



Programme Area: Bioenergy

Project: Refining Estimates of Land for Biomass

Title: D1 Field Survey Plan

Abstract:

The methodology of the field study undertaken during the Refining Estimates of Land for Biomass (RELB) project

Context:

Many significant pieces of work have been undertaken to assess UK “2nd generation” bioenergy feedstock production potential. The RELB project was undertaken to help refine and sense-check these existing estimates, including the ETI's own in-house modelling assumptions, in order to understand what further ‘correction factors’ (if any) may need to be applied to adjust existing estimates. In addition, the project aimed to better understand the process for converting land to 2nd generation bioenergy feedstocks and the impact planting these feedstocks could have on farm businesses. The RELB project had four distinct work packages:

1. A review of latest theoretical estimates of land available for biomass production in the UK and Europe.
2. A desk study to identify additional constraint layers which could be used to refine the ETI's own in-house land availability constraint masks. The suitability of these additional constraint layers was tested through field surveys.
3. A review of the steps and agencies involved in land use change to bioenergy crops and forestry.
4. Case studies of three farmers who have planted bioenergy crops, focusing on the financial and food production impacts of their decision.

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Refining Estimates of Land for Biomass



D1 Field Survey Plan

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1 Objective

To design and carry out a field survey to ground truth theoretical estimates of potentially available land for energy crop production from the desk based study.

2 Method

2.1 Approach to sub-cell selection

The desk study fed into the field survey by way of identifying additional areas of land that would be unavailable land for energy crop production through the use of additional constraint datasets. Those areas identified as unavailable in addition to the original UKERC 9w mask is termed as ‘newly unavailable’ (see desk study report for how ‘newly unavailable’ sells were identified).

The 50 km x 50 km cells selected by ETI for the field survey included;

- Cell No. 100 Dumfries and Galloway (1320 originally available sub-cells – UKERC 9w, of which 318 were identified as ‘newly unavailable’ following additional mapping in the early stages of the desk study),
- Cell No. 46 Leicester and Northamptonshire (2053 originally available sub-cells – UKERC 9w, of which 280 became ‘newly unavailable’
- Cell No. 19 Kent and Sussex (1565 originally available sub-cells – UKERC 9w, of which 696 became ‘newly unavailable’).

These 50 km x 50 km cells were over-laid with a grid (using the Ordnance Survey gridlines) dividing each into 1 km sub-cells showing areas of land ‘available’ or ‘newly unavailable’ on a digital map of scale 1:25000.

Sub-cells were selected using a random number generator to identify 10% of the originally available sub-cells. In the two cells, where the total originally available cells was less than 2000, additional sub-cells were selected to bring the sample size up to a minimum of 200 cells. In addition 50 backup sub-cells were identified (one for every four sub-cells in the survey) to use as back up assessment sub-cells in the event that a particular sub-cell could not be assessed due to poor / unsafe access or lack of visibility.

The original sample selection had to be completed prior to the identification of the ‘newly unavailable’ sub-cells due to delays in accessing the UKERC 9w 100m raster layers. Therefore, a cross check was done after cell selection was completed to ensure that sufficient ‘newly unavailable’ sub-cells were included in the survey sample.

Table 1 Number of ‘available’ and ‘newly unavailable’ sub-cells in cell and survey sample

Cell	Originally available whole cell	Newly unavailable whole cell	Number of cells surveyed	Available in surveyed sample	Newly unavailable in surveyed sample
Cell 100	1320	318	202	156	46
Cell 046	2053	280	197	176	21
Cell 019	1565	696	206	125	80

The randomly selected cells used in the field survey were chosen after the available squares had been identified using the UKERC 9w mask and are visible outlined in red on the overview maps for each of the 50 km x 50 km cells in Appendix 1.

2.1.1 Unique identification

To enable the 1 km x 1 km sub-cells to be easily identified by the surveyors on the ground a unique code was used. This code consisted of the; 50 km x 50 km cell number, followed by count to the right (easting), followed by count to the top (northing) with the easting and northing being numbered from 01-50 starting in the bottom left hand corner of the 50 km x 50 km cell. This gave a unique 7 digit code for each sub-cell. E.g. 046-11-02 is the M40/A46 junction near Warwick. These cell references were included on the Excel recording template as unique identifiers for each data set. They were then cross referenced with the GIS data to ensure consistency and comparability between the two data sets.

2.1.2 Access to sub-cell

A sub-cell was deemed to be inaccessible if there was no public right of way on or within view of the sub-cell, or if motor vehicle access was not possible within 1 km of the sub-cell. Where the only access to the sub-cell was on a motorway or other main road where it was unsafe to stop and park up a vehicle the cell will also be deemed to be inaccessible. In addition there were a number of sub-cells that were accessible, but the visibility from the access point(s) was insufficient to see more than 50% of the sub-cell (e.g. due to tall hedges) these sub-cells were also excluded from the survey. Where the sub-cell was not surveyed it was coded un-surveyed and the reason was noted on the data recording sheets. The nearest backup sub-cell for that location was then assessed instead.

