COSMIC+ RISK ASSESSMENT OF ARCHAEOLOGICAL SITES ON LOWER FIELD BARN FARM, ELMLEY CASTLE

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28th October 2010

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Project P3549
Report 1796

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1. Background

1.1 Sites at risk

This assessment considers the risk of cultivation and related factors to known archaeological sites at Lower Field Barn Farm, Elmley Castle, Worcestershire. The assessment is based on a model initially developed for Natural England by Oxford Archaeology (COSMIC: OA 2006) and modified by Worcestershire Historic Environment and Archaeology Service for Natural England (COSMIC+: WHEAS 2010).

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 known from cropmarks (Figure 1). All of the sites are recorded in the Worcestershire Historic Environment Record. The main aims of the assessment were to define the risk, in each case; to identify the main risk factors; and to recommend appropriate management options.

1.2 Current management

The holding is farmed organically and the fields covered by the survey are currently cultivated in four or five year rotations. In a four year rotation, a two year grass ley is followed by two crops of cereals (wheat or oats). In a five-year rotation, the two year grass ley is followed by three crops of cereals, or two crops of cereals and one crop of potatoes. The rotational grass is established by shallow disc and tine cultivation (up to 3½ inches or 9cm). Cereals are established by ploughing to an average depth of nearly 8 inches (20cm) and a maximum depth of 11 inches (28cm). For the first or second crop, ploughing is followed by subsoiling to a similar depth. Potatoes are established by ploughing and subsoiling to an average depth of 13 inches (33cm) and a maximum (inferred) depth of 17 inches (44cm). With regard to harvesting, potatoes are lifted by machine from a depth no greater than that of ploughing. Some soil is lost with every harvest but most is returned to the field and spread. The other crops are harvested by machine, with minimal soil loss. All these factors are relevant to the assessment, as are intrinsic (topographical) factors and archaeological factors.

1.3 Assessment

The assessment proceeded in six stages broadly following a detailed project design produced for the holding (WHEAS 2010, 4-13).

The first stage was a review of the previous consultation and the information on which it was based.

The second stage was an interview with Mr Stephens, 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 30m² magnetometery grids. In each of these three fields, the geophysical survey results were tested by excavating small trenches.

The information was then assessed, using a modified version of the original OA model. For each site, the likelihood of truncation of archaeological deposits was established by scoring a range of management and intrinsic factors. The consequences of truncation were assessed in terms of the survival, quality, and significance of each site. The combined 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 of the assessment are summarised on Figure 2 and in Tables 1-5. The detailed results are presented in Appendix 1, except for the results of the geophysical survey which are summarised below but presented in full in a separate report (Haddrell and Biggs 2010). Information relating to each field is presented together, for ease of reference. Each field is shown on a large-scale plan which 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.

Land parcel number	Field name	Final risk scores and risk levels				
		Serious 60+	High 50-59	Moderate 40-49	Low 30-39	Minimal 0-29
		Potatoes			Cereals	
SO 9842 0471	Black Leonards	78			39.5	
SO 9842 4564	Top Bomfords	76			38.5	
SO 9943 1011	Field Barn	74.5			35	
SO 9842 7502	New Road Brook	70.8			32.8	
SO 9842 8145	New Road Side	70.8			32.8	
SO 9743 9427	Brickle Piece	68.5			30.5	

Table 1: Final risk scores for potato and cereal cultivation

Field	Management factors	Intrinsic factors	Management + intrinsic factors	Archaeological factors	Final risk score
Black Leonards	47.5	20	67.5	10.5	78
Top Bomfords	47.5	18	65.5	10.5	76
Field Barn	47.5	22	69.5	5	74.5
New Road Brook	45	18	63	7.8	70.8
New Road Side	45	18	63	7.8	70.8
Brickle Piece	47.5	16	63.5	5	68.5

Table 2: Breakdown of final risk scores for potato cultivation

Management factors	Intrinsic factors	Management + intrinsic factors	Archaeological factors
1) Black Leonards, Brickle Piece, Field Barn, & Top Bomfords (47.5) =2) New Road Brook & New Road Side (45)	1) Field Barn (22) 2) Black Leonards (20) =3) New Road Brook, New Road Side, & Top Bomfords (18) 4) Brickle Piece (16)	1) Field Barn (69.5) 2) Black Leonards (67.5) 3) Top Bomfords (65.5) 4) Brickle Piece (63.5) =5) New Road Brook & New Road Side (63)	=1) Black Leonards & Top Bomfords (10.5) =2) New Road Brook & New Road Side (7.8) 3) Brickle Piece & Field Barn (5)

Table 3: Ranking of sites by different factors (potato cultivation)

Field	Management factors	Intrinsic factors	Management + intrinsic factors	Archaeological factors	Final risk score
Black Leonards	21	8	29	10.5	39.5
Top Bomfords	21	7	28	10.5	38.5
Field Barn	21	9	30	5	35
New Road Brook	18	7	25	7.8	32.8
New Road Side	18	7	25	7.8	32.8
Brickle Piece	19.5	6	25.5	5	30.5

Table 4: Breakdown of final risk scores for cereal cultivation

Management factors	Intrinsic factors	Management + intrinsic factors	Archaeological factors
=1) Black Leonards, Field Barn, & Top Bomfords (21) 2) Brickle Piece (19.5) =3) New Road Brook & New Road Side (18)	1) Field Barn (9) 2) Black Leonards (8) =3) New Road Brook , New Road Side, & Top Bomfords (7) 4) Brickle Piece (6)	1) Field Barn (30) 2) Black Leonards (29) 3) Top Bomfords (28) 4) Brickle Piece (25.5) =5) New Road Brook & New Road Side (25)	=1) Black Leonards & Top Bomfords (10.5) =2) New Road Brook & New Road Side (7.8) =3) Brickle Piece & Field Barn (5)

Table 5: Ranking of sites by different factors (cereal cultivation)

2.1 Black Leonards

Black Leonards contains a Roman settlement. At the start of the project, the site was represented only by undated cropmarks, first photographed in 1963. These showed a sequence of rectangular enclosures in the south half of the field, below two east-west ditches indicating a track (Figure 3).

At the time of the fieldwork, Black Leonards was in the first or second year of a grass ley. Five test-pits were excavated around the cropmarks. The test pits showed between 22cm and 44cm of ploughsoil over subsoil (average 33cm). According to this data, and the average depths of ploughing noted above, ploughing for cereals would leave shallow to deep buffers,

while ploughing for potatoes would truncate some features and leave shallow to moderate buffers over others. However, the evidence from the sample trenches, described below, shows that some features are more deeply buried.

The cropmarks in the south of the field were investigated by magnetometer survey. Parts of two enclosures were surveyed in adjacent grids (Grids 1 and 2). Some geophysical anomalies corresponded to cropmarks, and some did not, suggesting that the site is more complex than the cropmarks suggest.

In the final stage of fieldwork, a single trench was excavated to target two anomalies, one linear, the other discrete (Trench 1). The linear anomaly proved to be a re-cut ditch. The discrete anomaly was not identified but other features were, including a robber-trench (indicating a robbed-out stone wall) on a north-west to south-east alignment. This feature was followed for 5m in an extension of the trench to the north-west. Excavation stopped at a length of intact masonry, 72cm wide. The extension also showed two more robber trenches; one running north and the other running south from the first robber trench. Taken together, these remains indicate a large sub-divided stone building. All these features were associated with Roman pottery.

By exposing these features, the trenches provided better evidence for assessing the risk of truncation. The features were found between 31cm and 58cm below the surface (average 38cm). Relating this range to average depths of ploughing shows that cereal cultivation would leave moderate to very deep buffers, and that potato cultivation would leave shallow to deep buffers over most features. However, the test-pit data shows that the field has been ploughed to a depth of 44cm in the recent past, presumably for potatoes, and that cereal cultivation can reach a depth of 28cm. In conclusion, these figures suggest that some features have been truncated (and may continue to be affected) or at best are only protected by shallow buffers.

2.2 Top Bomfords

Top Bomfords contains a late Iron Age and Roman settlement. Mr Stephens was aware of a site in this field (as a family tradition) but not of the cropmarks that were first photographed in 1959 (Figure 4). Cropmarks in the south of the field show a large sub-rectangular enclosure and a track to the south, aligned roughly north-south, with small oval enclosures on either side. Other cropmarks in the north-east of the field show widely-spaced ditches aligned roughly east-west.

Like Black Leonards, the field was in the first or second year of a grass ley. Three test-pits were excavated in the south of the field, and one test pit in the north. The profiles showed between 23cm and 34cm of ploughsoil over subsoil (average 33cm). According to this data, average cereal cultivation would leave a shallow buffer and average potato cultivation would result in truncation.

The west side of the sub-rectangular enclosure was surveyed in two adjacent magnetometer grids (Grids 4 and 5). A third magnetometer grid targeted an oval enclosure to the south (Grid 3). Geophysical anomalies were identified in all three grids. Two anomalies in the adjacent grids corresponded to cropmarks (the south side of the sub-rectangular enclosure and a length of ditch to the south). Other anomalies suggest ditches and pits that have not produced cropmarks. In the grid to the south, there was no correspondence between cropmarks and anomalies. Instead, the anomalies suggest a sequence of ditches on different alignments.

Two trenches were excavated to target specific geophysical anomalies. In both cases, the anomalies were found to represent actual features. The results from Trench 4, which straddled the two adjacent grids, suggest that the sub-rectangular enclosure was re-cut at least once, and that it contained timber buildings on rubble foundations. The results from Trench 3 to the south showed two ditches, as expected, and a small posthole. Pottery was recovered

from the ploughsoil and from several fills as the trench was being cleaned. Although the pottery has not been studied in detail, it suggests occupation from the late Iron Age to the late 4th century. A fragment of box-flue tile and several stone roof tiles were also recovered, indicating stone buildings with underfloor heating nearby.

As in Black Leonards, the trench provided better evidence for assessing the risk of truncation Some features were sealed by ploughsoil and others by underlying subsoil. The uppermost feature was 28cm below the surface, but the rest were lower, between 32cm and 51cm (average 42cm). On this evidence, an average depth of ploughing for cereals would leave shallow to very deep buffers and an average depth of ploughing for potatoes would leave shallow to deep buffers over most features. The risk is therefore much the same as in Black Leonards, as are the likely consequences of deeper cultivations.

2.3 Field Barn

Cropmarks photographed in 1996 show a small rectangular enclosure on the west side of Field Barn (Figure 5). At the time of the fieldwork, the field was planted with potatoes. Three test-pits were excavated, one either side of the enclosure and one in the middle. The profiles showed *c*31cm of ploughsoil over natural sand and gravel. Unfortunately, the potato harvest was late and no additional fieldwork could be undertaken. However, the test-pit data is enough in itself to show that ploughing for potatoes leaves no buffer and may be truncating the site. It also suggests that average ploughing for cereals would leave a moderate buffer.

2.4 New Road Brook

New Road Brook contains two more Roman settlement areas. Cropmarks first photographed in 1962 show a dense concentration of enclosures, ditches, and pits in the north of the field, and a sequence of two or three enclosures to the south (Figure 6).

Seven test-pits were excavated around the cropmarks. The profiles showed between 29cm and 42cm of ploughsoil, the upper part of which (*c*22cm) represented the last, near-average cultivation for wheat. This had left a moderate buffer, although the depth of ploughsoil suggested that average ploughing for potatoes would result in truncation or leave only a shallow buffer.

Part of the northern concentration was surveyed in three contiguous magnetometer grids (Grids 9-11). Most of the cropmarks were represented by geophysical anomalies, though some were not, and other anomalies were found. A fourth grid was used to investigate a small circular enclosure to the south (Grid 12). In this grid, there was a strong correlation between cropmarks and geophysical anomalies.

Two trenches were excavated in the northern grids to target separate linear anomalies. No features were found in one trench (Trench 9), but in the other trench (Trench 8), six intercutting ditches were found on the expected line. All the fills were sealed by subsoil, where excavation of the test-pits had stopped. This surprising, but useful discovery showed that the features were at less risk of truncation than the test-pit data suggested. The uppermost fill was 39cm below the surface, and so would only be at risk from potato cultivation at the upper end of the range (39-44cm).

A third trench was excavated across the matching cropmark and anomalies to the south (Trench 7). Two features were found: one ditch, as expected, and an unexpected pit. Here again, both features were sealed by subsoil and, at *c*40cm below the surface, would not be at risk from most potato cultivations.

2.5 New Road Side

New Road Side contains a third Roman settlement, bringing the total on the holding to five. The cropmarks in this field were first photographed in 1962. They show a sequence of rectangular enclosures and co-axial ditches to the north and west (Figure 6).

Four test-pits were excavated around the cropmarks, soon after a crop of oats had been harvested. The profiles showed that the field was last ploughed to an average depth of 21cm, leaving an average buffer of 16cm. The depth of ploughsoil ranged from 29cm to 40cm (average 35cm), implying that average ploughing for potatoes would leave little or no buffer across the site.

Part of one enclosure was surveyed in adjacent magnetometer grids (Grids 7 and 8). Another grid was surveyed to the south-west to target an area of fewer cropmarks (Grid 6). As in New Road Brook, most of the cropmarks were represented by geophysical anomalies, although some were not, and other anomalies were found.

One trench (Trench 6) was excavated across a linear anomaly identified in the adjacent grids. Another trench (Trench 5) was excavated in the south-western grid over two discrete anomalies. The linear anomaly was represented by a ditch, but other features were also exposed along with an extensive deposit of reworked soil containing pottery, fire-cracked stone charcoal, and bone. This deposit possibly represents a midden. It was sealed by subsoil and overlay features at the east end of the trench.

All these remains were more deeply buried than the test-pit data suggested, i.e., between 35cm and 50cm below the surface (excluding the features sealed by the reworked deposit). On this evidence, average cereal cultivation would leave moderate to very deep buffers, and average potato cultivation would leave shallow to deep buffers. However, at the upper end of the range, cereal cultivation would leave shallow to deep buffers, and potato cultivation would cause severe truncation.

The results from the other trench were negative. No features were found, although lines of compacted soil produced by recent ploughing were observed *c*36cm below the surface.

2.6 Brickle Piece

Brickle Piece contains part of a double-ditched square or rectangular enclosure first photographed in 1996 (Figure 7). Three test pits were excavated around the cropmark. The profiles showed between 26cm and 34cm of ploughsoil over subsoil in one test-pit and natural clay in the other two test-pits. The upper part of the ploughsoil represented the last ploughing for oats. The average depth of this current cultivation was only 14cm, leaving an average buffer of 15cm. In most years, however, it is likely that ploughing is closer to the average depth of 20cm, leaving an average buffer of 9cm. Judging by the depth of the ploughsoil, it is clear that ploughing for potatoes would leave no buffer.

