

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

## Report of Activity for LandIS Support



# **Report of Activity for LandIS Support**

## **For the Department for Environment, Food and Rural Affairs**

by  
**Caroline Keay, Timothy Farewell, Andrew Rayner**

Quarterly Progress Report  
1<sup>st</sup> Jul – 30<sup>th</sup> Sep 2009  
DEFRA Contract No. SP0901  
NSRI Contract No. WN32150N

### RESPONSIBILITY FOR THIS DOCUMENT

*Please contact:*

**Caroline Keay**

National Soil Resource Institute, Cranfield University

Email: [c.keay@cranfield.ac.uk](mailto:c.keay@cranfield.ac.uk)

Tel: 01234 750111 ext 2771

### CHANGE HISTORY

| <i>Version</i> | <i>Date</i> | <i>Summary of change</i> |
|----------------|-------------|--------------------------|
| 1.0            | 12/10/2009  | First Issue              |

Reviewer: Dr Stephen Hallett

*Reference to this report should be made as follows:*

KEAY, C.A.; FAREWELL, T.S.; RAYNER, A.P.; (2009). Report of Activity for LandIS Support for the Department for Environment, Food and Rural Affairs. Quarterly Progress Report Jul – Sep, 2009, NSRI research report number WN32150N for DEFRA, 11pp.

### **National Soil Resource Institute**

Cranfield University, Bedford, MK43 0AL, UK

Tel: 01234 750111 ext 2771

E-mail: [nsri@cranfield.ac.uk](mailto:nsri@cranfield.ac.uk) Web: <http://www.cranfield.ac.uk/sas/nsri/>

## **Progress with the LandIS Support Contract**

**Reporting Period:** 1 July, 2009 – 30 Sep, 2009

### ***Database Maintenance***

No specific maintenance issues have been experienced this period. The new virtual server is continuing to provide good service. The service team in the Cranfield University IT computing group provides a high standard of maintenance care and support.

### ***Soil Site Reports***

The Soil Site Reporter (<http://www.landis.org.uk/reports/>) continues to be used extensively. In the current period there have been 23 new companies and 98 new users registered. Importantly, and following our recent promotional campaign, this now includes 7 new Universities who have registered to take advantage of our initiative to provide free soil site reports made available as a general educational resource to all UK University Undergraduate students.

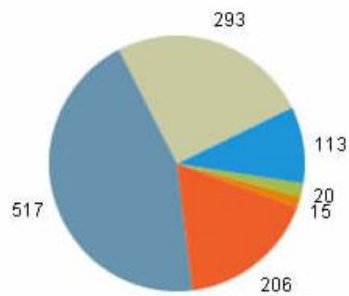
The following figures illustrate the level of response and use of the reporter to-date (figures 1-2):

Total companies: 280

Total users: 1164

Company/user Totals

DEFRA  
 Environment Agency  
 Cranfield University  
 PERSONAL USE  
 Universities (excl. Cranfield)  
 Other companies (<10 users)



Total universities (excl. Cranfield): 108

Total students: 517

University/student Totals

University of Reading  
 University of Gloucestershire  
 University of Brighton  
 University of Plymouth  
 Myerscough College  
 University of Bristol  
 University of Bradford  
 University of Leeds  
 Royal Agriculture College  
 Other universities (<10 students)  
 Hadlow College  
 University of Sussex  
 Harper Adams University College  
 University of Greenwich

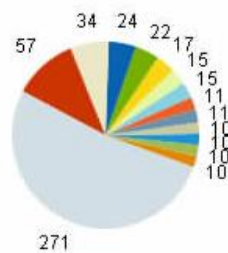


**Figure 1. Summary of Soil Site Reporter uptake by user group**

## Report purchases by purchase type

■ Free (£52,188.00)      ■ Full payment (£29,817.69)  
■ Free voucher (£8,514.00)      ■ Discounted voucher (£15.28)

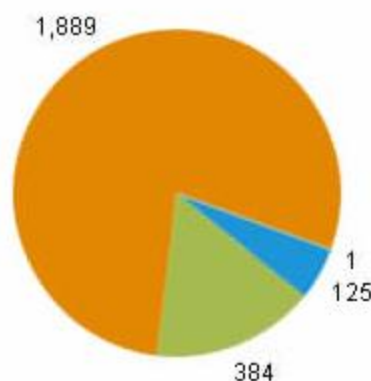


Figure 2. Summary of report types served by Soil Site Reporter

## Soils Site Reporter Upgrade

Work is now underway for the second version of the popular soils site reporter. Key additions will include clearer mapping as well as user-specified mapping extents. This will be achieved by allowing users to upload custom GIS shapefiles, or to draw 'areas of interest' directly on-screen onto a map backdrop (see figure 3). Both these additions are in response to consistent user requests. The system has now entered alpha testing and it is hoped Soil Site Reporter version 2.0 will be ready for its release in Spring 2010.

