ground (> 2°)	Score*
Soil Group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....2 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil Group	Peats	Sands/Silts	Loams	Sandy clays/silty clay	Clay		Score*	
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1		A..... B.....4 C.....	
Risk of soil loss during harvesting								
Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable/hand-picked crops			Score*		
	Serious Score 5	High Score 4	Medium Score 3			A.....3 B..... C.....		
Initial score							9	
Weighting							1	
Initial score multiplied by weighting							A9 B..... C.....	

Archaeological factors						
Survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]	- Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits	-Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits	-Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits	-Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance	- Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters	A..... B4 C.....
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	A..... B4 C.....
Initial score						8
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1.5
Initial score multiplied by weighting						A ... B ...12 C ...

* Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	19.5
Site intrinsic factors (out of 30)	9
Archaeological factors (out of 20)	12
Final risk score (out of 100)	40.5

Risk levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk

Blackhurst (6270)

Trench 36

Maximum dimensions: Length: 18m

Width: 1.55m

Depth: 0.45m

Orientation: NNE-SSW

Context	Classification	Description	Depth below ground surface	Artefacts
3600	Ploughsoil	Moderately compact mid greyish brown clay silt with occasional small to large sub-rounded stones	0-0.30m	1 sherd of post-medieval pottery (60g)
3601	Natural	Moderately compact mid yellowish brown silty clay with >5% sand	0.30-0.45m+	
3602	Ploughsoil over 3603 and 3604	Moderately compact mid greyish brown clay silt with occasional small to medium sub-rounded stones and larger fragments of limestone.	0.20-30m	5 sherds Roman pottery (31g) 1 fragment of Roman or later tile (14g) and 7 fragments of animal bone (36g)
3603	Foundation	Foundation made of medium to large roughly-hewn limestone blocks. Oriented east-west. Unmortared.	0.25-0.40m	
3604	Deposit	Pile or stack of small to medium roughly-hewn lias.	0.30-0.40m	
3605	Fill of 3606	Moderately compact mid greyish brown clay silt with occasional small to medium sub-rounded stones. Possibly cut by 3608.	0.30-0.40m	
3606	Ditch	Linear, parallel sided feature aligned roughly north-south.	0.30-0.40m	
3607	Fill of 3608	Moderately compact mid greyish brown clay silt with moderate small to medium sub-rounded stones and occasional charcoal flecks.	0.30-0.40m	3 sherds of Roman pottery (15g), 1 fragment of medieval tile (15g), and one fragment of post-medieval or modern brick (>1g)
3608	Ditch	Linear, parallel sided feature aligned roughly east-west.	0.30-0.40m	
3609	Fill of 3610	Moderately compact mid greyish brown clay silt with occasional small to medium sub-rounded stones.	0.30-0.40m	

Context	Classification	Description	Depth below ground surface	Artefacts
3610	Ditch	Linear, parallel sided feature aligned roughly east-west.	0.30-0.40m	
3611	Fill of 3612	Moderately compact mid greyish brown clay silt with occasional small to medium sub-rounded and sub-angular stones.	0.30-0.60m (augered)	
3612	Ditch	Linear, parallel sided feature aligned roughly east-west.	0.30-0.60m (augered)	
3613	Fill of 3614	Moderately compact mid greyish brown clay silt with occasional small to medium sub-rounded stones. Slightly lighter than 3611. Possibly cut by 3612.	0.30-0.40m	
3614	Ditch	Linear, parallel sided feature aligned roughly north-south.	0.30-0.40m	



Trench 36 facing north-east (1m scale)



Trench 36 wall 3603 and rubble 3604 facing south-west (1m and 0.4m scales)

Fields 5763, 6942, 6918 (W) and 6918 (E)

Charford
5763

Big Seeds
6942

Barracks A
6918 (W)

Barracks B
6918 (E)