2.2 Approach to sub-cell assessment

The survey method was the optimum choice of design that allowed for the collection of relevant quantifiable and qualitative data over as many of the selected cells as possible, with the time and resources available and without the need to gain permissive access over the land parcels in question.

The selected survey sub-cells were printed out onto digital maps at 1:25000 scale, with the boundaries of the survey square clearly marked for the surveyor – the surveyor was not aware as to whether or not the sub-cell was deemed to be ‘available’ or ‘newly unavailable’. Working through the list of 1 km randomly selected sub-cells, the surveyor determined from the 1:25000 map a prominent point, or up to 3 points, at which to survey and record as much of the 1 km sub-cell as possible. The surveyor then visibly assessed each sub-cell, completing a survey template (see Appendix 2) to answer and identify a select number of parameters that determined what percentage of the sub-cell being viewed is potentially available for the growing of energy crops.

Land was deemed available if it was not in a residential or built up area, the land type was arable or other cropping, improved grassland, scrub, plantation (broadleaved / coniferous) or was already growing energy crops, access was possible with large machinery and haulage vehicles, there were no steep slopes or gradients (excess of 7°) or immovable features already present on the area such as solar panels or wind turbines and land was not under water at the time of survey.

The sub-cell was deemed to be unavailable if more than 50% of the land area was deemed unavailable through not matching with the above or, it was deemed inaccessible or where the woodlands present in the sub-cell were thought to be a protected habitat i.e. Caledonian Pine Forest, Lowland Beech and Yew, Wet Woodland or Upland Oak woodlands.

Where a visual assessment of more than 50% of the sub-cell was not possible the cell was discarded and the next back-up sub-cell was surveyed in its place.

For each sub-cell the following steps were taken;

- Consider the most appropriate and methodical route to survey the chosen cells.
- Identify assessment point or points and note grid reference on the Excel template (If there was no road or track from which to view the sub-cell and no access points visible on the map the sub-cell was discarded and marked as inaccessible with a reason).
- Travel to sub-cell (if all assessment points proved to be unsafe, busy road/dual carriageway with no safe stopping points the sub-cell was discarded and marked as inaccessible with reason, then the appropriate backup sub-cell was selected and assessed in its place.)
- Complete Excel template (see example Appendix 2) from one or more assessment points dependent on visibility, but only filling in one column per sub-cell.
- Mark on a printed map the cell code on the 1 km square being assessed and with an **x** location of assessment, and with a **p**, for where photos were taken, if more than one assessment point.
- Take photographs as instructions below.

2.2.1 Photographs

The most appropriate assessment point for taking photos was identified, favouring the one with best visibility of the whole sub-cell. In order to help identify the photographs going forwards the first photograph taken at each location was of the map with the written features marked as above, then where practical four other photographs were taken in the order North, East, South and West from the assessment point. If a particular direction was out of the sub-cell (i.e. assessment point was on the boundary) then a blank photo (of hand or lens cap) was taken to ensure that there were the correct number of images for each sub-cell (five photographs in total).

In order for ETI to be able to make use of the photographs in the future and identify which cells they were from it was important that the photographs were saved in a way such that they can be recovered. This was ensured by:

- Surveyors recording data in template in the order that they assessed the sub-cells, therefore the order of the photographs taken was the same order as that used in the assessment of the sub-cells.
- The surveyor always took five photographs in the order map (to cross reference with data), north, east, south and west (or thereabouts).
- Each day's photographs were saved in a new folder labelled with the 50 km x 50 km grid cell number, the surveyors name and the date – this will allow the photographs to be associated with the cells assessed by that surveyor on that date. E.g. Cell019_SoniaBrunton_240815.

2.2.2 Data capture and saving documents

Data captured on the Excel spreadsheet was down loaded at the end of each day's surveying and stored on a removable device.

At the end of each day's surveying where internet connection was available, then all documents and photograph folders were uploaded to the share point/Lan. OR as soon as connection was available. Where numbers and size of photos was too large these were saved in appropriate named folders to a removable device and sent to a central location.

2.3 Training of field surveyors

A training session was provided to ensure all surveyors had knowledge of the background to the survey and understood the outcome requirements of the field survey and techniques applied.

A risk assessment document (appendix 3) and health and safety document (see separate document) were carried out and sent to all surveyors before the survey started to ensure good safety procedures were in place and clear to each surveyor, a return statement of having read the documents was returned to the field study leader. Steps were taken to ensure that the field surveyors were aware of the risks of lone working, including provision of a PowerPoint training course that highlighted risks. Surveyors were offered the option of using a remote worker alarm if they felt any of the areas that they were working in were high risk.

Each surveyor was sent the relevant documents including the 'Field study plan', health and safety reporting procedures, equipment list, maps and Excel recording forms, prior to the training taking place.