3. Discussion

The COSMIC model provides a reasonable basis for assessment and decision-making. It is not comprehensive, however, and after several applications, some weaknesses have become apparent. It is therefore necessary to review the results before acting upon them, especially as any decisions are likely to be binding for the term of a Higher Level Stewardship agreement.

In the first place, the model exaggerates the risk of potato cultivation by scoring potatoes as a serious risk crop in themselves, under management factors, and by ignoring practices that reduce the risk, e.g. replacing soil lost during harvesting and applying bulky organic manures. Both practices are followed at Lower Field Barn Farm.

Secondly, the model exaggerates the risk of soil loss through combine harvesting by scoring it as a medium risk, under site intrinsic factors. In reality, the risk is probably low, and should be scored accordingly. Moreover, the issue of soil loss during harvesting is clearly a management factor, not an intrinsic one.

Thirdly, even in the revised version used here, the model does not distinguish adequately between more and less significant sites. As a result, the difference between the highest and lowest scoring sites is only 5½ points, despite obvious differences between them in terms of known and potential information.

These points have two main implications, namely that cereal cultivation presents little or no risk to most of the sites, and that for each site, the greater risk of potato cultivation needs to be weighed against a more considered assessment of its significance.

On this basis of this review, the results of the assessment can be qualified as follows. The most significant sites at greatest risk are clearly those in Black Leonards and Top Bomfords. The site in Field Barn is at higher risk of truncation but is less significant, at least in terms of its size. Moving further down the ranking, the sites in New Road Side and New Road Brook could be as significant as those in Black Leonards and Top Bomfords but are definitely at less risk of truncation. Finally, the part of the site in Brickle Piece appears to be less significant than the New Road sites though is at much the same risk of truncation.

4. Management options

According to the original COSMIC rationale, management options should be considered for all sites at moderate, high or serious risk. The following table will therefore set out suitable options for protecting each site, based on the evidence presented above and in the appendix.

In the light of the discussion, fields are listed in order of priority for changes in management. Options available through Higher Level Stewardship are stated with the appropriate codes. The recommended restrictions on depths of ploughing and subsoiling have been calculated with reference to the shallowest features observed in sample trenches, or (in the case of Brickle Piece and Field Barn) to the minimum depth of ploughsoil observed in test-pits. If adopted, they would ensure that most features would be protected by moderate or deeper buffers.

Field number	Field name	Main risk factors	Management options	Risk level after mitigation
SO 9842 0471	Black Leonards	Ploughing and subsoiling below 8" (20cm), resulting in truncation or leaving only shallow buffers; soil loss leading to reduction of buffers; deposits and features of regional significance.	Restrict depth of ploughing and subsoiling to 8" (20cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal
			Whole-field reversion (HD2 or HD7)	n/a

Field number	Field name	Main risk factors	Management options	Risk level after mitigation
SO 9842 4564	Top Bomfords	Ploughing and subsoiling below 7" (18cm), resulting in truncation or leaving only shallow buffers; soil loss leading to reduction of buffers; deposits and features of regional significance.	Restrict depth of ploughing and subsoiling to 7" (18cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal
			Whole-field reversion (HD2 or HD7)	n/a
SO 9842 8145	New Road Side	Ploughing and subsoiling below 10" (25cm), resulting in truncation or leaving only shallow buffers; soil loss during harvesting leading to reduction of buffers; deposits and features of county or regional significance.	Restrict depth of ploughing and subsoiling to 10" (25cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal
			Partial reversion of upper third of field (*c*8 ha; HD2 or HD7)	n/a
SO 9842 7502	New Road Brook	Ploughing and subsoiling below 11" (28cm), resulting in truncation or leaving only shallow buffers; soil loss leading to reduction of buffers; deposits and features of county or regional significance.	Restrict depth of ploughing and subsoiling to 11" (28cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal
			Whole-field reversion (HD2 or HD7)	n/a
SO 9943 1011	Field Barn	Ploughing and subsoiling below 8" (20cm), resulting in truncation or leaving only shallow buffers; soil loss leading to reduction of buffers; deposits and features of local significance.	Restrict depth of ploughing and subsoiling to 8" (20cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal

Field number	Field name	Main risk factors	Management options	Risk level after mitigation
SO 9743 9427	Brickle Piece	Ploughing and subsoiling below 6 (16cm), resulting in truncation or leaving only shallow buffers; soil loss during harvesting leading to reduction of buffers; deposits and features of local significance.	Restrict depth of ploughing and subsoiling to 6" (16cm)	Low
			Establish combinable crops by reduced-depth 4" (>10cm), non-inversion tillage with no subsoiling or mole-ploughing (HD3)	Minimal
			Establish combinable crops by direct drilling with no cultivation, subsoiling, deep ploughing or mole-ploughing (HD6)	Minimal
			Reversion of 50m wide strip along northern boundary (HD2 or HD7)	n/a

Table 6: Summary of main risk factors, management options, and predicted outcomes

5. Acknowledgements

The landowner Mr Stephens commissioned the project with the support of Natural England. He also provided essential information and assistance.

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

Stratascan: The geophysical survey was managed by Simon Haddrell. The survey itself was undertaken by Melanie Biggs, David Elks, Simon Haddrell, and Gemma Haddrell. The report was written and illustrated by Simon Haddrell and Melanie Biggs.

WHEAS: The project was managed by Robin Jackson and led by Darren Miller. The fieldwork was undertaken by Darren Miller, Supervisor Adam Lee, Finds Officer Angus Crawford, and Archaeologists Richard Bradley, Chris Gibbs, and Mike Nicholson. The illustrations were produced by Richard Bradley.

The JCB and driver (Doug) were supplied by A G Redman and Son.

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7. Glossary and notes

Buffer: Soil between *current cultivation* and known or inferred archaeological deposits. The buffers identified in this assessment are limited to *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 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.

Natural: Archaeological term for parent material. Over most of Lower Field Barn Farm, the parent material consists of fluvioglacial silts and sands with common to abundant limestone gravels.

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 type, soil groups 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.

Truncation, loss of information and significance: In the present context, truncation means direct damage to archaeological deposits as a result of ploughing, disc/tine cultivation, and/or

subsoiling. Truncation 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.

Figure 1

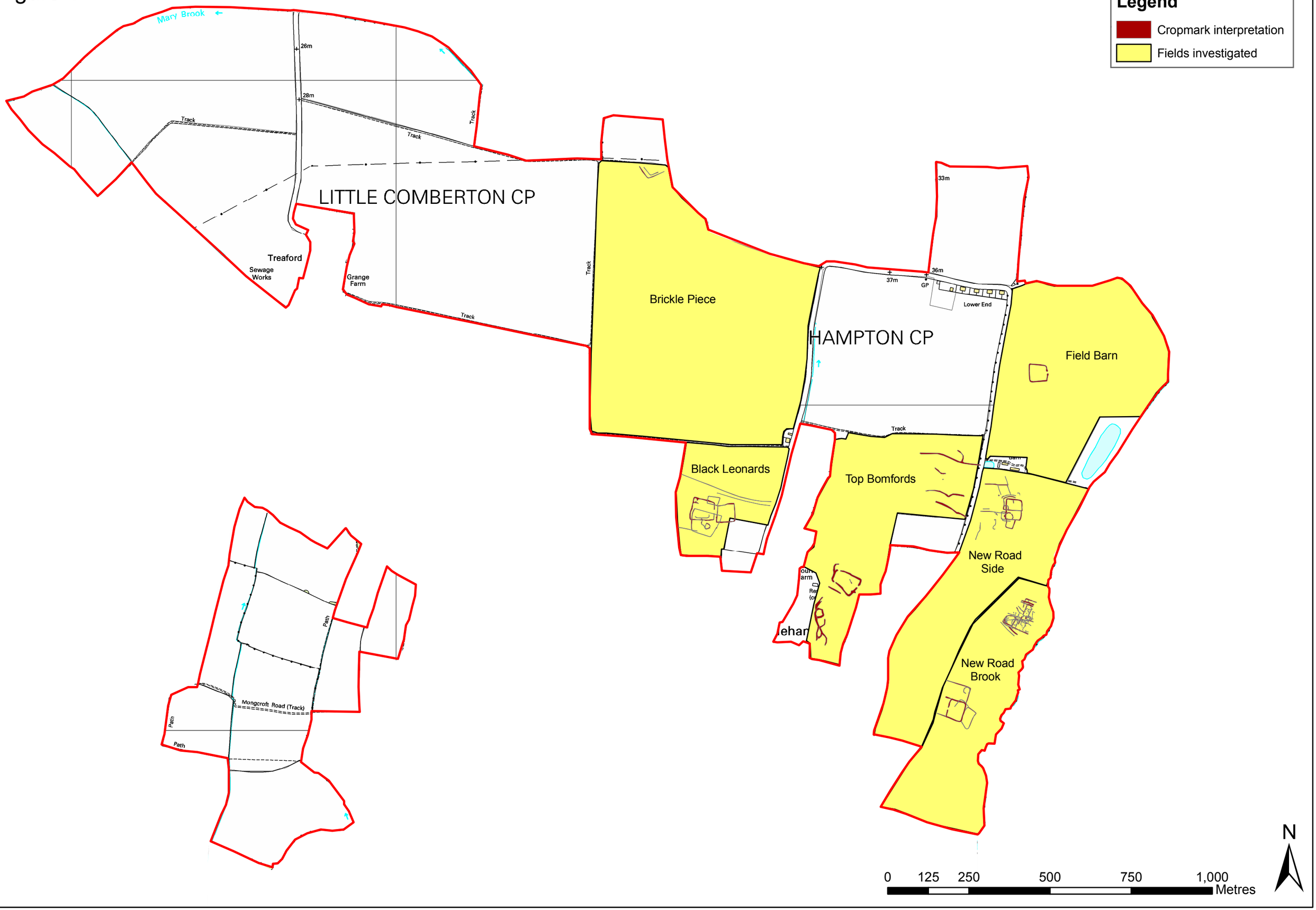
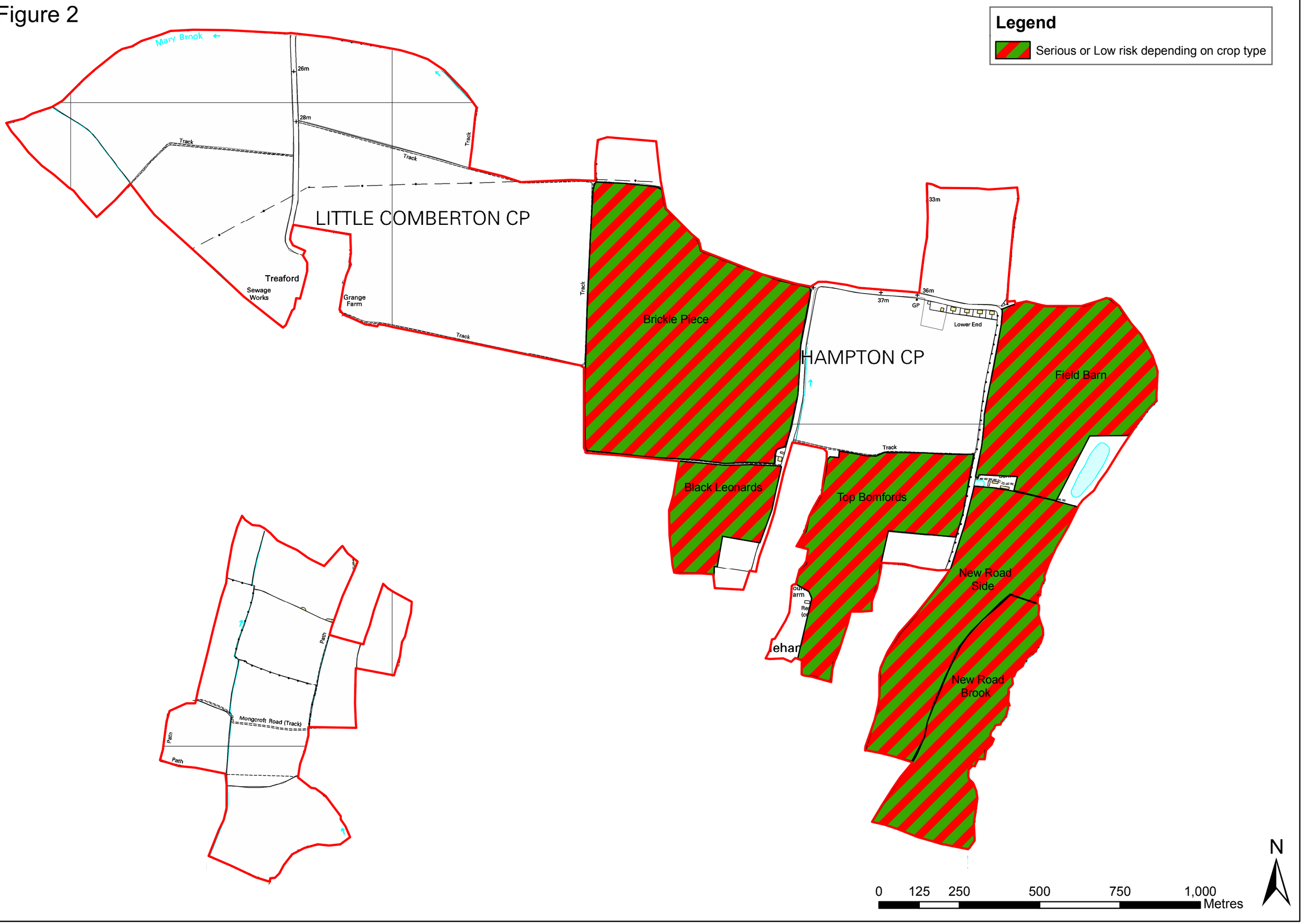

Legend
Cropmark interpretation
Fields investigated
Mary Brook
26m
28m
Track
Track
Track
LITTLE COMBERTON CP
Treaford
Sewage Works
Grange Farm
Track
Track
Brickle Piece
33m
36m
37m
GP
Lower End
HAMPTON CP
Field Barn
Track
Black Leonards
Top Bomfords
New Road Side
New Road Brook
Path
Mongcroft Road (Track)
Path
Path
0
125
250
500
750
1,000
Metres
N