162

155

156

157

220

217

218

219

159

160

158

31

32

33

161

Legend

- Sample trenches
- Cropmark interpretation
- Test Pits
- SAM

0 25 50 100 150 200 Metres



Def

Def

Field 6918 (west): Barracks A							
Test pits	217	218	219	220	Range		Average
					min	max	
Current cultivation	0.24	0.24	0.17	0.18	0.17	0.24	0.21
Former cultivation	0.10	0.08	0.19	0.16	0.08	0.19	0.13
Subsoil	None	0.12	0.12	0.11	0.00	0.12	0.09
Natural	>0.10	>0.02	>0.07	>0.10			
Minimum buffer: 0.08							
Slope: Level ground							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Silts/sands							



Test pit 218 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

6918 (W)

Field Name

Barracks A

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A.....4 B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A.....3 B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						14
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5
Initial score multiplied by weighting						A21 B C

* Graded A-C according to quality of evidence

* Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion								
Average annual rainfall = 650mm								
	Steep slopes (>7°)		Moderate slopes (3°-7°)		Gentle slopes (2°-3°)		Level ground (>2°)	Score*
Soil group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....1 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil group	Peats		Sands/Silts	Loams	Sandy clays/silty clay	Clay	Score*	
	Serious Score 5		High Score 4	Medium Score 3	Low Score 2	Minimal Score 1	A.....3 B..... C.....	
Risk of soil loss during harvesting								
Crop type	Potatoes/sugar beet		Other root/tuber crops	Combinable/hand-picked crops			Score*	
	Serious Score 5		High Score 4	Medium Score 3			A.....3 B..... C.....	
Initial score							8	
Weighting							1	
Initial score multiplied by weighting							A8 B..... C.....	

Archaeological factors						
Survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]	- Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits	-Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits	-Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits	-Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance	- Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters	A..... B2 C.....
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	A..... B2 C.....
Initial score						4
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1
Initial score multiplied by weighting						A ...4 B ... C ...

* Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	21
Site intrinsic factors (out of 30)	8
Archaeological factors (out of 20)	4
Final risk score (out of 100)	33

Risk Levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk

Fields 5763, 6942, 6918 (W) and 6918 (E)

Charford
5763

Big Seeds
6942

Barracks A
6918 (W)

Barracks B
6918 (E)

162

155

156

157

220

217

218

219

159

160

158

31

32

33

161

Legend

- Sample trenches
- Cropmark interpretation
- Test Pits
- SAM

0 25 50 100 150 200 Metres



Def

Def

Field 6918 (east): Barracks B							
Test pits	158	159	160	161	Range		Average
					min	max	
Current cultivation	0.18	0.20	0.14	0.16	0.14	0.20	0.17
Former cultivation	0.12	0.15	0.10	0.14	0.10	0.15	0.13
Subsoil	None	>0.35	>0.36	None			
Natural	Unex	n/a	n/a	Unex			
Minimum buffer: 0.10							
Notes							
1) Test pits 159 and 160 were excavated in the vicinity of a presumed paleochannel, which may explain the deep subsoil in these test pits.							
2) Possible archaeological features were identified in the base of test pits 158 and 161.							
Slope: Level ground							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Loams							



Test pit 161 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

6918 (E)

Field Name

Barracks B

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A.....3 B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A.....3 B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						13
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5
Initial score multiplied by weighting						A19.5 B C

* Graded A-C according to quality of evidence

* Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion factors								
Average annual rainfall = 650mm								
	Steep slopes ($> 7^\circ$)		Moderate slopes ($3^\circ-7^\circ$)		Gentle slopes ($2^\circ-3^\circ$)		Level ground ($< 2^\circ$)	Score*
Soil group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....1 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil group	Peats	Sands/Silts	Loams	Sandy clays/silty clay	Clay	Score		
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1	A.....3 B..... C.....		
Risk of soil loss during harvesting								
Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable/hand-picked crops			Score		
	Serious Score 5	High Score 4	Medium Score 3			A.....3 B..... C.....		
Initial score							7	
Weighting	Any of above in grey shaded box = 2						1	
Initial score multiplied by weighting							A7 B..... C.....	