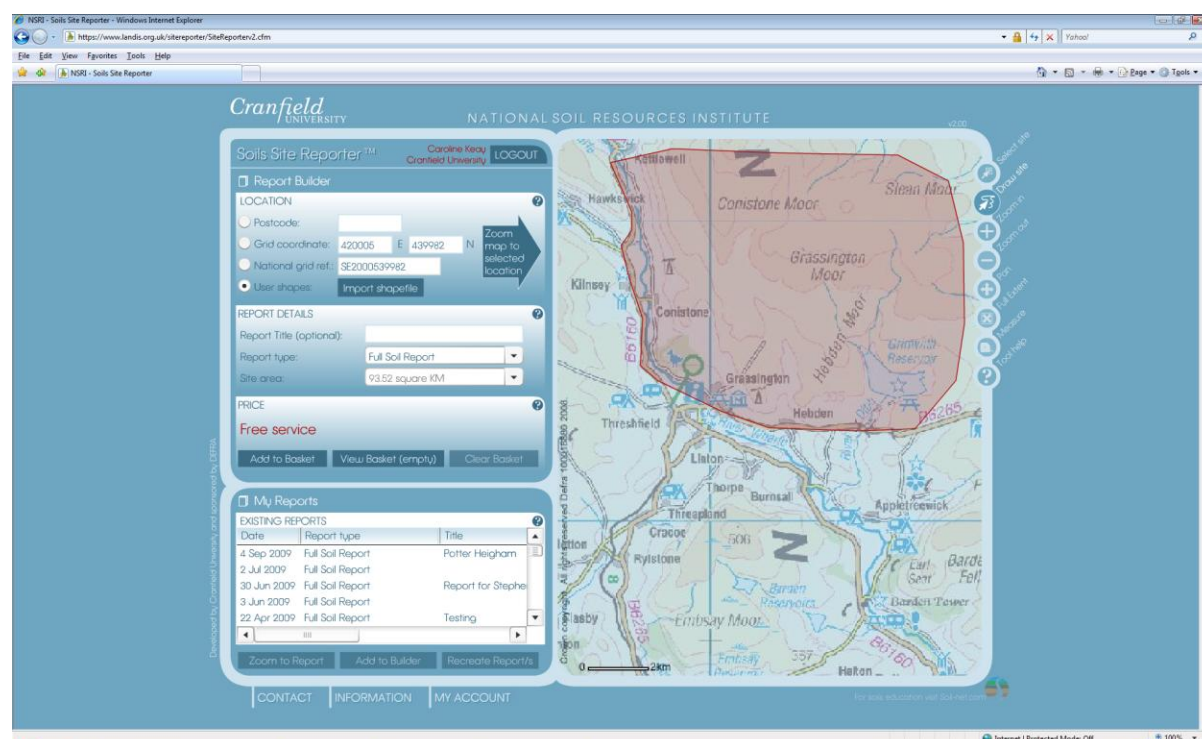


Figure 3. Sample of user-specified mapping extents in the new prototype Soil Site Reporter