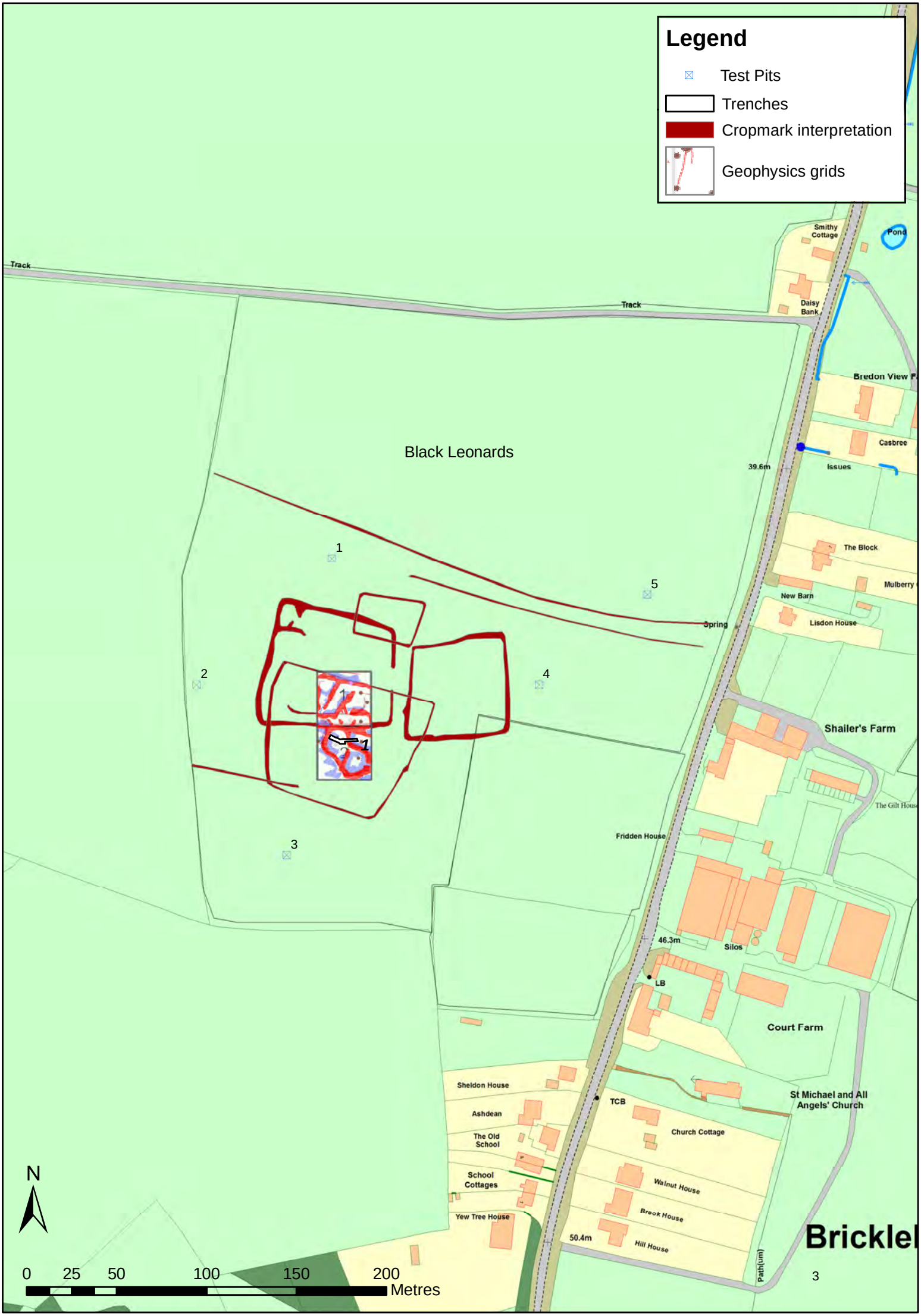
Figure 2


Legend
Serious or Low risk depending on crop type
Mary Brook
26m
28m
Track
Track
Track
LITTLE COMBERTON CP
Treaford
Sewage Works
Grange Farm
Track
Track
Brickle Piece
33m
36m
37m
GP
Lower End
HAMPTON CP
Field Barn
Track
Black Leonards
Top Bomfords
New Road Side
New Road Brook
Path
Mongcroft Road (Track)
Path
Path
0
125
250
500
750
1,000
Metres
N

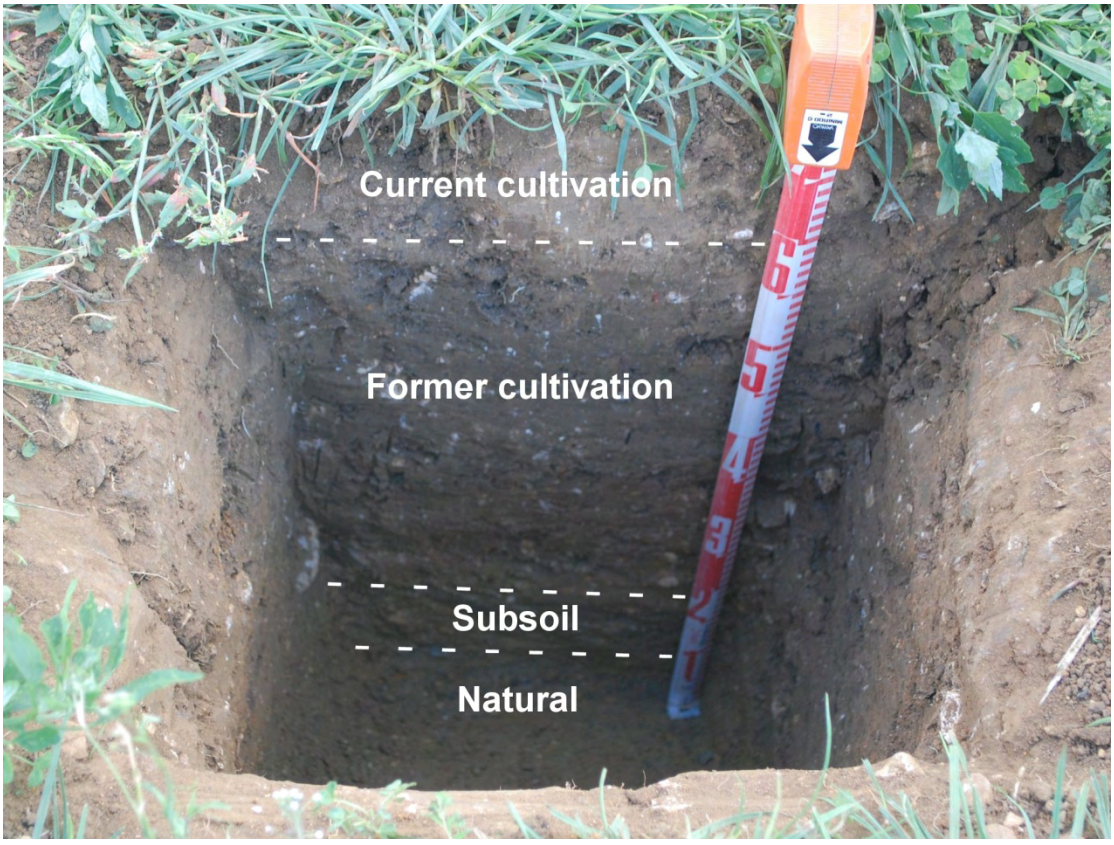
Appendix

Field number	Field name	WSM number	Grid reference	Reconnaissance and fieldwork before assessment	Evidence	Additional fieldwork during assessment
SO 9842 0471	Black Leonards	06045	SO 97960 42680	Aerial reconnaissance in 1963, 1990, 1991, & 1996	Cropmarks of successive rectangular enclosures and flanking ditches of E-W track to north.	Geophysical survey grids 1 and 2 targeted parts of two rectangular enclosures and identified anomalies suggesting outer and internal ditches, two small sub-circular enclosures, and nine pits. Trench 1 targeted two anomalies but exposed a sequence of ditches and the robbed-out walls of a stone building, all associated with Roman pottery.
SO 9743 9427	Brickle Piece	24022	SO 97770 43700	Aerial reconnaissance in 1996.	Cropmarks of part of a double-ditched square or rectangular enclosure.	n/a
SO 9943 1011	Field Barn	24022	SO 98960 43100	Aerial reconnaissance in 1996.	Cropmarks of small square enclosure with rounded corners and entrance on east side.	n/a
SO 9842 7502	New Road Brook	01566	SO 98905 42330 & SO 987000 42085	Aerial reconnaissance in 1962, 1990, and 1991.	Two areas of cropmarks: a dense concentration of enclosures, ditches, and pits in the north of the field, and two or three superimposed rectangular enclosures 300m to the south-east, one containing a small circular enclosure.	Geophysical survey grids 10-12 targeted part of the northern concentration and identified anomalies suggesting a sequence of ditches. Trench 8 targeted two parallel linear anomalies but found six intercutting ditches on the same alignment, all apparently of Roman date. Geophysical survey grid 9 targeted the small circular enclosure to the south, and identified a similar anomaly. A corresponding feature and a pit were found in Trench 7 but no artefacts were

Field number	Field name	WSM number	Grid reference	Reconnaissance and fieldwork before assessment	Evidence	Additional fieldwork during assessment
						recovered.
SO 9842 8145	New Road Side	06591	SO 98850 42665	Aerial reconnaissance in 1962, 1990, and 1991. Surface collection in 1971.	Cropmarks of superimposed rectangular enclosures with co-axial ditches to north and west. Scatter of Roman pottery (F Brennan, 'Cropmarks in the Avon-Severn Valleys', in Worcestershire Archaeological Newsletter No. 10 (June 1972), pp. 16-17).	Geophysical survey grids 6-8 targeted part of one enclosure and an area without cropmarks to the south-west. Anomalies were identified within the enclosure suggesting outer and internal ditches, and outside the enclosure, suggesting a scatter of pits. Trench 6 targeted a linear anomaly but found more features and a midden deposit, associated with late Iron Age and Roman pottery. Trench 5 targeted two discrete anomalies but found no corresponding features.
SO 9842 4564	Top Bomfords	03675, 03677, 03679, 11384	SO 97940 42650	Aerial reconnaissance in 1959, 1961, 1962, 1990, and 1996.	Cropmarks in the south of the field show a large sub-rectangular enclosure and a track to the south, aligned roughly north-south, with small oval enclosures on either side. Other cropmarks in the north-east of the field show widely-spaced ditches aligned roughly east-west.	Geophysical survey grids 4 and 5 targeted part of the sub-rectangular enclosure and identified anomalies broadly corresponding to the cropmarks, but also others suggesting unresponsive features. Trench 4 targeted four anomalies but found ten features, including re-cut ditches, a pit, and a rubble wall foundation, all associated with late Iron Age and Roman pottery. Stone roof tiles and a fragment of box flue tile were recovered from the ploughsoil above these features. Geophysical survey grid 3 targeted an oval enclosure to the south but found anomalies suggesting a sequence of ditches. Two corresponding ditches and a posthole were found in Trench 3. The features were associated with Roman pottery including a rim sherd of 4th century shell-tempered ware.


Legend
Test Pits
Trenches
Cropmark interpretation
Geophysics grids
Track
Track
Smithy Cottage
Pond
Daisy Bank
Bredon View F
Casbree
Issues
39.6m
Black Leonards
1
2
3
4
5
1
The Block
Mulberry
New Barn
Lisdon House
Spring
Shailer's Farm
The Gilt Hous
Fridden House
46.3m
Silos
LB
Court Farm
Sheldon House
Ashdean
The Old School
School Cottages
Yew Tree House
TCB
Church Cottage
St Michael and All Angels' Church
Walnut House
Brook House
Hill House
50.4m
Path(um)
Bricklel
3
N
0
25
50
100
150
200
Metres

Field: SO 9842 0471 Black Leonards								
						Range		
Test pits	**1**	**2**	**3**	**4**	**5**	**min**	**max**	**Average**
Current cultivation	0.05	0.05	0.05	0.08	0.07	0.05	0.08	0.06
Former cultivation	0.29	0.30	0.24	0.36	0.15	0.15	0.36	0.27
Subsoil 1	0.26	0.20	0.06	0.13	0.07	0.06	0.26	0.14
Subsoil 2					0.09			
Natural	>0.07	>0.09	Unex	Unex	Unex			
Minimum buffer: 0.15								
Slope: Gentle								
Notes: Roman, medieval, and later pottery observed on surface in area of cropmark enclosures								
Soil group in relation to water erosion: Light								
Soil group in relation to wind erosion: Loams								



Test pit 1 facing east

Black Leonards

Trench 1

Maximum dimensions: Length: 13m Width: 2.85m Depth: 0.88m

Orientation: E-W

Context	Classification	Description	Depth below ground surface
101	Current cultivation	Friable mid greyish brown sand silt with few small limestone gravels and common fine roots. Clear lower boundary.	0.08m
102	Former cultivation	As 101 but firm with fewer roots. Clear lower boundary.	0.08-0.32m
103	Subsoil	Firm mid, slightly greyish, brown sand silt loam. Common small limestone gravels. Not observed at west end of trench. 0.15-0.17m deep at centre of the trench, 0.13m deep at east end.	0.32-0.49m
104	Fill of 105	As (103). Unexcavated.	>0.32m
105	Ditch	Linear, parallel sided feature aligned NE–SW; 0.26m wide. Cuts subsoil 103 and fill 109 of ditch 110.	>0.32m
106	Fill of 107	Firm mid, slightly greyish, brown silt mixed with *c*15% light brown sand. Unexcavated.	>0.36m
107	Ditch	Linear, parallel sided feature aligned NW-SE and 0.95m wide. Cuts 108, 111, and 113.	>0.36m
108	Fill of 126	Firm dark greyish brown sand silt loam. Common small limestone gravels with few medium angular limestone fragments. Also common charcoal fragments and flecks with several large sherds of Severn Valley ware. Unexcavated.	>0.49m
109	Fill of 110	As 103 Apparently cut by 126, although the may represent a re-cut of 110 or an interface between secondary 109 and tertiary 108 fills. Unexcavated.	>0.32m
110	Ditch	One side of a linear feature aligned N-S; at least 0.60m wide.	>0.32m

Context	Classification	Description	Depth below ground surface
111	Fill of 112	Same as 106 but slightly paler and coarser. Sealed by subsoil 103 and cut by 107. Unexcavated.	>0.35m
112	Ditch	Linear, parallel sided feature aligned N-S; 1.05m wide.	>0.35m
113	Fill of 114	Firm, light greyish brown silt mixed with *c*15% light reddish brown sand. Unexcavated.	>0.38m
114	Truncated feature	Truncated feature represented by one side, 0.24m long, aligned E-W.	>0.38m
115	Fill of 116	Firm mid, slightly greyish, brown sand silt with common small limestone gravels and small to medium angular limestone fragments. Unexcavated.	>0.31m
116	Robber trench	Linear, parallel sided feature aligned NW-SE. Varies in width from 0.55m to 0.71m.	>0.31m
117	Fill of 118	Firm, dark greyish brown sandy silt loam with common small limestone gravels. Unexcavated.	>0.40m
118	Pit	Sub-circular feature partially exposed in plan and south facing section.	>0.40m
119	Fill of 120	Firm, mid greyish brown silt loam with common small limestone fragments. Cut by 116 and 118. Unexcavated.	>0.40m
120	Truncated feature	Truncated feature represented by one edge 1.10m long, aligned NW-SE; at least 0.65m wide.	>0.40m
121	Truncated deposit	Firm, light brown clay sand with common small limestone gravels. Cut by 116, 120 and 123. Visible dimensions are 1.60m NW-SE by 0.35m NE-SW. Unexcavated.	>0.40m
122	Fill of 123	Firm, mid greyish brown sandy silt loam with common small to large limestone fragments (larger fragments are more common towards bottom of deposit)	0.43-0.88m
123	Robber trench	Linear, parallel sided feature aligned NW-SE; 1.35m wide by 0.45m deep onto *in-situ* unmortared limestone.	0.43-0.88m

Context	Classification	Description	Depth below ground surface
124	Fill of 123	Redeposited natural fill of 123 against the SW edge of the feature.	0.43-0.88m
125	Robber trench	= 123	0.43-0.88m
126	Re-cut of ditch 110	Linear, parallel sided feature aligned N-S; at least 1.55m long by 2.0m wide.	0.32-0.44m+
127	Natural	Light yellowish brown silty sand with abundant small limestone gravels; light reddish brown clay sand in extension to NW.	>0.49m
128	Wall	Partially exposed length of wall oriented NW-SE; 1.12m long and 0.72m wide. Made of large (<420mm); roughly hewn platy limestone blocks faced on both sides. Slightly different alignment to robber trench 123.	>0.58m
129	Fill of 130	Light greyish brown sandy silt loam with common medium to large roughly hewn platy limestones. Unexcavated.	>0.37m
130	Ditch	Linear, parallel sided feature aligned NNE-SSW and at least 1.40m long by 0.50m wide.	>0.37m
131	Fill of 132	Firm, mid greyish brown sandy silt loam with common small to large limestone fragments. (large fragments more common towards bottom of deposit)	>0.37m
132	Ditch	Linear, parallel sided feature aligned approximately NNE-SSW; at least 0.75m long and 0.90m wide.	>0.37m
133	Fill of 134	Firm, dark greyish brown silt loam with few limestone gravels. Cut by 132. Unexcavated.	>0.49m
134	Ditch	Partially exposed linear feature aligned NW-SE.	>0.49m
135	Fill of 136	Firm, dark greyish brown silt loam with few small limestone gravels. Unexcavated.	>0.40m
136	Posthole	Partially exposed oval or sub-circular feature measuring at least 0.25m by 0.25m.	>0.40m

Trench 1 facing east (1m scale)

Trench 1 extension facing south-east across wall 128 and robber trench 123 (1m scales)

Trench 1: Robber trench 123 (1m scale)

Trench 1: Wall 128 (1m scale)

COSMIC+ assessment sheet **Land parcel number:** SO 9842 0471 **Field name:** Black Leonards

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....5 C.....	A..... B.....4 C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	A..... B.....3 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.....5 B..... C.....	A.....3 B..... C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A..... B.....4 C.....	
Initial score						19	14
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....47.5 C.....	A..... B.....21 C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	**Steep (< 7°)**		**Moderate (3-7°)**		**Gentle (2-3°)**		**Level ground (< 2°)**	**Score***
	Rainfall > 800mm	**Rainfall < 800mm**	**Rainfall > 800mm**	**Rainfall < 800mm**	**Rainfall > 800mm**	**Rainfall < 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 4	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 water erosion

Soil group	**Peats**	**Sands/silts**	**Loams**	**Sandy/silty clays**	**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 through harvesting

Crop type	**Potatoes/sugar beet**	**Other root/tuber crops**	**Combinable crops**	**Scores***	
				Potatoes	**Cereals**
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				10	8
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....20 B..... C.....	A.....8 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5** - Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	**High Score 4** - Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	**Medium Score 3** - Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	**Low Score 2** - Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	**Score*** A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....4 C.....
Initial score					7
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.....10.5 C.....

***Graded A-C according to quality of evidence**

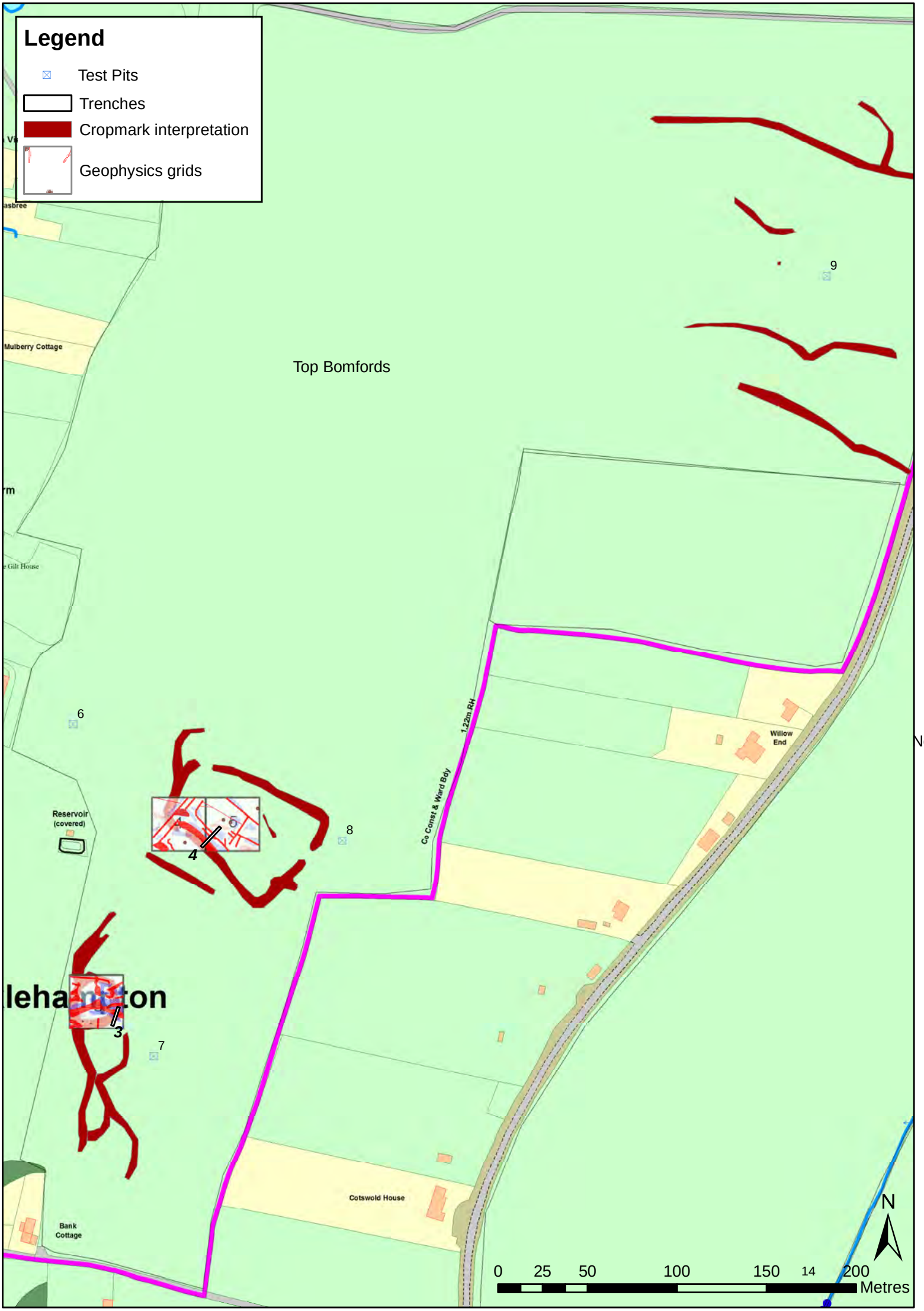
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

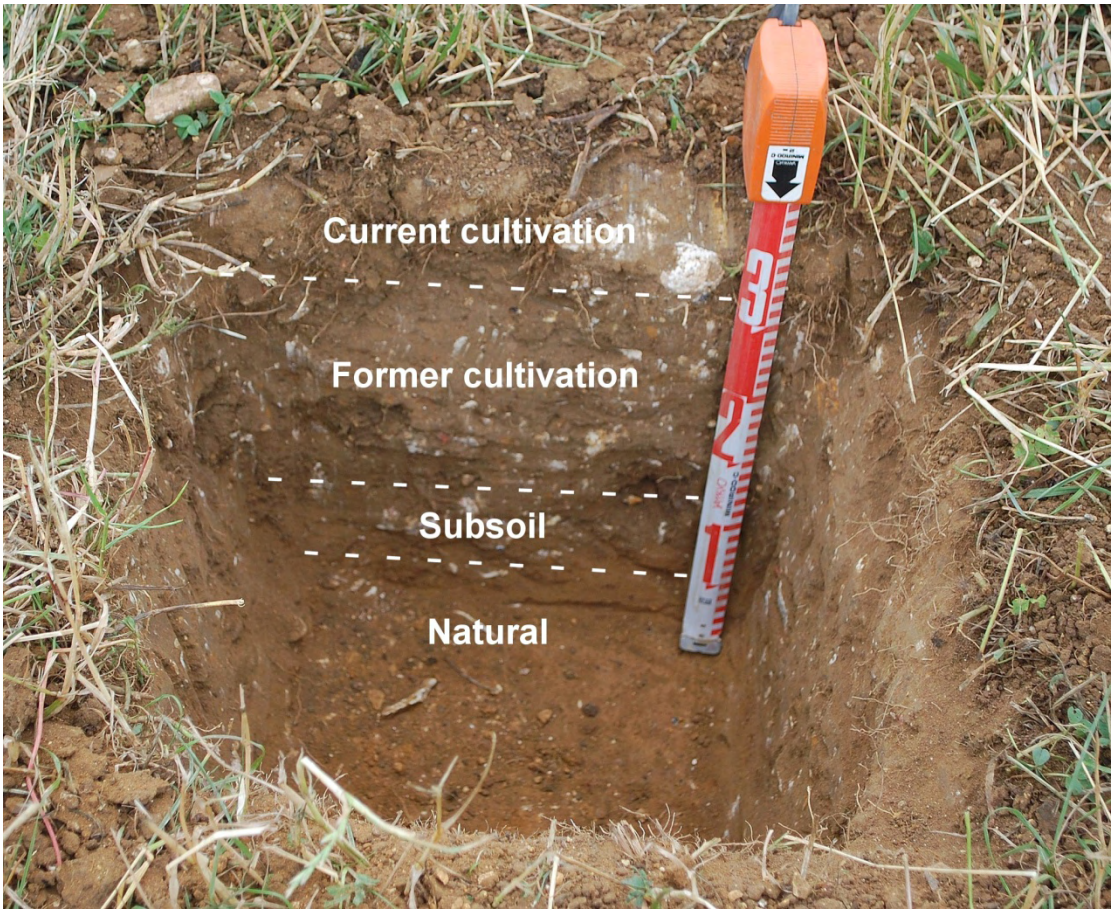
	Potatoes	Cereals
Management factors (out of 50)	47.5	21
Site intrinsic factors (out of 30)	20	8
Archaeological factors (out of 20)	10.5	10.5
Final risk score (out of 100)	78	39.5

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**


Legend
Test Pits
Trenches
Cropmark interpretation
Geophysics grids
Top Bomfords
Mulberry Cottage
Gilt House
Reservoir (covered)
Willow End
Co Const & Ward Bdy
1.22m RH
Cotswold House
Bank Cottage
6
7
8
9
3
4
5
N
0
25
50
100
150
200
Metres

Field: SO 9842 8145 Top Bomfords							
					Range		
Test pits	6	7	8	9	min	max	Average
Current cultivation	0.09	0.06	0.08	0.07	0.06	0.09	0.08
Former cultivation	0.16	0.17	0.26	0.21	0.16	0.26	0.20
Subsoil 1	0.09	0.16+	0.12+	0.06+			
Subsoil 2	0.14						
Natural	0.12+						
Minimum buffer: 0.16							
Slope: Gentle							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Sandy clay/silty clay							



Test pit 9 facing north

Top Bomfords

Trench 3

Maximum dimensions: Length: 10.45m Width: 1.55m Depth: 0.55m

Orientation: N-S

Context	Classification	Description	Depth below ground surface
300	Current cultivation	Soft mid greyish brown silt loam with few small-medium limestone fragments; common fine roots; weak blocky peds; clear lower boundary.	0-0.11m
301	Former cultivation	Firm mid greyish brown silt loam (more compact and slightly firmer than 300), with few small-medium limestone fragment; common fine roots; firm blocky peds; clear lower boundary.	0.11-0.30m
302	Subsoil	Moderately firm light greyish brown sandy silt loam with common small limestone gravels; weak blocky peds. Limited to centre of trench between features 305 and 307.	0.30-0.40m
303	Natural	Compact light yellowish brown silty sand with common small limestone fragments.	>0.40m
304	Fill of [305]	Moderately firm mid greyish brown silt loam with common limestone fragments, few charcoal flecks, ceramics, and medium angular non-local stones. Unexcavated.	>0.30m
305	Ditch	Roughly parallel sided feature aligned E-W and <2.25m wide. South side poorly defined against 302.	>0.30m
306	Fill of [307]	As 304 but with more common and larger ceramics, and one or two medium angular non-local stones. Unexcavated.	>0.40m
307	Ditch	Roughly parallel sided feature aligned E-W; up to 1.30m wide.	>0.40m
308	Fill of [309]	Soft mid greyish brown silt loam with common small limestone fragments, few fragments of charcoal and ceramics.	0.40m-0.55m

Context	Classification	Description	Depth below ground surface
309	Posthole	Sub-circular feature measuring 0.34m N-S by 0.28m E-W. Sharp break of slope at top). Irregular sides due to limestone fragments in natural, varying from steeply sloping to concave.	0.40-0.55m

Trench 3 facing north across posthole 309 and ditches 307 and 305 (1m scales)

Trench 3: ditch 307 facing east (1m scale)

Top Bomfords

Trench 4

Maximum dimensions: Length: 14.83m Width: 1.55m Depth: 0.56m.