Archaeological factors						
Archaeological survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
<p>[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]</p>	<ul style="list-style-type: none"> - Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits 	<ul style="list-style-type: none"> -Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits 	<ul style="list-style-type: none"> -Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits 	<ul style="list-style-type: none"> -Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance 	<ul style="list-style-type: none"> - Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters 	<p>A.....2 B C.....</p>
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	A2 B C
Initial score						4
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1
Initial score multiplied by weighting						A ...4 B ... C ...

* Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	19.5
Site intrinsic factors (out of 30)	7
Archaeological factors (out of 20)	4
Final risk score (out of 100)	30.5

Risk levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk

Barracks B (6918 east)

Trench 31

Maximum dimensions: Length: 13m

Width: 1.55m

Depth: 0.40m

Orientation: NE – SW

Context	Classification	Description	Depth below ground surface
3100	Topsoil	Compact medium brown sandy silt with frequent small to large sub-rounded stones.	0.00-0.30m
3101	Natural	Moderately compact medium brown orange gravels in a sandy silt matrix.	0.30m
3102	Fill	Moderately compacted light orangey brown clayey silt, occasional small flecks and smears of manganese, otherwise very sterile. Natural deposit in natural feature [3104].	0.30-0.45m
3103	Fill	Soft blue-grey sand, moderate amounts of small and medium sub-rounded and sub-angular stones. Very sterile. Natural deposit in natural feature [3104].	0.45m
3104	Cut	Partially exposed slightly irregular, but broadly linear, natural feature. Possibly an ice wedge, almost certainly a periglacial feature of some type.	0.30m

Trench 32

Maximum dimensions: Length: 9.6m

Width: 1.6m

Depth: 0.47m

Orientation: NE – SW

Context	Classification	Description	Depth below ground surface
3200	Topsoil	Moderately compact medium greyish brown sandy silt loam with occasional small gravels. Clear lower boundary.	0.00-0.37m
3201	Natural	Moderately compact light greyish brown clay silt and light reddish brown clay sand mixed with c. 5% of topsoil (3200). Diffuse lower boundary, appears to be re-worked natural.	0.37-0.47m
3202	Natural	Light reddish brown clay sand incorporating several periglacial features filled with bluish-grey clay and abundant small gravels.	0.40m

Trench 33

Maximum dimensions: Length: 10m

Width: 1.55m

Depth: 0.60m

Orientation: NE – SW

Context	Classification	Description	Depth below ground surface
3300	Topsoil	Compact medium brown sandy silt with frequent small and medium sub-rounded stones.	0.00-0.34m
3301	Subsoil	Compact light greyish brown sandy silt with moderate amounts of small and medium sub-rounded and rounded stones.	0.34-0.54m
3302	Natural	Small to large gravels in a silty sand matrix with patches of blue-grey sand.	0.54m



Trench 31 facing north-east (1m scale)



Trench 32 facing east (1m scale)



Trench 33 facing north (1m scale)

Fields 5763, 6942, 6918 (W) and 6918 (E)

Charford
5763

Big Seeds
6942

Barracks A
6918 (W)

Barracks B
6918 (E)