The training consisted of working through an example of how a sub-cell should be assessed using images of the sub-cell. A step by step approach was to be taken going through the Excel sheet questionnaire and interpretations for the wording of each question was made clear as to the approach to take to ensure consistency in recording land use and estimating size of fields with percentage cover. To visually estimate field size an example was suggested that an international rugby field is very close to 1 ha in size and the green area inside a 400 m running track at a sports stadium is just over 1 ha (1.12 ha). Surveyors were also encouraged to use the detail provided on the maps to help them determine what proportion of the sub-cell each feature occupied. Where visibility of the sub-cells was borderline 50-60% of cell visible, e.g. due to tall hedges, surveyors were encouraged to use Google satellite images to identify whether the land they were unable to see clearly was likely to be available or not. To help visually assess the angle of a slope a diagram of each category was attached to the questionnaire, together with photos and descriptions of some of the habitats that need recording.

2.3.1 Ensuring consistency

Each surveyor was contacted by the field study leader individually following the first day's surveying to clarify any challenges raised, discuss discrepancies or questions that had arisen once out in the field. As each surveyor uploaded the day's data to the sharepoint, the data file was quality checked by the field study leader, and any unusual patterns were picked up and queried as the project progressed to ensure that the assessments for each surveyor were as consistent as possible with the other surveyors. A proportion of the data was cross referenced against the field maps and satellite imagery and any anomalies were discussed with the individual surveyor. Where information from discussion with one surveyor was thought to be relevant for recording consistency, this was conveyed immediately to all surveyors. A briefing session was undertaken at the end of the first week's surveying, to feed back any challenges and ensure that surveyors were capturing data consistently.

Health and Safety Awareness

All surveyors that were remote working or working alone had in place a "buddy" system. This the following details to be left with a nominated person.

- Date of visit
- The expected start and latest finish time working in the field
- Areas to be visited
- Registration of vehicle used
- Address and telephone number of location to which you are returning
- Any relevant medical details

When leaving a vehicle a notice was shown in the window stating the vehicle was being used by ADAS surveying team and a contact number of the surveyor and Field Survey Manager who should be contacted where a problem had occurred.

All surveyors set an alert on a mobile phone to remind them to text or phone a safety message and report in to the Field Survey Manager, [REDACTED] either by Text or phone message at the end of each day. If surveyors felt they were working in high risk areas they were given the option of carrying a SkyGaurd system, this provides an emergency alarm that is linked directly to the emergency services, providing a GPS location of the person. In addition [REDACTED] provided a personal safety presentation which was shared with the surveyors. This raised their awareness of the potential risk that they may meet and provided them with recommendations as to how to minimise those risks. This presentation covered personal assault, travelling in vehicles, staying away and dealing with livestock amongst other risks.

Surveyors were aware of reporting major injuries/incidences immediately without delay to:-

1st call to [REDACTED] Head of Compliance and Risk Management

2nd call to inform the Project Manager [REDACTED]

Minor injuries/incidences were be reported to [REDACTED] who kept a log and briefed the project manager on a monthly basis. Throughout the duration of the surveying part of the project there were no minor or major incidences that were reported by any of the surveyors.

All surveyors were required to read and understand the following ADAS Safe Operating Systems (SOPs) in advance of starting surveying.

- SAFE 001 Health and Safety Risk Management
- SAFE 004 Reporting Accidents, Illnesses and Dangerous Occurrences
- SAFE 006 Personal Protective Equipment and Safety Equipment Guidelines
- SAFE 008 Health and Safety: Guidelines for Outdoor and Remote Working

All surveyors were also aware and have a copy of the ETI project incidence protocol, although there initial points of contact are summarised above and it was the responsibility of David Knowles in the case of a major incident and Sarah Wynn in the case of a minor incident to implement the ETI project incident protocol.

Appendix 1 – Sub-cells surveyed

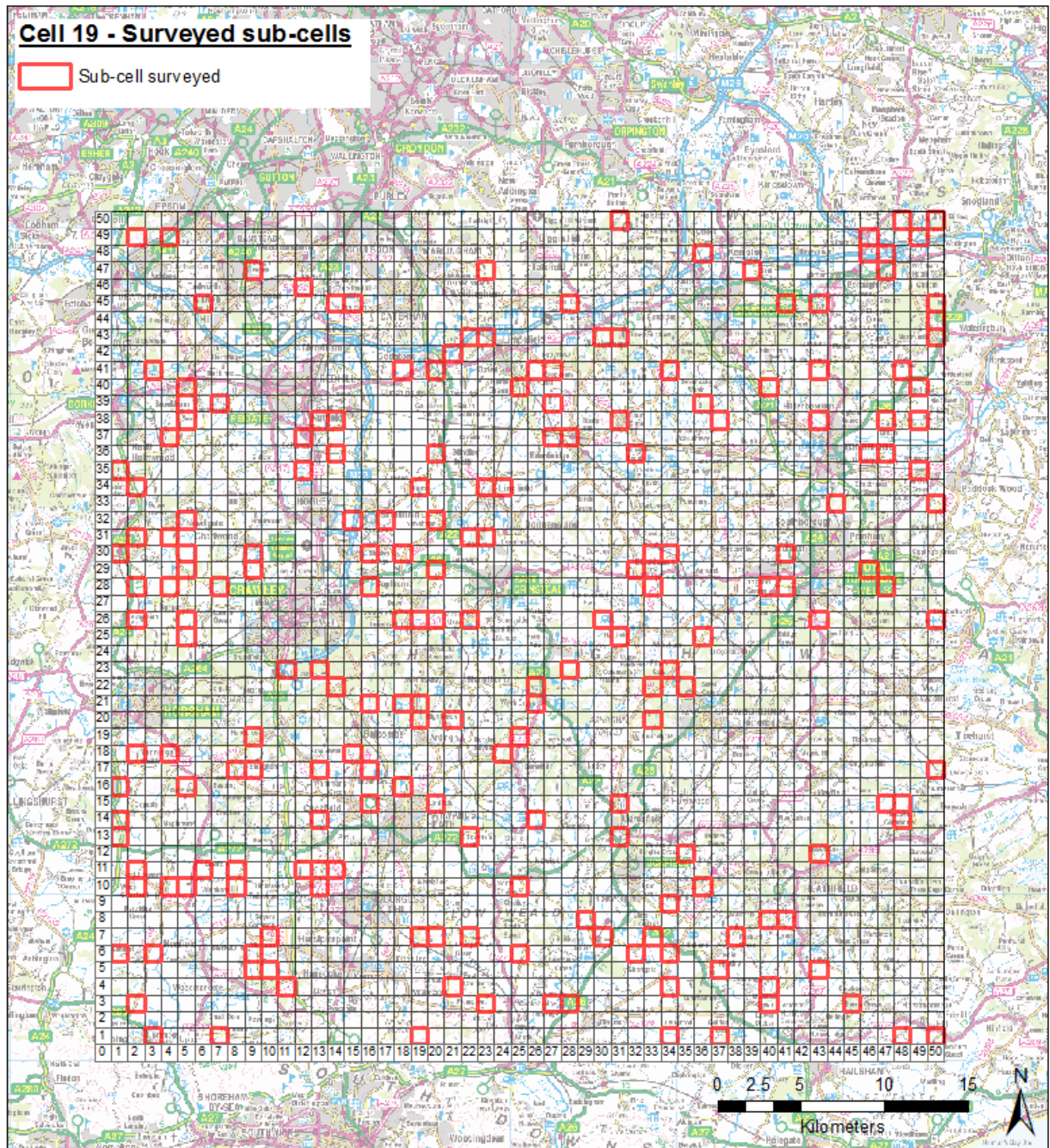


Figure 1 Cell 019 - South East– Location of sub-cells surveyed (outlined in red)

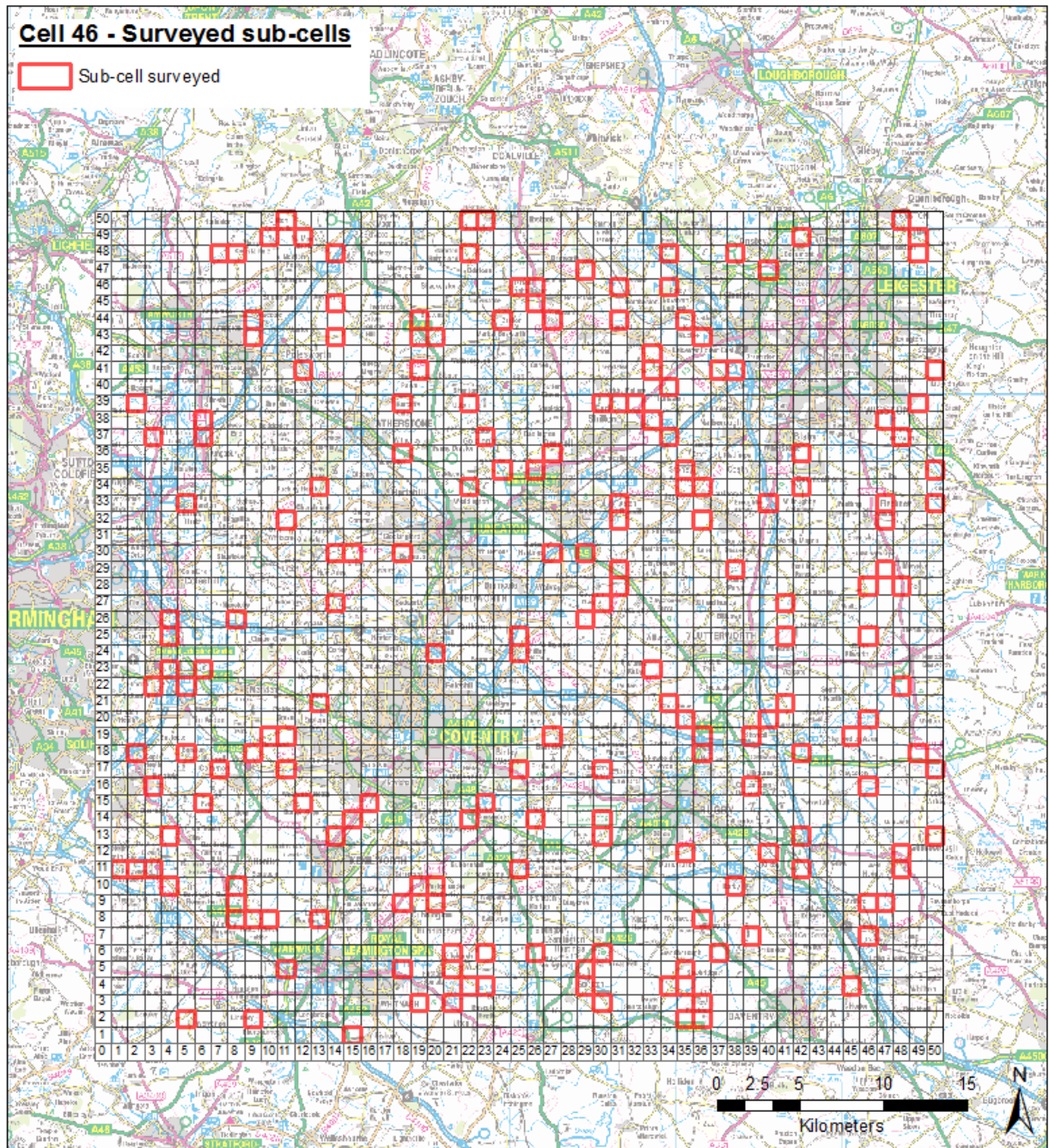


Figure 2 Cell 046- Midlands – Location of sub-cells surveyed (outlined in red)

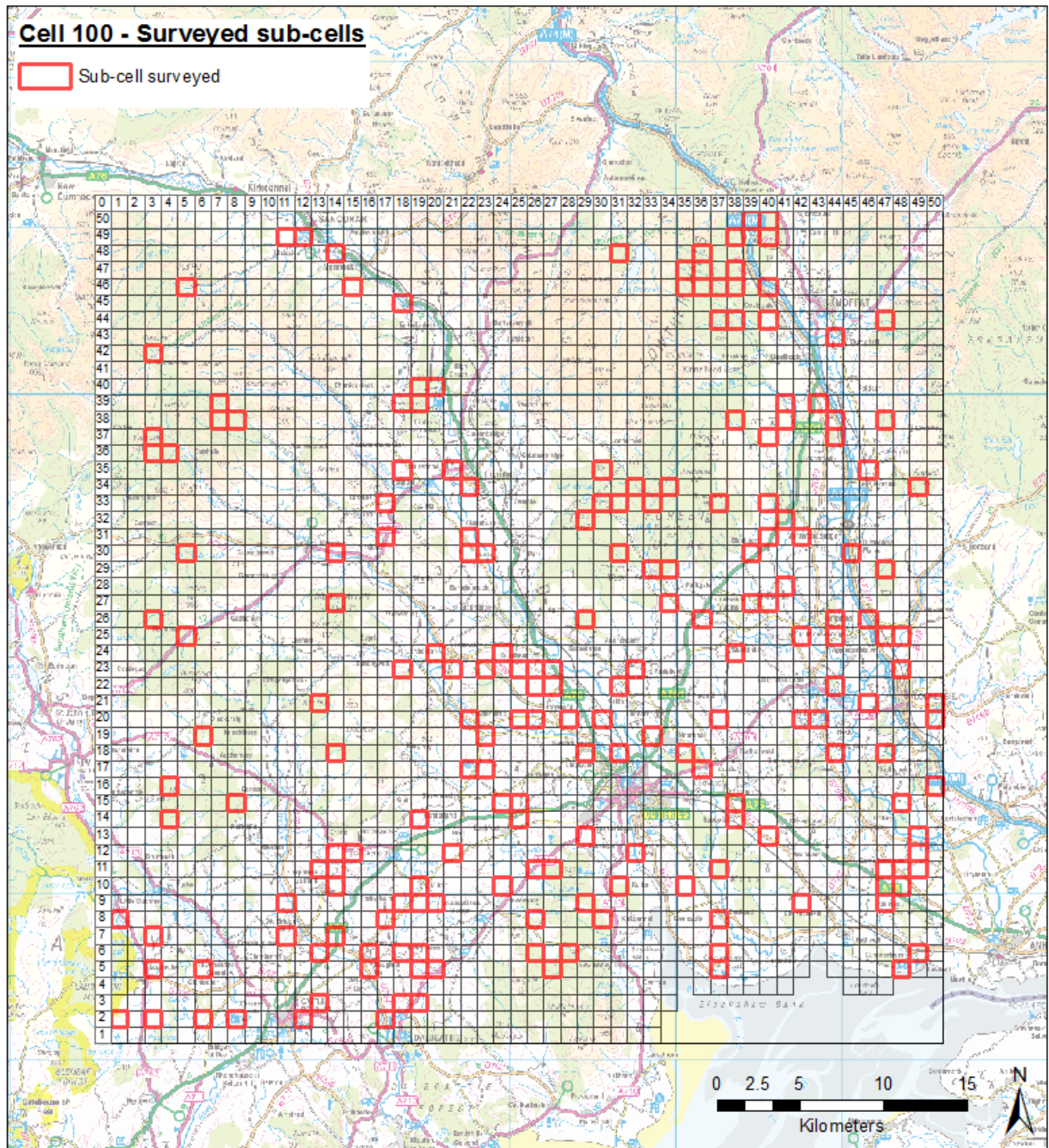



Figure 3 Cell 100- Dumfries and Galloway – Location of sub-cells surveyed (outlined in red)

Appendix 2 – Field survey questionnaire template

						KEY
 ETI RELB- WP3 FIELD SURVEY- TO BE COMPLETED FOR EACH 1KM X 1KM Sub-cell						Available land
						Unavailable land
SECTION 0- CELL SPECIFIC QUESTIONS		1	2	3	4	
SECTION 0	Surveyor					
	Date of Survey					
	Cell ID e.g. 019-25-10					
	Was the cell surveyed?	Select	Select	Select	Select	Select
	<i>If answered no the above question, please state why</i>	Select	Select	Select	Select	Select
	<i>If other please explain</i>					
GPS location of where cell was surveyed (lat, long). NB: If more than one point in each cell surveyed please record the GPS locations in chronological order- see below						
GPS Location 2						
GPS Location 3						
SECTION 1- % LAND USE		1	2	3	4	
How much of the cell is visible from your assessment point(s)?		0%	0%	0%	0%	
Proportion of the cell not assessed		100%	100%	100%	100%	
SECTION 1	Arable	0%	0%	0%	0%	
	Other cropping e.g horticulture	0%	0%	0%	0%	
	<i>Type of production</i>	Select	Select	Select	Select	Select
	Improved grassland (includes rough grazing areas)	0%	0%	0%	0%	
	Semi natural grassland	0%	0%	0%	0%	
	Scrub (unmanaged woody shrubs, tall ruderal vegetation, grasses, brambles)	0%	0%	0%	0%	
	Moorland (bracken, dwarf shrub heath, fen/marsh/swamp, bog and montane habitats)	0%	0%	0%	0%	
	Parkland	0%	0%	0%	0%	
	Semi-natural broadleaved woodland	0%	0%	0%	0%	
	Semi natural coniferous woodland	0%	0%	0%	0%	
	Semi natural mixed woodland	0%	0%	0%	0%	
	Plantation broadleaved	0%	0%	0%	0%	
	Plantation coniferous	0%	0%	0%	0%	
	Biomass crops/SRC/SRF	0%	0%	0%	0%	
	Golf course/Polo pitch/other amenity land	0%	0%	0%	0%	
	Development Residential/Industrial	0%	0%	0%	0%	
	Buildings present	0%	0%	0%	0%	
	<i>Building type (select dominant type if more than one)</i>	Select	Select	Select	Select	Select
	Water body	0%	0%	0%	0%	
	<i>Water body type (select dominant type if more than one)</i>	Select	Select	Select	Select	Select
	Boundary area	0%	0%	0%	0%	
	<i>Boundary type (select dominant type if more than one)</i>	Select	Select	Select	Select	Select
	Solar farm	0%	0%	0%	0%	
Highways and associated verges	0%	0%	0%	0%		
Wind farm	0%	0%	0%	0%		
Other land type - please comment						
Total land area	100%	100%	100%	100%	100%	
SECTION 2- CELL FEATURES		1	2	3	4	
SECTION 2	Topography	Select	Select	Select	Select	Select
	Dominant field size	Select	Select	Select	Select	Select
	Percentage gradient	Select	Select	Select	Select	Select
	Estimated number of fields per sub-cell					
	Are there any field margins?	Select	Select	Select	Select	Select
	Are there any scattered trees?	Select	Select	Select	Select	Select
	Is there a public right of way in the sub-cell?	Select	Select	Select	Select	Select
	Are utility poles / pylons present (including mobile phone masts) ie. anything that gets in the way of field operations?	Select	Select	Select	Select	Select
	Are livestock present?	Select	Select	Select	Select	Select
	If livestock are present, what type are present?	Select	Select	Select	Select	Select
	Does any of the available land appear to suffer waterlogging?	Select	Select	Select	Select	Select
	Will any of the above make more than 50% of this sub-cell unavailable?	Select	Select	Select	Select	Select
	SECTION 3- CELL ACCESSABILITY		1	2	3	4
SECTION 3	Roads or tracks within 1km of cell boundary	Select	Select	Select	Select	Select
	Motorway junction	Select	Select	Select	Select	Select
	Adjacent to A road	Select	Select	Select	Select	Select
	Adjacent B road	Select	Select	Select	Select	Select
	Bridges/weight limits	Select	Select	Select	Select	Select
	Other features of the cell- please comment					
SECTION 4- PREDICTED AVAILABLE AREA		1	2	3	4	
SECTION 4	Percentage area available - based on land area	0%	0%	0%	0%	
	Percentage unavailable	0%	0%	0%	0%	
	Unknown	100%	100%	100%	100%	
	TOTAL	100%	100%	100%	100%	
	In surveyors view is more than 50% of the land in this cell available (i.e. there are no other restrictions identified above that would make the land unavailable)	Select	Select	Select	Select	Select
	Justification of why cell deemed unavailable- please comment					
	Other comments					

Appendix 3

Contract No:	CSCP004	Contract Title:	ETI Refining estimates of land available for Biomass Production		
Site Location:	50x50km square survey cells	Date of Assessment Assessed By:	22/09/15 [REDACTED]	Date of Last Assessment:	24/09/2015 [REDACTED]

ADAS Form 1 Activity/Situation/Task Assessment

Field Surveys of 1km squares

No	Hazards Identified	Persons at Risk						Worst Case Outcome						Likelihood/Probability						Total	
		E	YP	CON	PUB	VIS	Other	No Lost Time	Minor <30mins	Minor >30mins	Major <3day	Major >3day	Fatal	HI	RP	OO	FF	FR	C		
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6		
1	Sun's rays	✓									✓					✓					8
2	Extreme cold	✓									✓					✓					8
3	Poor visibility	✓										✓					✓				15
4	Thunder and lightning	✓											✓	✓							6
5	Unpredictable weather	✓									✓						✓				12
6	Personal factors • Experience • Fitness etc.	✓												✓			✓				18
7	Rough or difficult terrain	✓										✓					✓				15
8	Falls – walking to sites	✓											✓				✓				18
9	Falls – working on sites	✓											✓				✓				18
10	Naturally-occurring diseases	✓									✓			✓							4
11	Crossing boundaries	✓									✓							✓			16
12	Steep Slopes	✓											✓		✓						12
13	Vehicle - loss of keys	✓									✓						✓				9
14	Theft of vehicles	✓									✓						✓				9

Hazards Identified		Persons at Risk						Worst Case Outcome						Likelihood/Probability						Total
		E	YP	CON	PUB	VIS	Other	No Lost Time	Minor <30mins	Minor >30mins	Major <3day	Major >3day	Fatal	HI	RP	OO	FF	FR	C	
		1	2	3	4	5	6	1	2	3	4	5	6							
15	Vehicle break-in	✓										✓		✓						12
16	Vehicle breakdown/bog down	✓									✓				✓					12
17	Medical condition	✓										✓		✓						12
18	Physical assault	✓										✓	✓							6
19	Shootings	✓										✓	✓							12
20	No communication	✓								✓						✓				12
21	Attack by animals	✓										✓	✓							6
22	Attack by insects	✓							✓							✓				8
23	Diseases transmitted by animals, insects	✓										✓		✓						12
24	Working in close proximity of roads and railways	✓			✓							✓			✓					18
25	Road accident	✓			✓							✓		✓						12

FORM1.DOC

E = Employees

YP = Young Persons

Con = Contractors

Pub = Members of
the Public

Vis = Visitors

Sheet

Number

2 of 2

HI = Highly Improbable

RP = Remotely Possible

OO = Occasional Occurrence

FF = Fairly Frequent

FR = Frequent and Regular

C = Certainty

Assessor:		Signed:		Next Assessment Before:	
<h1 style="margin: 0;">ADAS Activity/Situation/Task Assessment Form 2</h1> <p style="margin: 0;">Field Surveys of 1km squares</p>					

Hazard Number	Existing Controls (Can refer to documents)	Existing Information (Including Safety Signs)	Existing Training	Best Practice	Adequacy of Existing Controls? including Action Plan
1-4	Personal protective equipment in the form of outdoor clothing is provided. Refer to survey protocol for field equipment list	HSE information available via web site.	There is no training applicable.	Visit HSE web site @ www.hsehome.gov.uk	Adequate
5	Personal protective equipment in the form of wet weather gear is provided. . Refer to survey protocol for field equipment list	HSE information available via web site.	There is no training applicable.	Visit HSE web site @ www.hsehome.gov.uk	Adequate.
6	Experienced staff being used. See skills and competence audit sheet.	HSE information available via web site.	There is no training applicable.	An assessment of the experience and back-ground of individual members of staff that work remotely should be undertaken in order to establish any training and information needs.	Adequate.
7-9	Briefing – oral and written.	Visit HSE web site @ www.hsehome.gov.uk	There is some training given in respect of these hazards.	A training and information needs analysis should be carried out to establish the competence of individual members of staff.	Adequate.
10	Briefing	ADAS Health and Safety ADAS A -Z handbook available to all staff available to all staff. HSE web site.	There is no training provided at or necessary.	1. Information on Zoonoses should be provided for staff. 2. A medical information contact card should be provided.	Adequate after briefing
11	There are no reasonably practicable controls. Briefing	There is no existing information.	There is no training applicable.	Individuals to look after themselves.	Adequate.
12	Briefing, refer to survey protocol for further guidance on footwear.	There is no existing information.	There is no training applicable.	Individuals to look after themselves.	Adequate.

Hazard Number	Existing Controls (Can refer to documents)	Existing Information (Including Safety Signs)	Existing Training	Best Practice	Adequacy of Existing Controls? including Action Plan
13	Mobile phones available	There is no written information.	Not applicable.	An assessment of the feasibility of providing spare keys to be secluded somewhere on the vehicle.	Adequate
14	Mobile phones available	Written information provided by the Police.	Not applicable.	Reminders to staff to secure vehicles and place property out of sight.	Adequate
15	ADAS A -Z handbook available to all staff.	Written information provided by the Police.	Not applicable.	Advice could be sought from security specialists on dealing with such incidents.	Local action may be necessary.
16	ADAS A -Z handbook available to all staff.		Not applicable.	Information could be provided based on written advice available from motoring organisations.	Local action may be necessary.
17	Line managers/staff discuss any pre-existing conditions At risk individuals (e.g.diabetics or those that have severe allergies to stings (anaphylactic shock) are identified and extra controls are arranged see Best Practice	ADAS A -Z handbook available to all staff HSE web site.	Not applicable.	A medical contact card should be carried by all peripatetic workers. Occupational health assessments are undertaken. For those at risk Skyguard or Sentinel personal/GPS trackers to be issued – these provide a panic link to control centre who can raise G4S or Police to exact location.	National action and local action necessary.
18	Working alone, avoid confrontation and report to police if necessary. Surveyors will remain close to their vehicles in most situations, enabling them to avoid confrontation by driving off if an approaching member of the public appear threatening.	ADAS A -Z handbook available to all staff.	A training presentation has been sent out to all staff to raise awareness of risk of physical assault.	Experience from many years of having staff performing similar tasks in the rural environment indicates that the risk of physical assault in this situation is very small. For high risk areas that may be visited, Skyguard or Sentinel personal/GPS trackers to be issued – these provide a panic link to control centre who can raise G4S or Police to exact location.	Adequate
19	Working alone, avoid areas where shooting is in progress.	ADAS A -Z handbook available to all staff.	No applicable training provided.	Information and training could be provided for all peripatetic staff who run the risk of physical assault during course of their work. For high risk areas (remote) that may be visited, Skyguard or Sentinel personal/GPS trackers to be issued – these provide a panic link to control centre who can raise G4S or Police to exact location.	Adequate

Hazard Number	Existing Controls (Can refer to documents)	Existing Information (Including Safety Signs)	Existing Training	Best Practice	Adequacy of Existing Controls? including Action Plan
20	All staff carry mobile telephones, coverage good.	ADAS A -Z handbook available to all staff on Remote Working. SOP as well.	Not applicable	Information and training could be provided for all peripatetic staff who run the risk of physical assault during course of their work. For high risk areas that may be visited, Skyguard or Sentinel personal/GPS trackers to be issued – these provide a panic link to control centre who can raise G4S or Police to exact location.	Adequate
21-23	Briefing	There is information available to staff relating to these hazards. ADAS A -Z handbook available to all staff.	There is no applicable training provided, some staff have emergency first aid training.	Information and training could be provided for staff where contact is thought probable. For high risk areas that may be visited, Skyguard or Sentinel personal/GPS trackers to be issued – these provide a panic link to control centre who can raise G4S or Police to exact location.	Adequate
24	PPE provided.	ADAS A -Z handbook available to all staff.	Full training provided where applicable e.g.: Track Side off Railtrack.	Information and training to be provided if appropriate.	Adequate.
25	Briefing	In written briefing notes	Adequate		Adequate

Prepared by:		Date:	22/09/15	Next Assessment Before:	
<h1>ADAS</h1> <h2>GENERIC ACTION PLAN FORM 3</h2> <p>Field Surveys of 1km squares</p>					
Hazard No	Action Required	Target Date	Action By	Completed By (Name and Date)	
All Hazards	(1) These generic assessments are to be checked/added to/deleted for all outdoor and remote working tasks. THE ASSESSMENT SHOULD BE PRINTED.	Before Commencement of Contract Work	Contract Managers in consultation with staff involved as appropriate		
	(2) Best practice (see Form 2) to be followed so far as is reasonably practicable for all hazards identified. Additional site specific risks may require methods of working to be documented.	During work	Site leader and all staff involved as appropriate		