Orientation: NE-SW

Context	Classification	Description	Depth below ground surface
400	Current cultivation	Compact greyish brown silt loam with few small limestone fragments; common fine roots; strong blocky peds; clear lower boundary.	0-0.12m
401	Former cultivation	As 400 but slightly darker and fewer fine roots.	0.12-0.20m
402	Subsoil	Compact light to mid- greyish brown silt loam with few small limestone fragments and a clear lower boundary.	0.20-0.34m
403	Foundation trench	Linear, parallel-sided feature aligned NW-SE. 0.25m long. Cuts fill 411 of ditch 423.	>0.28m
404	Rubble foundation.	Mid grey brown sandy silt around linear spread of small to large limestone fragments. Unexcavated.	>0.28m
405	Fill of 406	Firm dark brown silt loam with common small limestone gravels and few sherds of pottery. Unexcavated.	>0.46m
406	Pit	Irregular shaped feature measuring approximately 0.65m by 0.50m. Cuts fill 413 of ditch 412.	>0.46m
407	Ditch	Linear, parallel-sided feature aligned NW-SE. Sharp break of slope at top; steeply sloping sides breaking gradually to concave base. 0.50m wide.	0.36-0.52m
408	Fill of 407	Friable mid brownish grey sandy silt with common small limestone gravels. Excavated by machine in 0.50m wide slot. Cut by 409.	0.36-0.52m
409	Pit	Large irregular feature at NE end of trench, represented by fill 410 and one gently sloping side. At least 4.65m wide and 0.16m deep. Cuts 408.	0.36-0.62m+

Context	Classification	Description	Depth below ground surface
410	Fill of 409	Friable mid yellowish brown sandy silt with common small limestone gravels. Few shreds of pottery and fragments of animal bone. Partially excavated by machine in 0.50m wide slot.	0.36-0.62m+
411	Fill of 423	Friable dark greyish brown sandy silt with common small limestone gravels. Unexcavated.	>0.32m
412	Ditch	Linear, parallel-side feature aligned approximately NW-SE Up to 1.95m wide. Unexcavated.	>0.32m
413	Fill of 412	Firm light yellowish brown sandy silt with common small limestone gravels. Cut by pit 406 and probably by ditch 423.	>0.32m
414	Ditch	Linear feature represented by fill 415 and one side aligned approximately NW-SE. Probably correlates to ditch 418, filled by 424, making one feature up to 3m wide.	>0.51m
415	Fill of 414	Firm mid greyish brown sandy silt with common small limestone gravels. Few sherds of pottery and fragments of animal bone. Cut by ditch 416.	>0.51m
416	Ditch	Linear, parallel-sided feature aligned approximately NW-SE. 1.45m wide. Cuts fill 415 of ditch 414 and fill 424 of ditch 418.	>0.51m
417	Fill of 416	Moderately compact pale mid-greyish brown sandy silt with common small angular stones, occasional pot and occasional bone. Cut by 19th/20th century ceramic land drain. Unexcavated.	>0.51m
418	Ditch	Linear feature represented one side aligned approximately NW-SE separating fills 419 and 424. Either fill may be the fill of the feature. It may correlate to ditch 414, which would make the feature *c*3m wide, filled with 417 and 424, and cut by ditches 416 and 425.	>0.50m

Context	Classification	Description	Depth below ground surface
419	Fill of 425	Firm dark greyish-brown silt loam. Possibly cut by ditch 418.	>0.50m
420	Ditch	Linear feature represented by truncated edge aligned approximately N-S. At least 0.40m wide. Cut by ditch 425.	>0.50m
421	Fill of 420	Friable pale yellowish brown silty sand with common small limestone gravels. Cut by 425.	>0.50m
422	Natural	Compact light reddish and yellowish brown sandy silt with abundant small limestone gravels.	>0.45m
423	Ditch	Linear, parallel-sided feature aligned approximately NW-SE, Up to 1.55m wide. Filled with 411. Probably cut fill 413 of ditch 412.	>0.32m
424	Fill of 418	As 415, and probably the same fill of ditch 414=418.	>0.51m
425	Ditch	Linear, parallel-sided feature aligned approximately NW-SE. Filled with 419. 0.45m wide, assuming that the feature cuts fill 424 of ditch 418. Alternatively, ditch 418 may have cut fill 419.	>0.50m

Trench 4 facing north-east (1m scales)

Trench 4: Rubble foundation 404 facing south-west (1m scale)

COSMIC+ assessment sheet **Land parcel number:** SO 9842 4564 **Field name:** Top Bomfords

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....5 C.....	A..... B.....4 C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	A..... B.....3 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..... B.....5 C.....	A..... B.....3 C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A.....4 B..... C.....	
Initial score						19	14
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....47.5 C.....	A..... B.....21 C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	Steep (< 7°)		Moderate (3-7°)		Gentle (2-3°)		Level ground (< 2°)	Score*
	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 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 4	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 water erosion

Soil group	Peats	Sands/silts	Loams	Sandy/silty clays	Clay	Score*
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1	A.....2 B..... C.....

Risk of soil loss through harvesting

Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable crops	Scores*	
				Potatoes	Cereals
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				9	7
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....18 B..... C.....	A.....7 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5** - Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	**High Score 4** - Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	**Medium Score 3** - Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	**Low Score 2** - Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	**Score*** A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....4 C.....
Initial score					7
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.....10.5 C.....

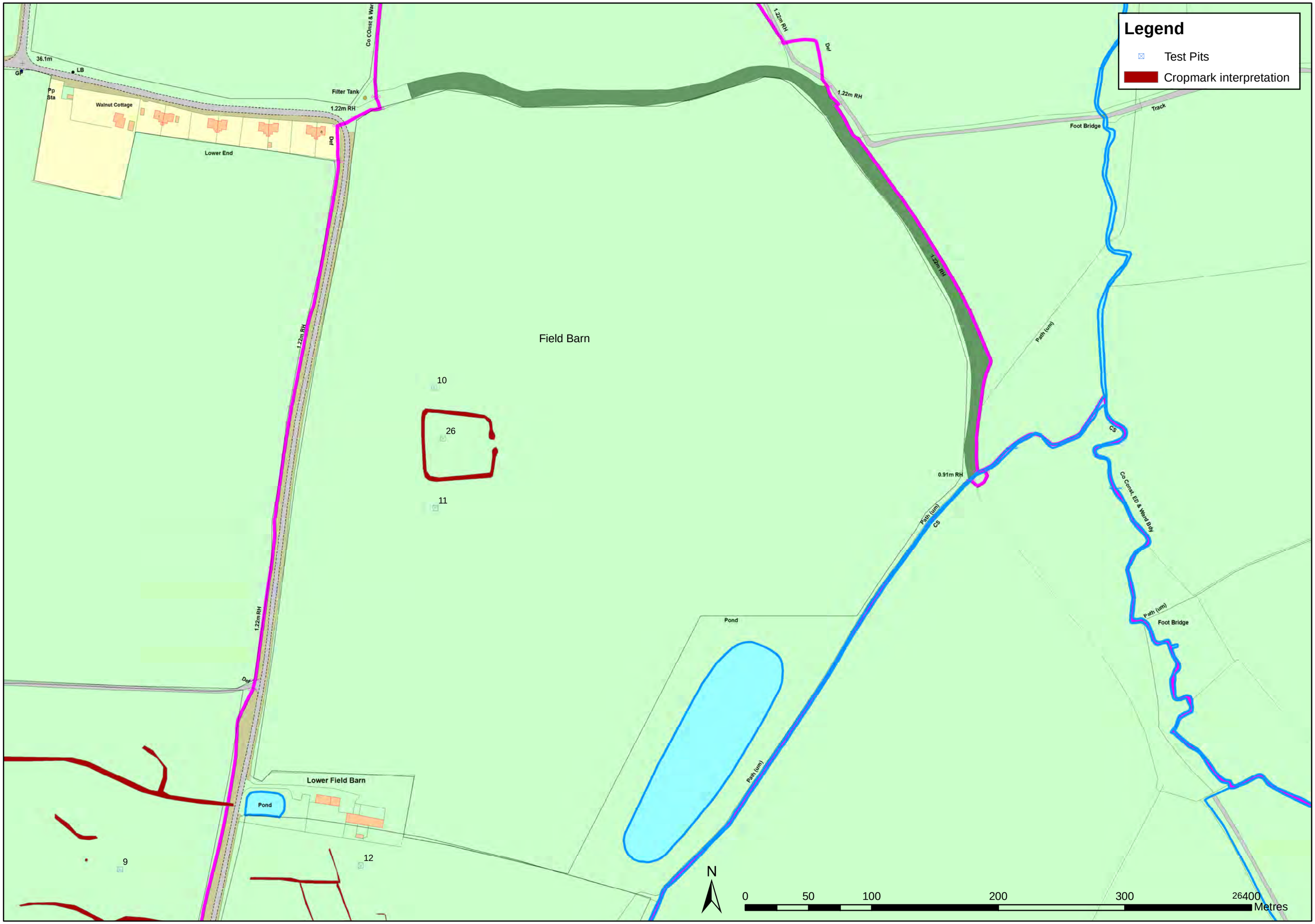
***Graded A-C according to quality of evidence**
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

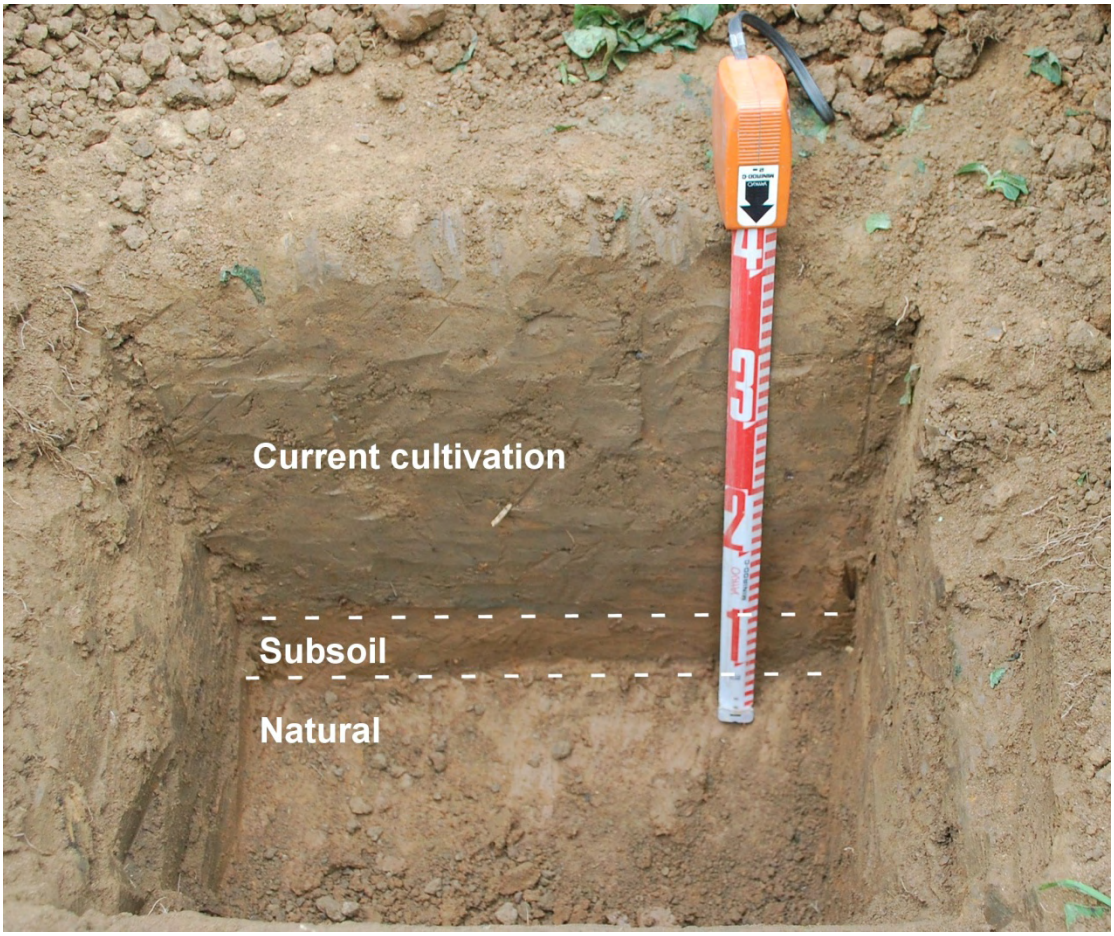
	Potatoes	Cereals
Management factors (out of 50)	47.5	21
Site intrinsic factors (out of 30)	18	7
Archaeological factors (out of 20)	10.5	10.5
Final risk score (out of 100)	76	38.5

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**


Legend
Test Pits
Cropmark interpretation
Field Barn
Walnut Cottage
Lower End
Filter Tank
1.22m RH
Def
36.1m
GP
LB
Pp Sta
Co COnst & Ward
Foot Bridge
Track
Path (um)
CS
0.91m RH
Co Const. ED & Ward Bdy
Pond
Lower Field Barn
10
11
12
26
9
N
0
50
100
200
300
400
Metres

Field: SO 994 1011 Field Barn						
				Range		
Test pits	**10**	**11**	**26**	**min**	**max**	**Average**
Current cultivation	0.32	0.32	0.31	0.31	0.32	0.32
Subsoil	0.07	>0.07	>0.11			
Natural	Unex					
Minimum buffer: 0.00						
Slope: Gentle						
Soil group in relation to water erosion: Moderate						
Soil group in relation to wind erosion: Silts/sands						



Test pit 10 facing south

COSMIC+ assessment sheet **Land parcel number:** SO 9943 1011 **Field name:** Field Barn

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....5 C.....	A..... B.....4 C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	A..... B.....3 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.....5 B..... C.....	A.....3 B..... C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A.....4 B..... C.....	
Initial score						19	14
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....47.5 C.....	A..... B.....21 C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	Steep (< 7°)		Moderate (3-7°)		Gentle (2-3°)		Level ground (< 2°)	Score*
	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 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 4	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 water erosion

Soil group	Peats	Sands/silts	Loams	Sandy/silty clays	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 through harvesting

Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable crops	Scores*	
				Potatoes	Cereals
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				11	9
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....22 B..... C.....	A.....9 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5** - Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	**High Score 4** - Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	**Medium Score 3** - Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	**Low Score 2** - Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	**Score*** A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....2 C.....
Initial score					5
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**

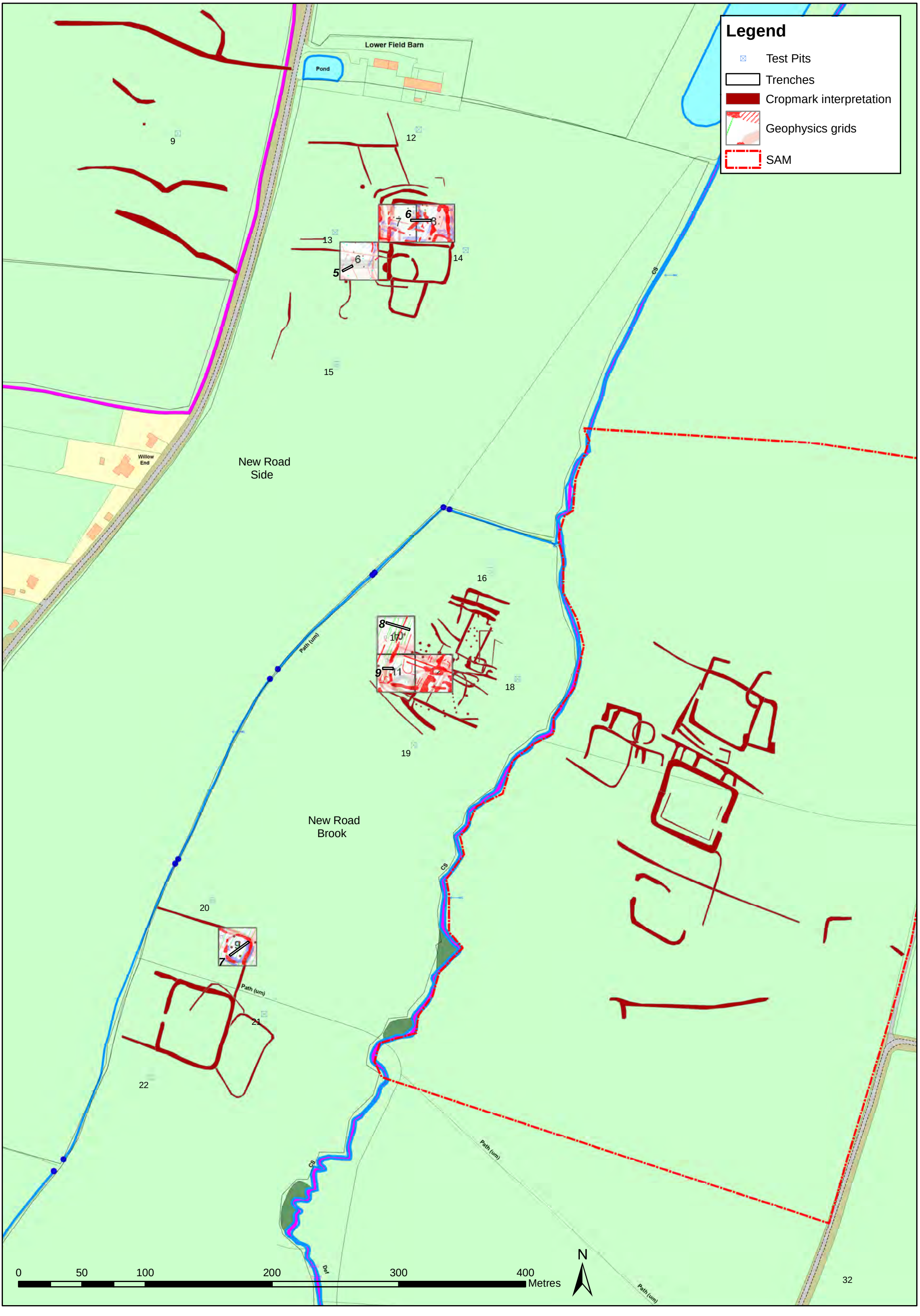
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

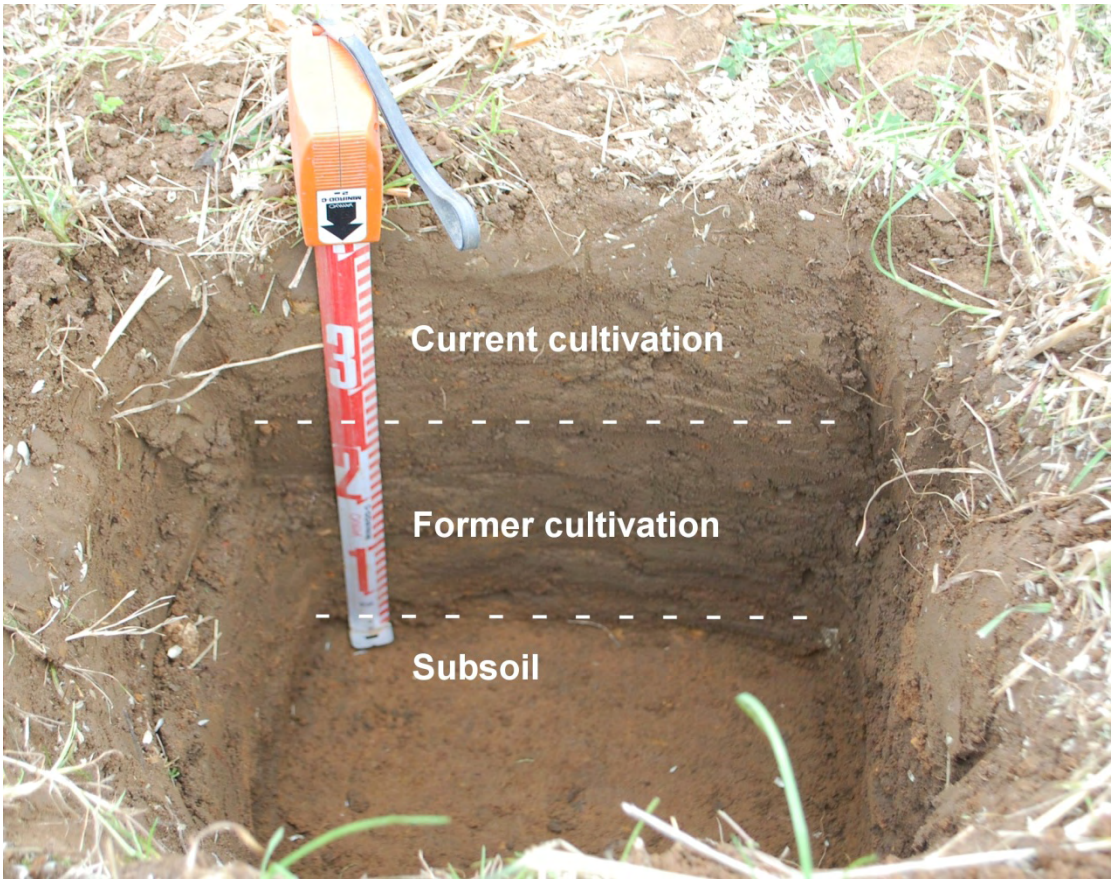
	Potatoes	Cereals
Management factors (out of 50)	47.5	21
Site intrinsic factors (out of 30)	22	9
Archaeological factors (out of 20)	5	5
Final risk score (out of 100)	74.5	35

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**


Legend
Test Pits
Trenches
Cropmark interpretation
Geophysics grids
SAM
Lower Field Barn
Pond
Willow End
New Road Side
New Road Brook
Path (um)
Path (um)
Path (um)
Path (um)
9
12
13
14
15
16
17
18
19
20
21
22
32
6
7
8
5
6
8
9
11
9
7
0
50
100
200
300
400
Metres
N

Field: New Road Brook										
								Range		
Test pits	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**min**	**max**	**Average**
Current cultivation	0.17	0.20	0.22	0.20	0.28	0.22	0.10	0.17	0.28	0.22
Former cultivation	0.12	0.20	0.18	0.15	0.14	0.17	0.26	0.12	0.20	0.16
Fill/reworked soil	None	>0.18	>0.22	None	None	None	None			
Subsoil	Unex	Unex	Unex	Unex	Unex	Unex	Unex			
Minimum buffer: 0.12										
Slope: Level ground										
Notes: Deposits beneath former cultivation in TPs 17 and 18 may be fills of archaeological features. Because of an uncertain boundary between current and former cultivation in TP 22, both figures are excluded from the range and averages.										
Soil group in relation to water erosion: Light										
Soil group in relation to wind erosion: Loams										



Test pit 21 facing east

New Road Brook

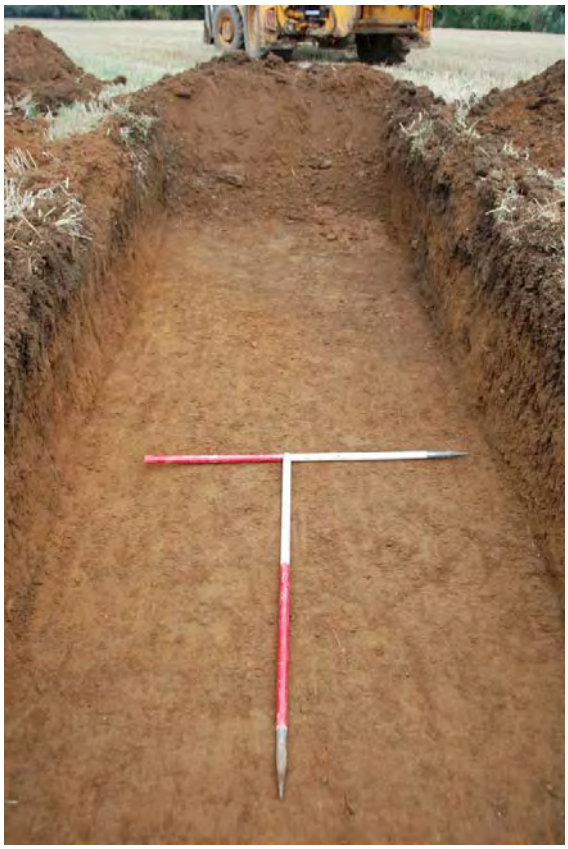
Trench 7

Maximum dimensions: Length: 18.40m Width: 1.55m Depth: 0.90m

Orientation: SW-NE

Context	Classification	Description	Depth below ground surface
700	Current and former cultivation	Soft mid greyish brown silt loam.	0.30m
701	Subsoil	Firm light greyish brown sandy silt. 0.10m deep across most of trench, deepening to 0.25m at north-east end over 706.	0.30-0.55m
702	Natural	Light yellowish/greyish brown medium sand.	>0.40m
703	Fill of 704	Redeposited 701 and 702.	0.43-0.80m
704	Pit	Partially exposed and excavated pit. Oval with sharp break of slope at top, concave sides and a rounded base. Measures at least 0.90m NW-SW by 0.60m NE-SW.	0.43-0.80m
705	Deposit	Firm light greyish brown silt mixed with approximately 25% light yellowish brown sand and few small gravels. Sealed by subsoil 701 and cut by 707. Unexcavated.	>0.40m
706	Fill of 707	Soft mid greyish brown sandy silt with few small limestone gravels, charcoal fragments and fire-cracked stones. Unexcavated.	>0.40m
707	Ditch	Partially exposed side of linear aligned NW-SE; at least 1.50m wide.	>0.40m

Trench 7 facing south-west (1m scales)



Trench 7: Ditch 707 facing north-east (1m scales)

Trench 7: Pit 704 facing south-east (1m scale)

New Road Brook

Trench 8

Maximum dimensions: Length: 19m Width: 1.50m Depth: 0.60-1.50m

Orientation: E-W

Context	Classification	Description	Depth below ground surface
801	Current cultivation	Friable dark greyish brown sandy silt with few small limestone gravels. Diffuse lower boundary.	0.15m
802	Former cultivation	As 801 but slightly firmer and more compact. Clear lower boundary.	0.15-0.35m
803	Subsoil	Firm dark brown sandy silt with few small to medium limestone fragment and charcoal flecks.	0.35m
804	Fill of 805	Firm dark yellowish brown sandy silt with common small limestone fragments and few medium angular fragments.	0.42-0.79m
805	Ditch	Linear, parallel-sided feature aligned approximately N-S. 1m wide. Sharp break of slope at top; east side slopes gradually and west side more steeply to rounded base.	0.42-0.79m
806	Fill of 807	Compact mid yellowish brown sandy silt with patches of small limestone fragments towards base. One sherd of Roman Severn Valley ware recovered.	0.40-1.04m
807	Ditch	Linear, parallel-sided feature aligned approximately N-S. 1.36m wide. Sharp break of slope at top; steep sides, gradual break of slope to gently rounded base.	0.40-1.04m
808	Fill of 809	Compact dark grey silt mixed with light reddish brown sand. Few small to large fragments of roughly-hewn sandstone and limestone. Concentration of large limestone blocks at base.	0.60-1.20m
809	Land drain	Linear, parallel-sided feature aligned approximately N-S, 0.60m wide. Sharp break of slope at top and steep sides breaking gently to flat base.	0.60-1.20m
810	Upper fill of 812	Compact mid grey/brown clay silt with abundant small limestone gravels.	0.58-0.84m

Context	Classification	Description	Depth below ground surface
811	Primary fill of 812	Compact mid brown and light reddish brown sandy silt with abundant small limestone gravels. Re-deposited natural.	0.63-1.30m
812	Ditch	Re-cut of 814. 0.82m wide. Gradual break of slope at top and steep sides breaking gradually to concave base. from surface with steep sides and a gradual break of slope to a concave base.	0.63-1.30m
813	Fill of 814	Compact mid reddish brown sandy silt. Common small limestone gravels. Becomes darker towards base. Cut by 812.	0.50-1.56m
814	Ditch	Linear, parallel-sided feature aligned approximately N-S, 1.83 wide. Gradual break of slope at top and steep sides becoming very steep towards base. Gradual slope at bottom to concave base.	0.50-1.56m
815	Deposit	Compact dark greyish brown silt with occasional gravels. Seals upper fills of ditches 814, 812 and 809.	0.48-0.68m
816	Deposit	Firm mid grey clay silt with common small to medium limestone gravels.	0.56-0.78m
817	Fill of 820	As 816 but with common aggregates of reddish brown sand.	0.70-1.30m
818	Fill of 820	Compact bluish grey silty clay. Few small limestone gravels and common small light brown mottles. Includes a large piece of roughly hewn rectangular limestone block.	1.00-1.30m
819	Fill of 820	Re-deposited natural. Firm light yellowish brown sandy silt with frequent small to medium limestone fragments.	0.86-1.30m
820	Ditch	Linear, parallel-sided feature aligned approximately N-S. Top of feature truncated by 814. Concave lower sides breaking gently to flat base.	0.70-1.30m
821	Fill of [822]	Ceramic pipe contained within firm dark greyish brown sandy silt with common small limestone fragments.	0.31-0.70m+

Context	Classification	Description	Depth below ground surface
822	Land drain	Linear, parallel-sided feature aligned approximately N-S. 1.33m wide.	0.31-0.71m+
823	Natural	Very compact dark greyish blue clay with few small to medium limestone gravels.	>0.36m
824	Fill of 812	As 817	0.70-1.30m

Trench 8 facing south-east (1m scales)

Trench 8 facing north-west (1m scales)

Trench 8: Ditches 805, 807, 812, and 814 facing south (1m scales)

New Road Brook

Trench 9

Maximum dimensions: Length: 8.45m Width: 1.50m Depth: 0.40m

Orientation: E-W

Context	Classification	Description	Depth below ground surface
900	Current cultivation	Soft greyish brown silt loam with few small limestone gravels and small aggregates of red sandstone.	0-0.30m
901	Former cultivation		
902	Subsoil	Firm mid greyish brown silty loam with few small limestone gravels and small aggregates of red sandstone and degraded pottery.	0.30-0.40m
903	Fill of 904	Very firm mid greyish brown silt loam with common small limestone gravels Paler and finer than 901. Unexcavated.	>0.40m
904	Ditch	Partially exposed linear feature aligned NE-SW. More than 2.30m wide.	>0.40m
905	Natural	Light greyish brown and yellowish brown sand with common limestone gravels.	>0.40m

Trench 9 facing west (1m scales)

COSMIC+ assessment sheet **Land parcel number:** SO 9842 7502 **Field name:** New Road Brook

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....4 C.....	A.....2 B..... C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	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.....5 B..... C.....	A.....3 B..... C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A.....4 B..... C.....	
Initial score						18	12
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....45 C.....	A.....18 B..... C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	**Steep (< 7°)**		**Moderate (3-7°)**		**Gentle (2-3°)**		**Level ground (< 2°)**	**Score***
	Rainfall > 800mm	**Rainfall < 800mm**	**Rainfall > 800mm**	**Rainfall < 800mm**	**Rainfall > 800mm**	**Rainfall < 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 4	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 water erosion

Soil group	**Peats**	**Sands/silts**	**Loams**	**Sandy/silty clays**	**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 through harvesting

Crop type	**Potatoes/sugar beet**	**Other root/tuber crops**	**Combinable crops**	**Scores***	
				Potatoes	**Cereals**
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				9	7
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....18 B..... C.....	A.....7 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5** - Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	**High Score 4** - Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	**Medium Score 3** - Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	**Low Score 2** - Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	**Score*** A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....3 C.....
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					A..... B.....7.8 C.....

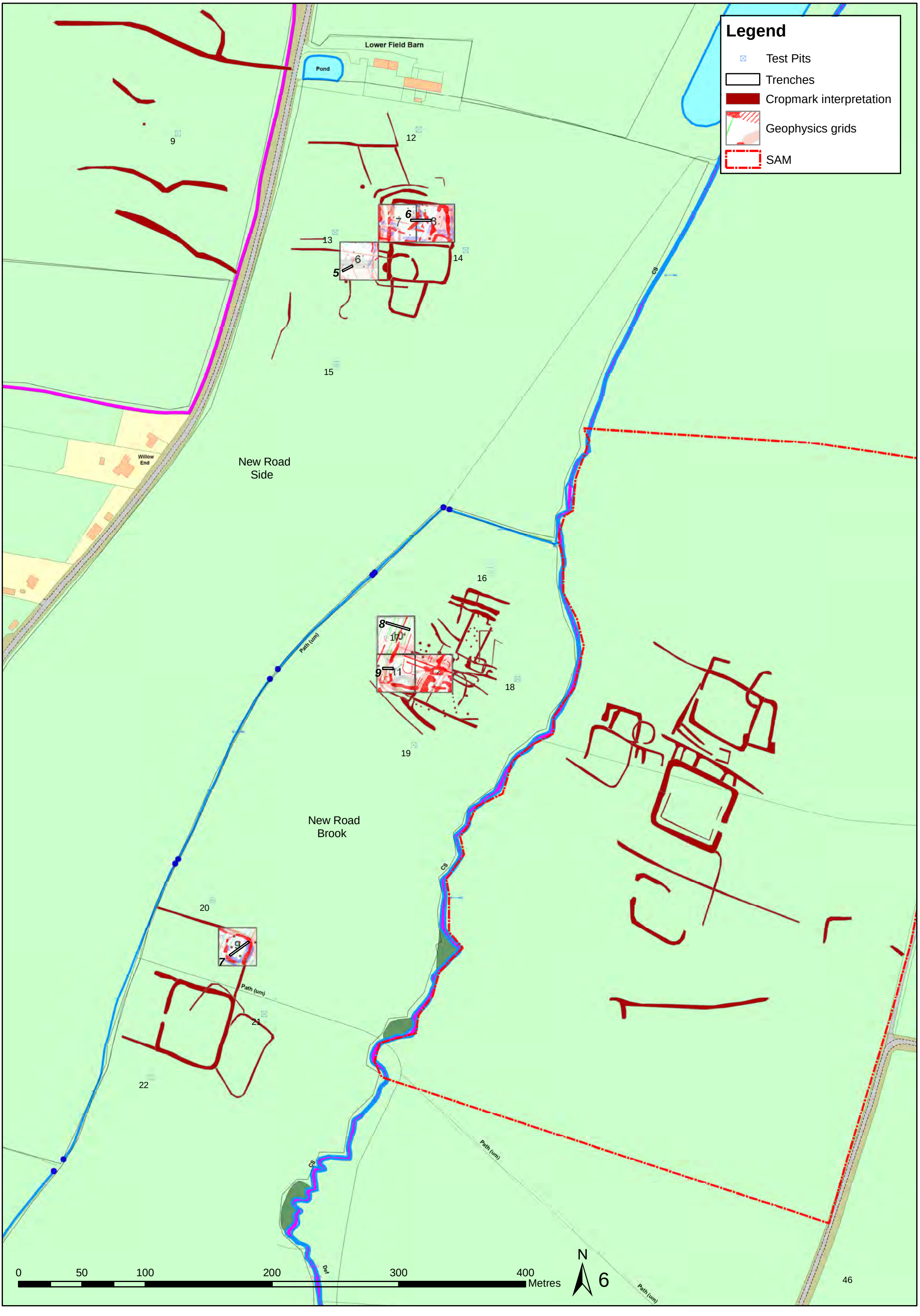
***Graded A-C according to quality of evidence**
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

	Potatoes	Cereals
Management factors (out of 50)	45	18
Site intrinsic factors (out of 30)	18	7
Archaeological factors (out of 20)	7.8	7.8
Final risk score (out of 100)	70.8	32.8

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**


Legend
Test Pits
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Geophysics grids
SAM
Lower Field Barn
Pond
Willow End
New Road Side
New Road Brook
Path (um)
Path (um)
Path (um)
Path (um)
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11
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50
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200
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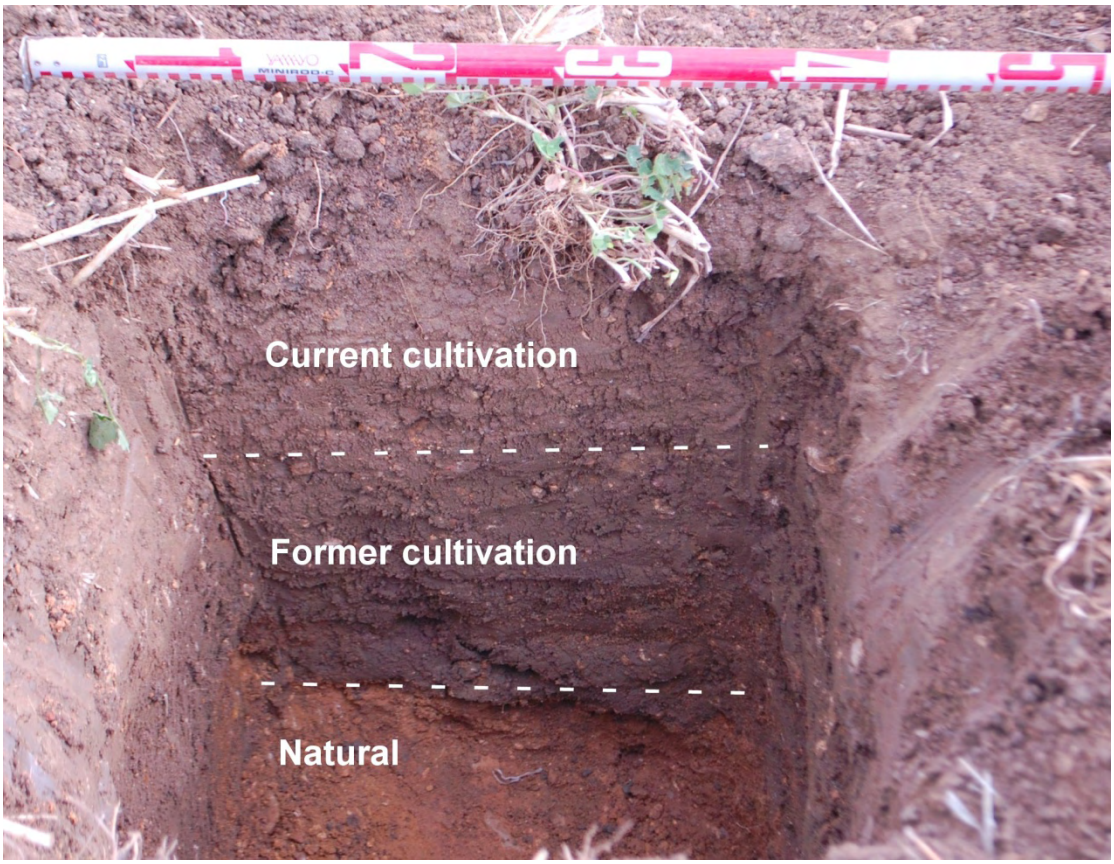
Metres
N
6

Field: New Road Side							
					Range		
Test pits	**12**	**13**	**14**	**15**	**min**	**max**	**Average**
Current cultivation	0.19	0.22	0.22	0.10	0.19	0.22	0.21
Former cultivation	0.15	0.18	0.07	0.25	0.07	0.25	0.16
Subsoil	None	None		None			
Natural	Unex	>0.05		Unex			
Minimum buffer: 0.07							
Slope: Level ground							
Notes: Test pit 14 showed >0.18m of alluvium beneath former cultivation. Anomalous depths recorded in TP 15 are excluded from range and average.							
Soil group in relation to water erosion: Light							
Soil group in relation to wind erosion: Loams							



Test pit 13 facing north

New Road Side

Trench 5

Maximum dimensions: Length: 8.90m Width: 1.55m Depth: 0.55m

Orientation: NE-SW

Context	Classification	Description	Depth below ground surface
500	Current cultivation	Soft mid greyish brown silt loam with small limestone gravels and few charcoal fragments and flecks. Also common small roots. Weak blocky peds. Clear lower boundary.	NE: 0.12-0.36m SW: 0.10-0.46m
501	Former cultivation		
502	Subsoil	Firm mid greyish brown sandy silt with N-S linear spreads of mid greyish, slightly bluish, grey sandy silt; the latter corresponding broadly to the direction of last cultivation. Few reddish brown mottles in both components. Sharp lower boundary.	NE: 0.36-0.47m SW: 0.47-0.55m
503	Natural	Loose, light reddish/greyish brown sand with abundant small limestone gravels.	>0.55m

Trench 5 facing north-east (1m scales)

Trench 5 facing south-west (1m scales)

New Road Side

Trench 6

Maximum dimensions: Length: 15.25m Width: 1.55m Depth: 0.83m

Orientation: E-W

Context	Classification	Description	Depth below ground surface
600	Current cultivation	Soft mid greyish brown sandy silt with common small limestone fragments and small roots. Weak blocky peds. Clear lower boundary with 603, 606, and 608. Sharp lower boundary with 616.	0.21m
601	Former cultivation		
602	Subsoil	Firm mid brown sandy silt with common small to medium limestone fragments. 0.53m deep at east end of trench but peters out 3.30m to west.	0.35m
603	Reworked soil/midden	Soft mid greyish brown sandy silt loam with common small limestone gravels and few charcoal flecks. Also fire reddened stones, pot sherds, and fragments of animal bone. Falls off abruptly to east. Paler towards bottom of deposit. Diffuse lower boundary.	0.35-0.78m
604	Fill of 605	Firm mid greyish brown sandy silt with few small limestone gravels and olive mottles. Unexcavated.	>0.70m
605	Ditch	Linear, parallel sided feature aligned N-S; 1.20m wide.	>0.70m
606	Fill of 607	Soft mid greyish brown sandy silt loam with common small to medium limestone gravels and few aggregates of light reddish/yellowish brown sand. Slightly darker than 603 with more common gravels. Unexcavated.	>0.44m
607	Pit	Small pit partially exposed in north facing section near east end of trench. At least 0.55m long by 0.25m wide. Sharp break of slope and steeply sloping sides.	>0.44m
608	Fill of 609	Firm mid greyish brown sand silt with few limestone gravels and charcoal fragments and at least one fire cracked stone. Unexcavated.	>0.40m

Context	Classification	Description	Depth below ground surface
609	Pit	Small oval feature 0.54m long by 0.46m wide.	>0.40m
610	Fill of 611	Firm mid greyish brown sandy silt with common limestone fragments. Also contains few charcoal fragments and small aggregates of reddish brown sand. Unexcavated.	>0.37m
611	Ditch	Linear, parallel sided feature aligned N-S; 0.33m wide.	>0.37m
612	Fill of 613	Firm mid greyish brown sandy silt with common small limestone gravels and few charcoal fragments and flecks. Sealed by subsoil 616. Unexcavated.	>0.50m
613	Ditch	Linear parallel sided feature aligned N-S and 1.40m wide. Cut by 615.	>0.50m
614	Fill of 615	Firm dark greyish brown sandy silt containing few small limestone fragments as well as charcoal fragments and flecks. Sealed by Subsoil 616.	>0.50m
615	Pit	Elongated oval feature measuring 1.50m E-W by 0.66m N-S. Cuts 613.	>0.50m
616	Subsoil	Firm mid brown sandy silt with common small to medium limestone fragments. Deepest at the west end of trench becoming shallower towards east end. Sealed by 603.	0.40-0.52m
617	Natural	Firm light reddish/yellowish brown medium sand with few small limestone gravels.	>0.60m
618	Fill of 619	Firm dark greyish brown sandy silt with common small limestone gravels and few charcoal fragments and aggregates of reddish/yellowish brown sand. Unexcavated.	>0.72m
619	Pit	Small pit, partially exposed in south facing section at the far east end of trench. Visible dimensions 0.60m E-W by 0.30m N-S.	>0.72m

Trench 6 facing west (1m scales)

Trench 6: Pit 609 and ditch 611 facing west (1m scales)

Trench 6: Pit 615 and ditch 613 facing east (1m scales)

Trench 6: Reworked soil/midden 603 (in section) facing north-west (1m scales)

COSMIC+ assessment sheet **Land parcel number:** SO 9842 8145 **Field name:** New Road Side

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....4 C.....	A.....2 B..... C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	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.....5 B..... C.....	A.....3 B..... C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A.....4 B..... C.....	
Initial score						18	12
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....45 C.....	A.....18 B..... C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	Steep (< 7°)		Moderate (3-7°)		Gentle (2-3°)		Level ground (< 2°)	Score*
	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 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 4	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 water erosion

Soil group	Peats	Sands/silts	Loams	Sandy/silty clays	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 through harvesting

Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable crops	Scores*	
				Potatoes	Cereals
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				9	7
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....18 B..... C.....	A.....7 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5** - Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	**High Score 4** - Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	**Medium Score 3** - Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	**Low Score 2** - Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	**Score*** A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....3 C.....
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					A..... B.....7.8 C.....

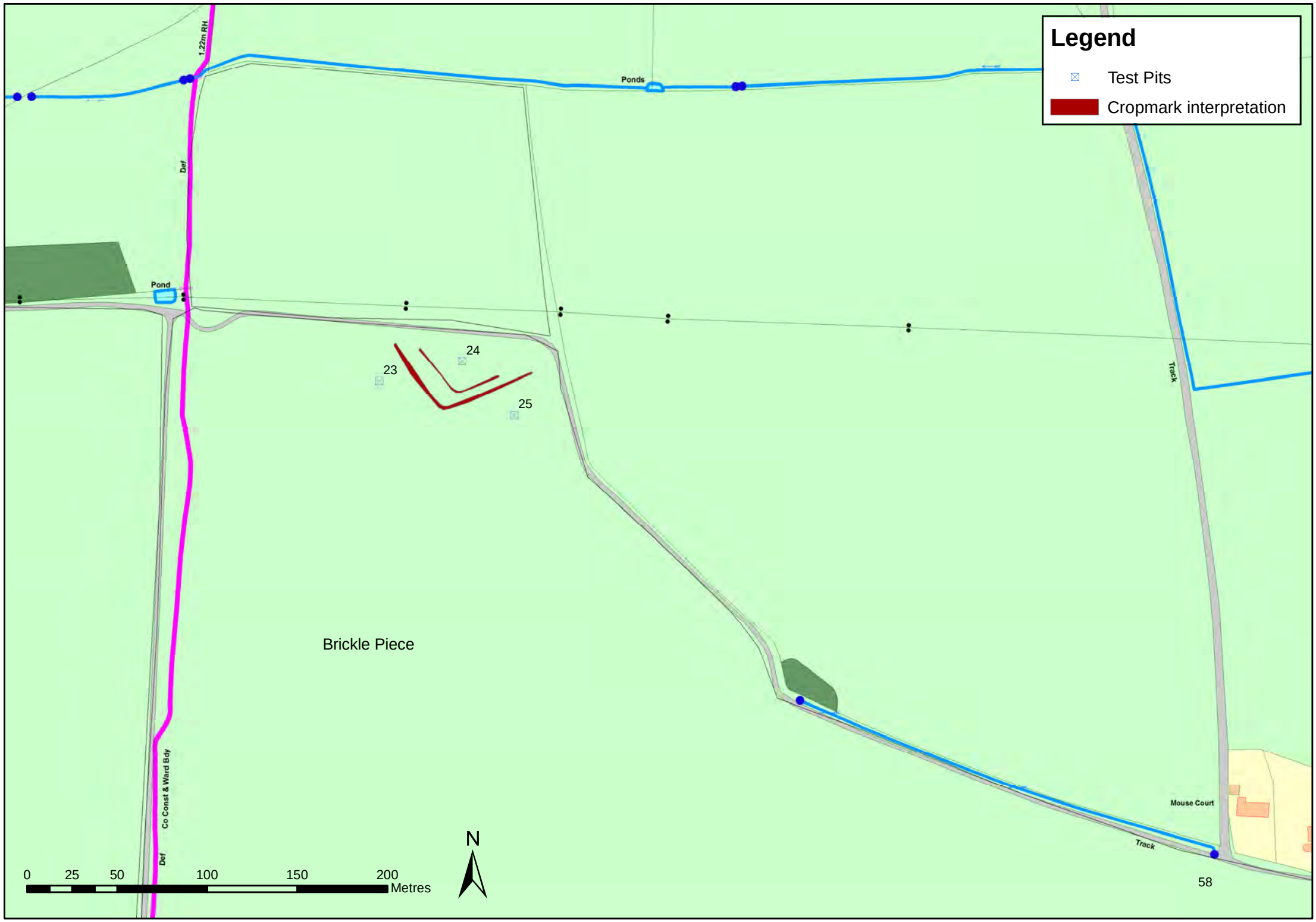
***Graded A-C according to quality of evidence**
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

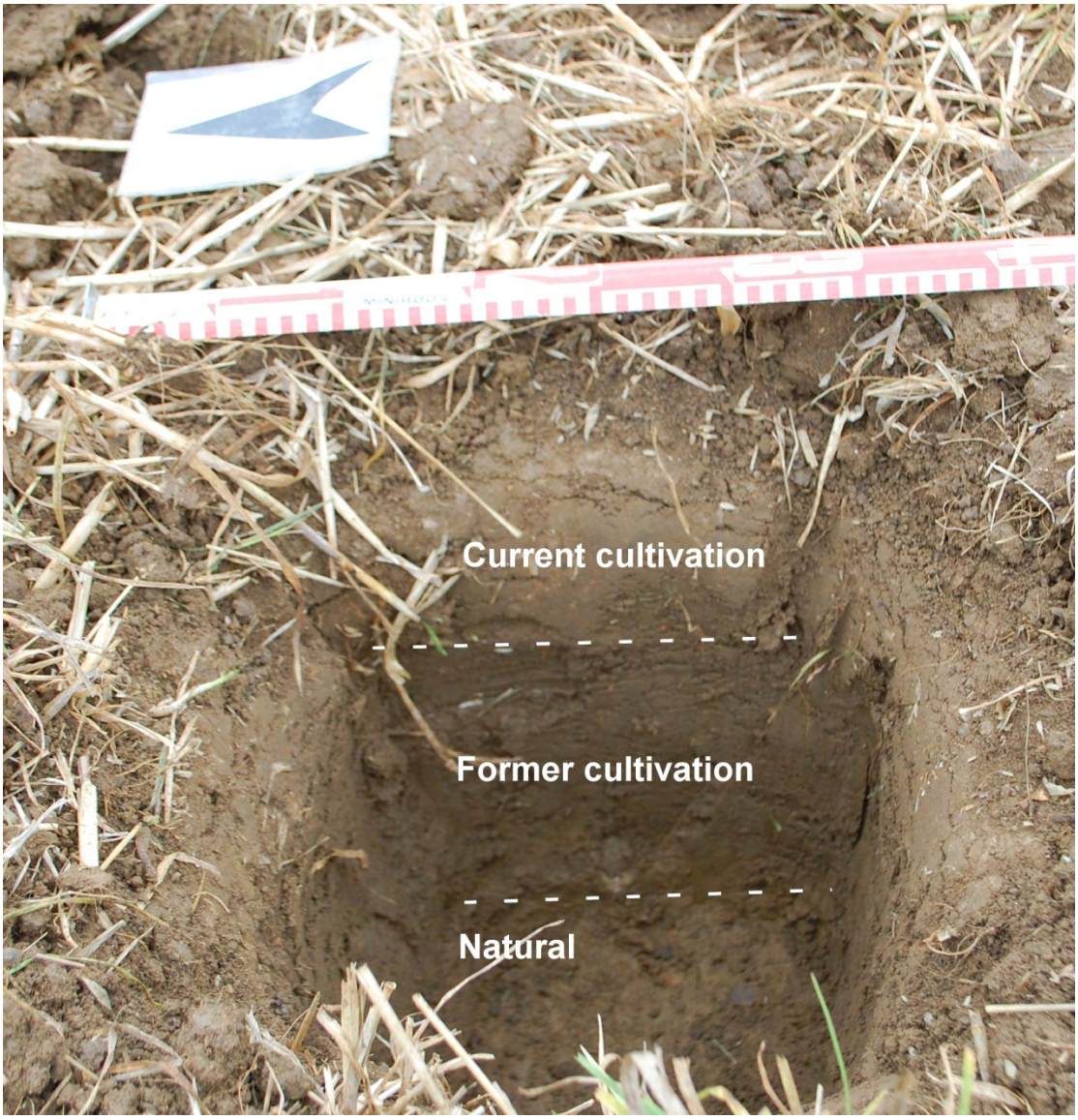
	Potatoes	Cereals
Management factors (out of 50)	45	18
Site intrinsic factors (out of 30)	18	7
Archaeological factors (out of 20)	7.8	7.8
Final risk score (out of 100)	70.8	32.8

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**


Legend
Test Pits
Cropmark interpretation
1.22m RH
Def
Ponds
Pond
24
23
25
Track
Brickle Piece
Co Const & Ward Bdy
Def
Mouse Court
Track
58
N
0
25
50
100
150
200
Metres

Field: Brickle Piece						
				Range		
Test pits	**23**	**24**	**25**	**min**	**max**	**Average**
Current cultivation	0.14	0.16	0.13	0.13	0.16	0.14
Former cultivation	0.14	0.10	0.21	0.10	0.21	0.15
Subsoil	None	0.05	None			
Natural	>0.01	Unexc.	>0.04			
Minimum buffer: 0.10						
Slope: Level ground						
Soil group in relation to water erosion: Heavy						
Soil group in relation to wind erosion: Sandy clay/silty clay						



Test pit 23 facing east

COSMIC+ assessment sheet **Land parcel number:** SO 9743 9427 **Field name:** Brickle Piece

	Serious risk Score 5	High risk Score 4	Medium risk Score 3	Low risk Score 2	Minimum risk Score 1	Scores*	
						Potatoes	**Cereals**
Buffer	No buffer	Shallow buffer (< 10cm)	Moderate buffer (10-15cm)	Deep buffer (15-25cm)	Very deep buffer (> 25cm)	A..... B.....5 C.....	A.....3 B..... C.....
Cultivation depth and method	Very deep ploughing (> 30cm)	Deep ploughing (25-30cm)	Normal ploughing (20-25cm)	Disc/tine cultivation or shallow ploughing (10-20cm)	Direct drilling (< 10cm)	A..... B.....5 C.....	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.....5 B..... C.....	A.....3 B..... C.....
Subsoiling	Frequent subsoiling (< 3 years)	Regular subsoiling (3-6 years)	Occasional subsoiling (7-15 years)	No subsoiling		A.....4 B..... C.....	
Initial score						19	13
Weighting	Any at serious risk = 2.5 Any at high risk = 1.5 Any at minimum risk = 0.5					2.5	1.5
Initial score multiplied by weighting						A..... B.....47.5 C.....	A.....19.5 B..... C.....

***Graded A-C according to quality of evidence**

Site intrinsic factors

Susceptibility of cultivated soil to water erosion

Average annual rainfall <800mm

Slope & soil group	Steep (< 7°)		Moderate (3-7°)		Gentle (2-3°)		Level ground (< 2°)	Score*
	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 800mm	Rainfall > 800mm	Rainfall < 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 4	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 water erosion

Soil group	Peats	Sands/silts	Loams	Sandy/silty clays	Clay	Score*
	Serious Score 5	High Score 4	Medium Score 3	Low Score 2	Minimal Score 1	A.....2 B..... C.....

Risk of soil loss through harvesting

Crop type	Potatoes/sugar beet	Other root/tuber crops	Combinable crops	Scores*	
				Potatoes	Cereals
	Serious Score 5	High Score 4	Medium Score 3	A.....5 B..... C.....	A.....3 B..... C.....
Initial score				8	6
Weighting	Any of above in grey-shaded box = 2			2	1
Initial score multiplied by weighting				A.....16 B..... C.....	A.....6 B..... C.....

***Graded A-C according to quality of evidence**

Archaeological factors					
Survival and quality of evidence **[Other evidence: e.g. -Documentary (HER records, fieldwork reports) -Oral (information from farmers etc) -Material (artefacts in museums or private collections]**	**Serious Score 5**	**High Score 4**	**Medium Score 3**	**Low Score 2**	**Score***
	- Upstanding earthworks/structures - Well preserved deposits relevant to national research agendas - Other evidence indicating deposits of national significance	- Positive and negative features demonstrated by excavation - Positive and negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to regional research agendas - Less well-preserved deposits relevant to national research agendas - Other evidence indicating deposits of regional significance	- Negative features demonstrated by excavation - Negative features indicated by cropmarks/anomalies - Well preserved deposits relevant to county research agendas - Less well preserved deposits relevant to regional research agendas - Dense or diagnostic ploughsoil scatters - Other evidence indicating deposits of county significance	- Truncated negative features demonstrated by excavation - Truncated negative features indicated by other evidence - Diffuse or undiagnostic ploughsoil scatters - Other evidence indicating deposits of local significance	A..... B.....3 C.....
Significance†	National significance	Regional significance	County significance	Local significance	A..... B.....2 C.....
Initial score					5
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**
†Considered in relation to research agendas and/or current state of knowledge

Final risk scores

	Potatoes	Cereals
Management factors (out of 50)	47.5	19.5
Site intrinsic factors (out of 30)	16	6
Archaeological factors (out of 20)	5	5
Final risk score (out of 100)	68.5	30.5

Risk levels

Total risk score	Risk level
0-30	**Minimal risk**
30-40	**Low risk**
40-50	**Moderate risk**
50-50	**High risk**
60+	**Serious risk**