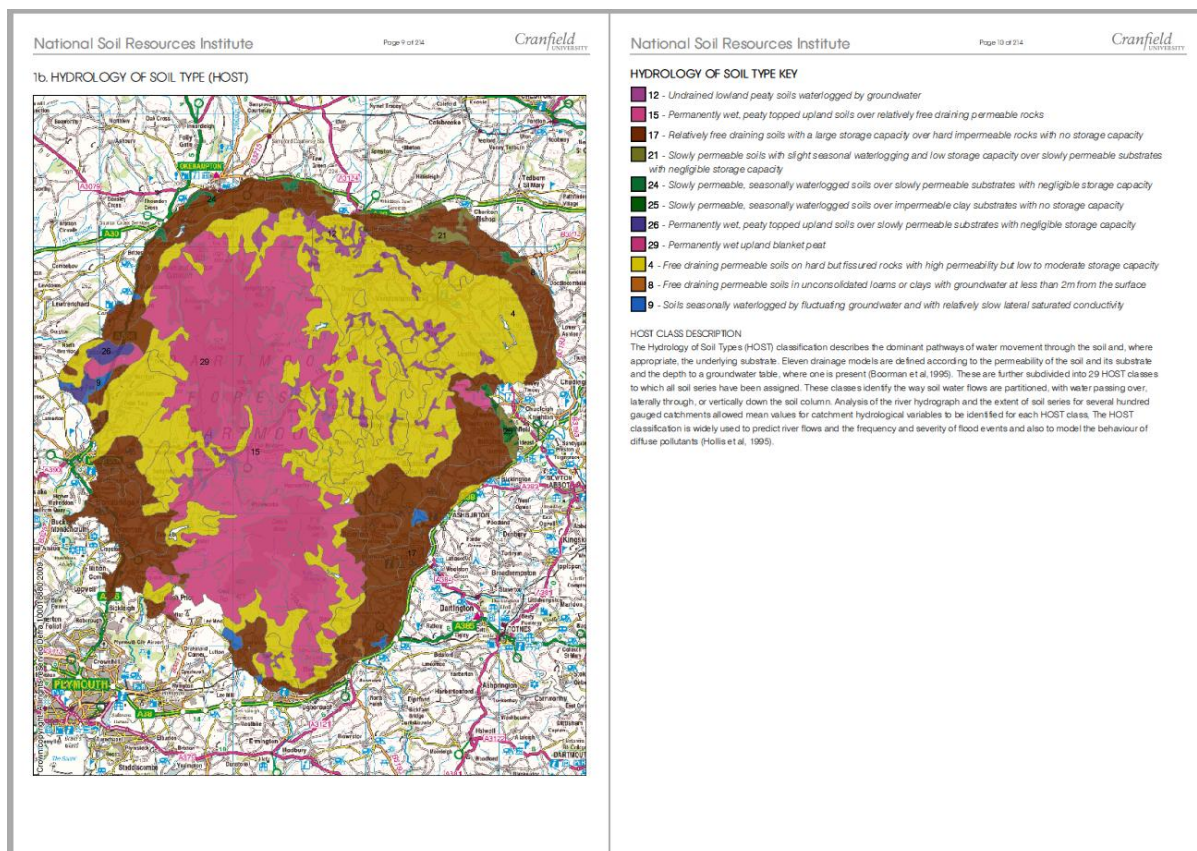


**Figure 4. Sample of a New look Soil Site Report page from the prototype reporter**

## Improved Data Descriptions

Work has continued on the creation of a suite of new data descriptions to enable better understanding of the datasets on offer. These will include descriptive text, maps and illustrative photographs. Together these new documents, which will be both downloadable and viewable on the web, will help users more successfully identify the most appropriate datasets for their needs, and to recognise the great deal of influence that soil has on the broad variety of environmental factors.

As a proof of concept we will be generating a small subset of these new descriptions for our Soilscares product (including habitats, fertility, simple texture, drainage and landcover). These have been presented to the Defra Soils Policy team to their satisfaction.

## LandIS PERSONNEL/TIME

Time put down to the LandIS project for the period Apr 09 to Jun 09 with budgeted days for Year 3 (Apr 09 to Mar 10) in brackets:

|                   |    |           |
|-------------------|----|-----------|
| Caroline Keay     | 37 | (58) days |
| Timothy Farewell  | 29 | (50) days |
| Stephen Hallett   | 16 | (28) days |
| Andrew Rayner     | 48 | (50) days |
| Michelle Clarke * | 6  | (0) days  |

Mark Kibblewhite \*\* 0 (2) days

\* Michelle's help was recruited to develop the new text descriptions her time will be taken from Stephen Halletts allocation.

\*\* Mark Kibblewhite is standing in for Dick Thompson's original role in the project and prior to recruitment of a new succeeding NSRI Director.

### **Defra budget used between 1<sup>st</sup> April 2009 and 30<sup>th</sup> September 2009**

£3,800 was spent from a budget of £5,800 for 12 Defra projects. New data leases this quarter have been highlighted **\*NEW\***.

The 6 data leases marked with a \* were deferred from last years budget until the beginning of April 2009.

# NEW DATA LEASES FOR THE YEAR TO DATE

| Organisation                                          | Abstract                                                                                                                                                                                         | Purpose of Use                                                                                                                                                                                                                                  | Start Date | End Date  | P&A  | Uncharged Royalty |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------|-------------------|
| <b>Data Lease funded by DEFRA via the LandIS fund</b> |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                 |            |           |      |                   |
| 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-JUN-08  | 31-MAY-10 | £200 | £50,000           |
| Forestry Commission*                                  | NSI data points - DEFRA contract SP0521.                                                                                                                                                         | Forestry Commission research project EH66600E 'Carbon dynamics in forests'.                                                                                                                                                                     | 11-OCT-08  | 10-OCT-09 | £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."<br><br>Data to be used by David Morris.                                                       | 23-FEB-09  | 22-FEB-10 | £375 | £112,000          |
| Forestry Commission*                                  | NATMAP vector - Breckland Forest area                                                                                                                                                            | Data to identify heathland areas and for use in forestry planning                                                                                                                                                                               | 25-FEB-09  | 21-FEB-14 | £375 | £3,000            |
| Maslen Environmental*                                 | Soilscapes for England and Wales.                                                                                                                                                                | Defra R&D project SP0573: Basis of the UK BAP target for the reduction in use of peat in horticulture<br><br>Development of a map showing low land raised peat bogs where the peat deposits have historically or are currently being extracted. | 02-FEB-09  | 01-FEB-10 | £375 | £38,525           |
| 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-JAN-09  | 18-JAN-10 | £375 | £2,400            |
| 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-SEP-07  | 16-SEP-10 | £200 | £14,128           |



| Organisation                          | Abstract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Purpose of Use                                                                                                                                                                                                                                                                                                                                                                                       | Start Date | End Date              | P&A    | Uncharged Royalty |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|--------|-------------------|
| Peak Districk National Park Authority | NATMAP, SOILSERIES hydrology, agronomy, pesticides, info, HORIZON fundamentals, hydraulics.                                                                                                                                                                                                                                                                                                                                                                                                 | DEFRA research project SP0572 - Ecosystem Services of Peat.<br>2-5 users.                                                                                                                                                                                                                                                                                                                            | 23-MAR-09  | 22-MAR-10             | £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.<br>2008 - same project but code changed to AC0101.<br>2009 - DEFRA AC0112: Inventories of ammonia and greenhouse gases from UK agriculture | 01-APR-09  | 31-MAR-10             | £200   | £66,029           |
| DEFRA                                 | Soilscapes data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DEFRA project ref: IF0128.<br>The potential impact of Climate change on diseases influencing the UK strawberry industry.                                                                                                                                                                                                                                                                             | 19-MAY-09  | 30-APR-11             | £375   | £24,078           |
| <b>*NEW*</b> 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. DEFRA project code: WQ0128                                                                                                                                                                                                                  | 01-JUL-09  | 31-MAR-12             | £375   | £28,000           |
| <b>*NEW*</b> 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-JUL-09  | 31-DEC-13             | £375   | £23,000           |
|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                      |            | TOTAL (Defra Charges) | £3,800 | £463,961          |

| Organisation              | Abstract                                                                                                                                                                                | Purpose of Use                                                                                                                                                                                         | Start Date | End Date  | P&A                           | Uncharged Royalty |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|-------------------------------|-------------------|
| <b>Bona Fide Research</b> |                                                                                                                                                                                         |                                                                                                                                                                                                        |            |           |                               |                   |
| University of Brighton    | National Soil Map soil associations for the South East of England with text legend file<br><br>2/4/09 - Additional data supplied.<br>MUSID - horizon and agronomy properties summarised | For a research and development project on Habitat Suitability Modelling on the South Downs                                                                                                             | 23-MAR-09  | 22-MAR-10 | £375                          | £4,993            |
| University of East Anglia | Digital version of the 'stability of topsoil structure' map.                                                                                                                            | Research project - RELU Biomass project team - increased biomass crop planting.<br><br>2-5 users.                                                                                                      | 15-JUN-09  | 14-JUN-11 | £600                          | £24,000           |
| University of Sheffield   | NATMAP vector, SOILSERIES hydrology & agronomy, HORIZON fundamentals & hydraulics.                                                                                                      | Non- commercial use. For Bona-fide research purposes.<br>Project: 'Impact of catchment landscape structure on water quality variability' funded by Marie Curie fund.<br>Small multi-user - 2-5 people. | 25-MAY-09  | 24-MAY-12 | £375                          | £87,697           |
|                           |                                                                                                                                                                                         |                                                                                                                                                                                                        |            |           | TOTAL<br>(Bona fide Research) | £116,690          |
|                           |                                                                                                                                                                                         |                                                                                                                                                                                                        |            |           | £1,350                        |                   |



**DSPACE**

<https://dspace.org/>

## **Report of Activity for LandIS Support Quarterly Progress Report 1st Jul - 30th Sep 2009**

**Keay, Caroline A.; Farewell, Timothy S.; Rayner, