Cranfield UNIVERSITY

Report Prepared for the Department for Environment, Food and Rural Affairs

Report of Activity for LandIS Support



Quarterly Progress Report
1st April – 30th June 2010

Report of Activity for LandIS Support
For the Department for Environment, Food and Rural Affairs

by
Caroline Keay, Timothy Farewell, Andrew Rayner and Stephen Hallett

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DEFRA Contract No. SP0901
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RESPONSIBILITY FOR THIS DOCUMENT
Please contact:
Caroline Keay
National Soil Resource Institute, Cranfield University
Email: c.keay@cranfield.ac.uk
Tel: 01234 750111 ext 2771

CHANGE HISTORY

Version	*Date*	*Summary of change*
1.0	04/08/2010	First Issue

Reference to this report should be made as follows:

KEAY, C.A.; FAREWELL, T.S.; RAYNER, A.P., HALLETT, S.H ; (2010). Report of Activity for LandIS Support for the Department for Environment, Food and Rural Affairs. Quarterly Progress Report Apr – Jun, 2010, NSRI research report number WN32150N for DEFRA, 10pp.

National Soil Resource Institute
Bullock Building, Cranfield University, Bedford, MK43 0AL, UK
Tel: 01234 750111 ext 2771
E-mail: nsri@cranfield.ac.uk Webs: www.cranfield.ac.uk/sas/nsri/ www.landis.org.uk

Progress with the LandIS Support Contract

Reporting Period: 1 April, 2010 – 30 June, 2010

Database Maintenance

No specific maintenance issues are reported in this period. The LandIS 'Virtual Server' continues to provide good service to the project. The service team in the Cranfield University IT computing group provides a high standard of maintenance care and support.

Usage

The Soil Site Reporter (http://www.landis.org.uk/reports/) continues to be used extensively with numbers steadily increasing. In the current period there have been 19 new companies and 100 new users registered. Of these, this includes 7 new Universities and 50 new student registrations. The Soilscapes viewer tool has received around 3,000 map requests per week over the last 3 months with a peak weekly request figure of 5,000.

The following figures illustrate the level of response and use of the reporter to-date (figure 1):

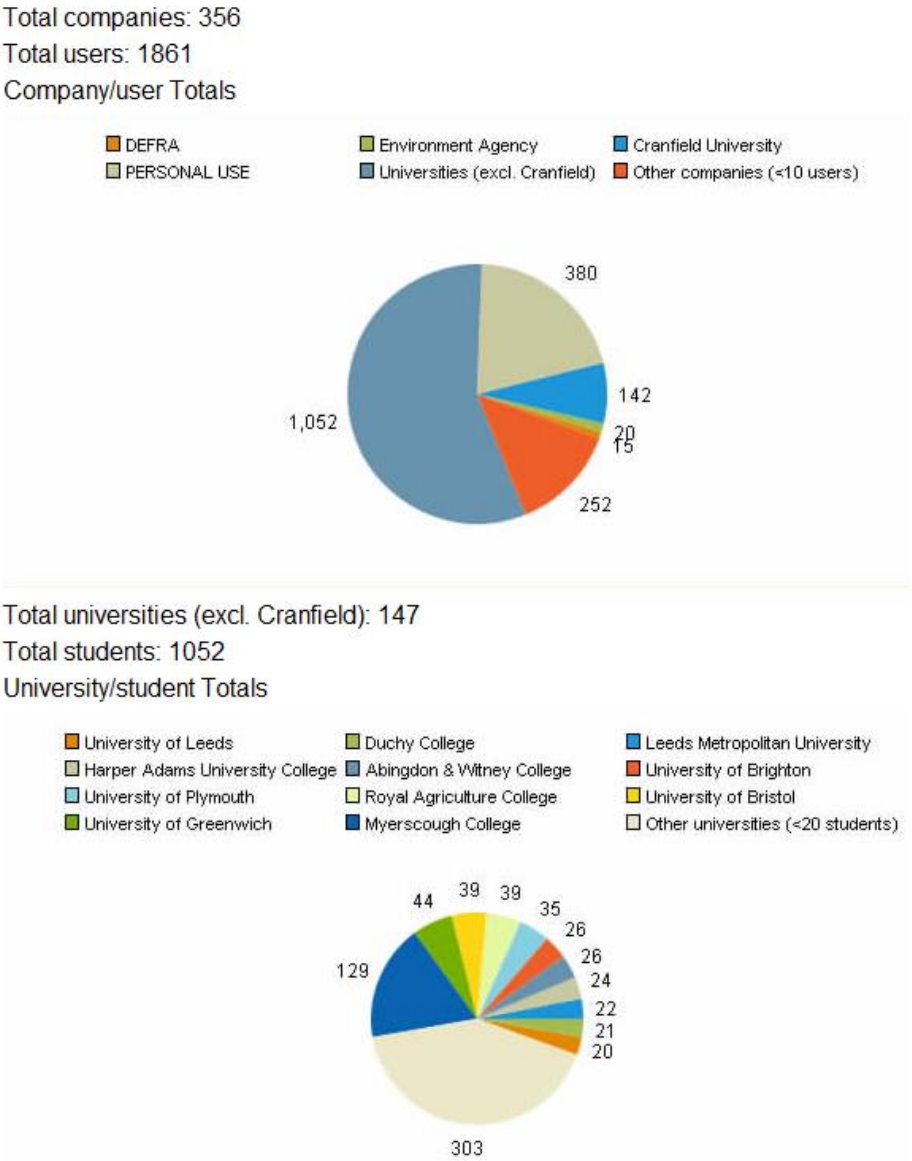


Figure 1 Summary of Soil Site Reporter uptake by user group

Soils Site Reporter (v2)

Because the planned second version of the site reporter, currently being developed, uses a number of different software technologies to produce the reports, certain technical issues, including certain software updates, have been found to slow the final stages of development. We are seeking to find a workaround solution to these issues, and anticipate this being achieved in the the coming months. Due to the geometrical complexity of the GIS Shapefiles as well as the range of potential projections and coordinate systems in use, it is likely that the deliverable system will always retain a manual checking component. Thus it is anticipated that users would submit their shapefiles for processing by a member of Cranfield staff.

Work In Progress

There is one more quarter to go before the end of the current LandIS Reference Site support contract. Over this period the LandIS team will be focusing on three key areas:

Full metadata for LandIS products made available to the general public via the GeoNetwork software tool

Work will continue to complete the new metadata entries for the LandIS soils datasets using the GeoNetwork server. GeoNetwork is an Open Source software tool in wide use by environmental public bodies across the EU. It is anticipated that this system will ultimately be placed on a public-facing computer server allowing LandIS data to be included in distributed metadata searches.

Soil Site Reporter (v2) tool to be launched

Despite the ongoing technical difficulties noted, we hope to launch the second version of site reporter later in 2010. As noted, this system that is anticiptated is likely to involve some manual interventions to ensure acceptance of the user shapefiles, and associated quality assurance procedures prior to the report generation.

Data Product Documentation

Work will continue on the documentation of the interpreted soil datasets, focussing initially on the Soilscapes datasets. Work will also extend to include also National Map interpretations such as soil structure, topsoil texture, HOST, ground movement and flood vulnerability. The LandIS website will be used as a means to disseminate these data summaries.

LandIS PERSONNEL/TIME

Time put down to the LandIS project for the period Apr 10 to Jun 10 with budgeted days for Year 4 (Apr 10 to Sep 10) in brackets:

Caroline Keay	28	(29) days
Stephen Hallett	6	(14) days
Timothy Farewell	37	(25) days
Andrew Rayner	0	(25) days
Mark Kibblewhite [1]	0	(1) days

Time put down to the LandIS project for the period Oct 2008 to Jun 2010 with budgeted days over the duration of the complete LandIS contract in brackets:

Caroline Keay	151	(174) days
Stephen Hallett	43	(84) days
Timothy Farewell [2]	173	(150) days
Andrew Rayner	134	(150) days
Mark Kibblewhite [1]	8	(6) days
Ian Truckell [2]	5	(0) days
Michelle Clarke [2]	6	(0) days

[1] Mark Kibblewhite is standing in for Dick Thompson's original role in the project and prior to recruitment of a succeeding NSRI Director.
[2] Some of the provision originally assigned to Stephen Hallett has been diverted to Timothy Farewell and other NSRI staff to help with the creation of the improved LandIS documentation.

Defra Data Lease budget used between 1st October 2008 and 30th June 2010

£12,300 has been spent from the total project budget of £18,000 allocated for Defra projects. New data leases this quarter have been highlighted in the tables below as "***NEW***".
An additional £1,700 is known to be forthcoming and secured for the last quarter of the project from 1st July 2010. This leaves £3,800 remaining to be spent as required before the End of September.)

COMPLETE LIST OF DATA LEASES FUNDED BY DEFRA VIA THE LANDIS FUND (OCT 2008 – JUN 2010)

Organisation	Abstract	Purpose of Use	Start Date	End Date	P&A	Uncharged Royalty
Data Lease funded by DEFRA via the LandIS fund						
ADAS	The project will use NSRI soils data (top soil texture and water content, and associated HOST class) for the dominant soil series within each 1km cell as input to the national PSYCHIC model of diffuse phosphorus losses from agricultural land.	To evaluate present day (2004) and future (2015) total phosphorus loadings on all lakes in England and Wales, from all point and diffuse sources. Project officer: Russell Todd (Defra CSF). DEFRA PROJECT CODE:	01/12/2007	31/03/2008	£375.00	£ 28,000.00
Forestry Commission	NSI data points - DEFRA contract SP0521.	Forestry Commission research project EH66600E ' Carbon dynamics in forests'.	11/10/2007	10/10/2008	£200.00	£ 24,000.00
BBSRC	County-level soil property data defining, for the 3 most common soil types present: maximum organic carbon content(%); minimum soil organic carbon content (%); clay content (%); pH; bulk density (g/cm3); total soil porosity (% volume); water content at field capacity (1/3 bar tension) as a % of total water content at wilting point (15 bar tension) as a % of total porosity, of the topsoil layer; together with soil texture class and Hydrology Of Soil Types (HOST) grouping.	For use solely as input data to any version of the UK-DNDC model for the purpose of deriving emission factors for the UK N20 inventory as required by the Department of the Environment, Food and Rural Affairs (Defra). Ref: DEFRA project code: CC0266. 2008 - same project but code changed to AC0101.	01/12/2007	31/03/2009	£200.00	£24,000.00
Forestry Commission	NATMAP vector and SOILSCAPES for England and Wales	To map those areas where soil associations vulnerable to erosion can be found.	14/04/2008	13/04/2013	£375.00	£95,350.00
Ministry of Defence	NATMAP 250k data for England and Wales with legend. association and pH data.	Within the MOD HQ Land Forces.	02/06/2008	01/06/2009	£375.00	£130,190.00
Rothamsted Research	NATMAP vector, SOILSERIES hydrology, HORIZON hydraulics, HORIZON fundamentals.	DEFRA project: LK0986. Improving water use efficiently and drought tolerance in UK winter wheats.	25/06/2008	24/06/2008	£375.00	£18,4190.00
Royal Veterinary College	Soilscapes- Wales Yr 2 & Yr 3 - Soilscapes England	To be used in a study of risk factors of disease introduction in a population of cattle herds and sheep flocks in Wales.DEFRA code:SE4002/CTA0301. (Single User licence)	01/05/2008	30/04/2009	£375.00	£2,4000.00
University of Nottingham	NATMAPvector and HORIZONhydraulics. 6/6/07 - additional data supplied - NATMAP vector + topsoil texture data - River Kent - Kendal, Cumbria - 528km2.	DEFRA project code: FD2016/CSA6616 - partnered with EA - Flood Risk Management Research Consortium - Hawkcombe Stream Somerset.	01/06/2008	31/05/2009	£200.00	£2,700.00

Organisation	Abstract	Purpose of Use	Start Date	End Date	P&A	Uncharged Royalty
Data Lease funded by DEFRA via the LandIS fund						
University of Durham	1) NATMAP vector, SOILSERIES hydrology, HORIZON fundamentals. 3/12/08 - amended to include: NATMAP legend, associations,SOILSERIES info, NSIsite and topsoil 1&2 (10 catchments in England and Wales). 2) NATMAP vector, legend, associations, SOILSERIES info, hydrology, HORIZON fundamentals, NSI site, topsoil 1 &2, profile, texture (Entire UK).	1) Within DEFRA project WQ0105CSA7393 as previously. 2) Within DEFRA project WQ0105CSA7393.	04/06/2008	01/01/2010	£200.00	£123,700.00
University of Nottingham	NATMAP vector & HORIZON hydraulics + topsoil data for OS area 300300SW by 310310 NW	DEFRA project: Flood Risk Management Research Consortium - code FD2016/CSA6616	28/08/2008	30/11/2009	£375.00	£400.00
DEFRA	All NSI data. All SOILSERIES and HORIZON data. 8/2/08 - Incorporating data licenced under ref:LC0013/007 NATMAP vector, NATMAP soilscapes, NATMAP legend, NATMAP associations	Within DEFRA.	01/12/2008	30/11/2008	£200.00	£130,190.00
Welsh Assembly Government	1. Wetness class: map showing soil associations in which more than 65% of the association area comprises soils having wetness class IV, V or VI. 2. Maps (with associated shape files) of shallow, stony, coarse, fine textured and peat soils. We would supply hard copy maps (A4 or A3 as agreed) and shape files that NE and WAG GI units could map and model in relation to climate and slope criteria (as requested). 3. Map showing complete extent of Less Favoured Areas defined using new criterion compared with current extent.	Determining Less Favoured Areas in England and Wales. Consortium licence in conjunction with Natural England ref: LC0013/008	01/12/2008	30/11/2010	£3,000.00	£123,700.00
Natural England	as above	determining Less Favoured Areas in England and Wales. Consortium licence in conjunction with The Welsh Assembly Government ref: LC0200/001	01/12/2008	30/11/2010	£0.00	£0.00
University of Lancaster	NATMAP vector, legend, associations, SOILSERIES info, hydrology, HORIZON fundamentals, NSI site, topsoil 1 & 2, profile, texture (Entire UK).	Within DEFRA project WQ0129: Delivery of Phosphorus and Faecal Indicator Organisms from Agricultural Sources to Watercourses.	15/12/2008	31/07/2013	£375.00	£123,700.00
NERC / CEH	1km resolution soil carbon database for England and Wales, giving the soil series in each 1km square together with particle size, bulk density and carbon content for layers 0-30cm and 30-100cm	To be used by CEH (Edinburgh) for DEFRA Project on Preparation of Annual Greenhouse Gas Inventory for LUCF in the UK	01/06/2008	31/05/2010	£200	£50,000

Organisation	Abstract	Purpose of Use	Start Date	End Date	P&A	Uncharged Royalty
Data Lease funded by DEFRA via the LandIS fund						
Forestry Commission	NSI data points - DEFRA contract SP0521.	Forestry Commission research project EH66600E ' Carbon dynamics in forests'.	11/10/2008	10/10/2009	£200	£97,000
University of Stirling	NATMAP vector, NSI topsoil, SOILSERIES hydrology, SOILSERIES pesticides.	Defra project: FC1177 "Development of a risk evaluation system for the establishment of Gyrodactylus salaris in English and Welsh river systems." Data to be used by David Morris.	23/02/2009	22/02/2010	£375	£112,000
Forestry Commission	NATMAP vector - Breckland Forest area	Data to identify heathland areas and for use in forestry planning	25/02/2009	21/02/2014	£375	£3,000
NERC / CEH	NATMAP1000 1 km digital raster version of the National Soil Map for England and Wales, (Ref: DD7017V/033, ID210)	to update critical loads maps for DEFRA/NERC contract EPG1/3/185: National Critical Loads Mapping Programme - Phase IV (CEH project - CPEA 19	17/09/2007	16/09/2010	£200	£14,128
Peak Districk National Park Authority	NATMAP, SOILSERIES hydrology, agronomy, pesticides, info, HORIZON fundamentals, hydraulics.	DEFRA research project SP0572 - Ecosystem Services of Peat. 2-5 users.	23/03/2009	22/03/2010	£375	£5,801
BBSRC	County-level soil property data defining, for the 3 most common soil types present:maximum organic carbon content(%); minimum soil organic carbon content (%); clay content (%); pH; bulk density (g/cm3); total soil porosity (% volume); water content at field capacity (1/3 bar tension) as a % of total water content at wilting point (15 bar tension) as a % of total porosity, of the topsoil layer; together with soil texture class and Hydrology Of Soil Types (HOST) grouping.	For use solely as input data to any version of the UK-DNDC model for the purpose of deriving emission factors for the UK N20 inventory as required by the Department of the Environment, Food and Rural Affairs (Defra). Ref: DEFRA project code: CC0266. 2008 - same project but code changed to AC0101. 2009 - DEFRA AC0112: Inventories of ammonia and greenhouse gases from UK agriculture	01/04/2009	31/03/2010	£200	£66,029
DEFRA	Soilscapes data.	DEFRA project ref: IF0128. The potential impact of Climate change on diseases influencing the UK strawberry industry.	19/05/2009	30/04/2011	£375	£24,078
DEFRA	NATMAP 1km, with Attributes and HOST.	Extending the evidence base on the ecological impact of fine sediment and developing a framework for targeting mitigation of agricultural sediment loss.	01/07/2009	31/03/2012	£375	£28,000