162

155

156

157

220

217

218

219

159

160

158

31

32

33

161

Legend

- Sample trenches
- Cropmark interpretation
- Test Pits
- SAM

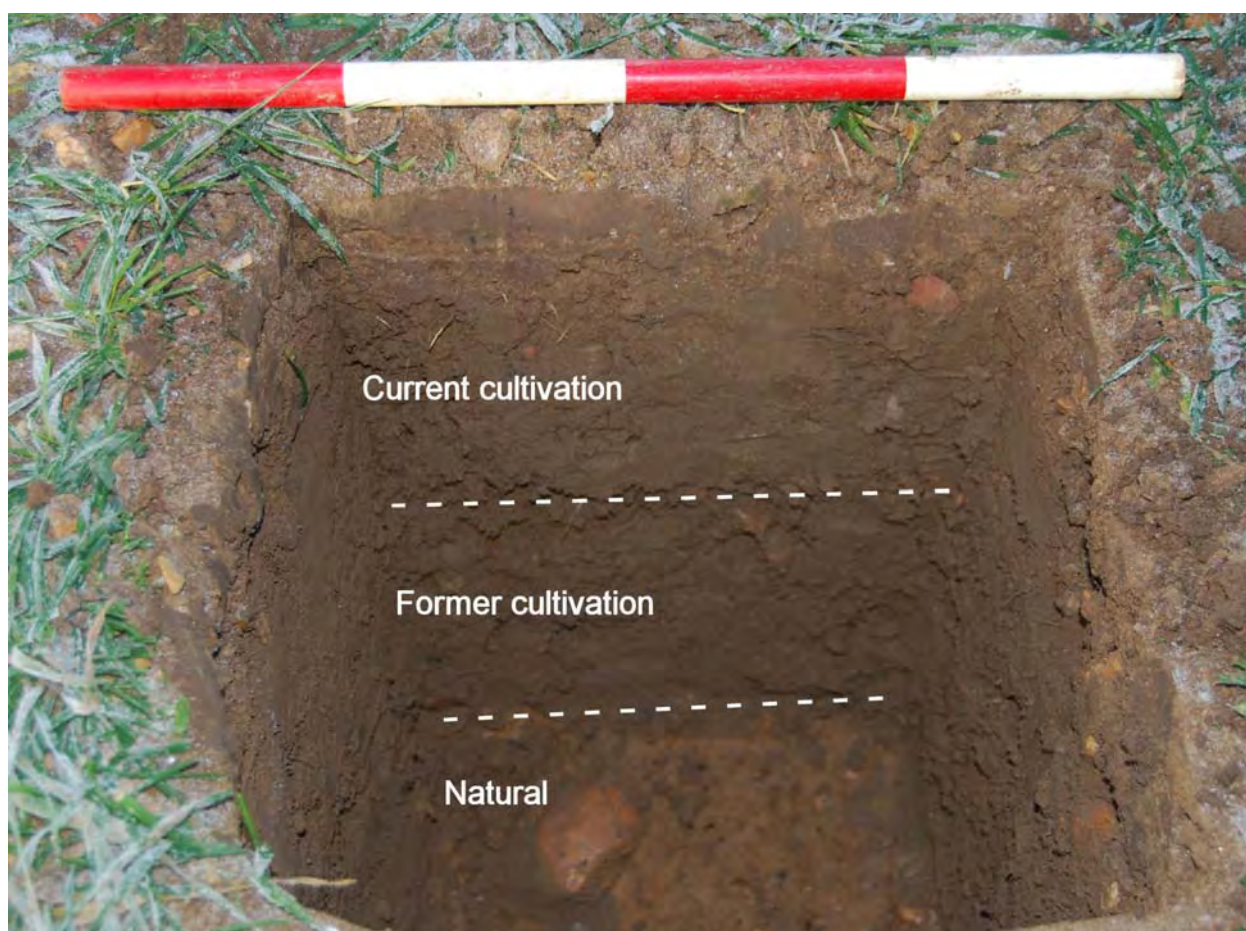
0 25 50 100 150 200 Metres



Def

Def

Field 6942: Big Seeds						
Test pits	155	156	157	Range		Average
				min	max	
Current cultivation	0.16	0.16	0.17	0.16	0.17	0.16
Former cultivation	0.18	0.18	0.20	0.18	0.20	0.19
Subsoil 1	>0.06	None	0.28			
Subsoil 2	N/A	N/A	Unexc.			
Natural	N/A	>0.06	N/A			
Minimum buffer: 0.18						
Slope: Level ground						
Soil group in relation to water erosion: Light						
Soil group in relation to wind erosion: Loams						



Test pit 156 (scale 0.40m)

COSMIC Assessment Sheet – Land Parcel

6942

Field Name

Big Seeds

Management factors						
	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Score*
Buffer	No buffer	Shallow buffer(< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A.....2 (5 with Imants) B..... C.....
Cultivation method and depth	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Minimum tillage Shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A.....3 (5 with Imants) B..... C.....
Cropping	Cropping includes potatoes/sugar beet	Cropping includes other root/tuber crops	Cropping includes cereals, non-root crops		Cropping includes long term grass ley or set-aside (> 5 years)	A.....4 B..... C.....
Subsoiling	Regular subsoiling (< 3 years)	Regular or occasional subsoiling (3-6 years)	Rare subsoiling (7-15 years)	No subsoiling		A.....3 B..... C.....
Initial score						12 (17 with Imants)
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					1.5 (2.5 with Imants)
Initial score multiplied by weighting						A18 (42.5 with Imants) B C

* Graded A-C according to quality of evidence

* Graded A-C according to quality of evidence

Site intrinsic factors								
Susceptibility of cultivated soil to water erosion								
Average annual rainfall = 650mm								
	Steep slopes ($> 7^\circ$)		Moderate slopes ($3^\circ-7^\circ$)		Gentle slopes ($2^\circ-3^\circ$)		Level ground ($> 2^\circ$)	Score*
Soil group	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm	Rainfall more than 800mm	Rainfall less than 800mm		
Light soils	Serious Score 5	High Score 4	High Score 4	Medium Score 3	Medium Score 3	Low Score 2	Minimal Score 1	A.....1 B..... C.....
Moderate soils	High Score 4	Medium Score 3	Medium Score 3		Low Score 2		Minimal Score 1	
Heavy soils	Low Score 2		Minimal Score 1		Minimal Score 1		Minimal Score 1	
Susceptibility of cultivated soil to wind erosion								
Soil group	Peats	Sands/Silts	Loams	Sandy clays/silty clay	Clay		Score*	
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1		A.....3 B..... C.....	
Risk of soil loss during harvesting								
Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable/hand-picked crops			Score*		
	Serious Score 5	High Score 4	Medium Score 3			A.....3 B..... C.....		
Initial score						7		
Weighting	Any of above in grey shaded box = 2					1		
Initial score multiplied by weighting						A7 B..... C.....		

Archaeological factors						
Survival and quality of evidence	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimum Score 1	Score*
[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections)]	- Upstanding earthworks/structures -Well-preserved deposits demonstrated by excavation -Other evidence indicating well-preserved deposits - Dense, discrete, and/or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of nationally significant deposits	-Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies -Other evidence indicating good preservation -Dense, discrete, and/or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to national research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Other evidence of highly significant deposits	-Negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits - Dense, discrete, or, diagnostic deposits relevant to county research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) -Less dense, discrete, or diagnostic deposits relevant to regional research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Dense, discrete, or diagnostic ploughsoil scatters - Other evidence of significant deposits	-Truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating truncation -Sparse or undiagnostic deposits relevant to local research agendas (demonstrated by excavation or indicated by cropmarks/anomalies) - Diffuse or undiagnostic ploughsoil scatters -Other evidence distinguishing between sites of low and minimum significance	- Heavily truncated negative features demonstrated by excavation -Negative features indicated by cropmarks/anomalies -Ploughsoil scatters derived from buried deposits -Other evidence indicating heavy truncation -Sparse or undiagnostic deposits demonstrated by excavation or indicated by cropmarks/anomalies - Diffuse or undiagnostic ploughsoil scatters	A.....2 B C.....
Significance	National significance	Regional significance	County significance	Local significance	No obvious significance	A.....2 B C.....
Initial score						4
Weighting	For score of 9-10 use weighting factor = 2; for score of 8-7 use weighting factor = 1.5; for score of 6 use weighting factor = 1.3; for score of 5-4 use weighting factor = 1; for score of 2-3 use weighting factor = 0.5					1
Initial score multiplied by weighting						A ...4 B ... C ...

* Graded A-C according to quality of evidence

Final risk score

Management factors (out of 50)	18 (42.5 with Imants)
Site intrinsic factors (out of 30)	7
Archaeological factors (out of 20)	4
Final risk score (out of 100)	29 (53.5 with Imants)

Risk levels

Final risk score	Risk level
0-29	Minimal risk
30-39	Low risk
40-49	Moderate risk
50-59	High risk
60+	Serious risk