Organisation	Abstract	Purpose of Use	Start Date	End Date	P&A	Uncharged Royalty
Data Lease funded by DEFRA via the LandIS fund						
		DEFRA project code: WQ0128				
DEFRA	1km NATMAP with Attributes.	Characterisation of soil structural degradation under grassland and development of measures to ameliorate its impact on biodiversity and other soil functions.DEFRA project code: BD5001.	01/07/2009	31/12/2013	£375	£23,000
Royal Veterinary College	Soilscapes- Wales Yr 2 & Yr 3 - Soilscapes England	To be used in a study of risk factors of disease introduction in a population of cattle herds and sheep flocks in Wales.DEFRA code:SE4002/CTA0301. (Single User licence)	01/05/2009	30/04/2010	£375	£19,263
BGS	NATMAP vector, HORIZON fundamentals - texture & carbon for topsoils for England and Wales.	DEFRA project SP0571 'UKCIP08 Scenarios & climate change pressures/threats to soils in England and Wales.	13/07/2009	12/07/2010	£375	£52835
DEFRA	NATMAP vector, soilscapes, legend, associations. SOILSERIES info, hydrology, pesticides, agronomy.	DEFRA project: IF0143 Modelling the spatial and temporal management of land-use to optimise biodiversity.	01/12/2008	30/11/2011	£375	£81,278
DEFRA	NATMAP vector and Soilscapes data	Defra and the Environment Agency - National ecosystem assessment project.	09/03/2009	28/02/2011	£375	£56938
ADAS ***NEW***	Natmap vector, Natmap 1000, Soilseries hydrology, HORIZON fundamentals, HORIZON hydraulics tables.	Establishing the Hampshire Avon Demonstration Test Catchment (DTC) platform.Defra project code:	01/12/2009	31/03/2014	£375	£33,191
ADAS ***NEW***	NSI Site & Topsoil	Restoration of herbaceous hedgerow flora Defra project code: BD5301	01/12/2009	30/06/2010	£375	£31,930
ADAS ***NEW***	NATMAP vector	DEFRA project code: PS2239 - Arable pesticide exposure pathways	01/01/2010	31/03/2010	£375	£75,350
				TOTAL (Defra)	£12,300	£1,736,941

NEW DATA LEASES FROM APRIL 2010 – JUNE 2010

Organisation	Abstract	Purpose of Use	Start Date	End Date	P&A	Uncharged Royalty
Crown						
Environment Agency	NSI Carbon/texture data Soil C (%)	DEFRA project SP0562 - 'Co-ordinate an expert group to assemble UK-wide data on soil carbon (and greenhouse gas fluxes) in the context of land management).	19/01/2010	18/01/2011	200	£24,000
Environment Agency	NATMAP vector - East Midlands Region. Large multi-user licence.	The East Midlands Environmental Evidence Base. Defra project code: NES 2	01/04/2010	31/03/2011	375	£14,800
Bona Fide Research						
Wildlife Trust (BCNP)	Soilscapes	Green infrastructure planning. To analyse current habitats and assess opportunities for habitat creation and restoration.	20/12/2009	19/12/2010	200	£500
University of Sheffield	FOR ACADEMIC USE ONLY Three 1:25,000 scale detailed sheets: SE63/73 (Selby) SE39 (Northallerton) SE59 (Maltby) Interpreted with fracture potential and corrosivity (Invoice to Yorkshire water)	FOR ACADEMIC USE ONLY BY PATRICK COONEY. Climate change impacts on buried assets.	26/04/2010	31/10/2013	375	£3,500
				TOTAL (Crown and Bona fide Research)	**£1,350**	**£42,800**



https://dspace.org/

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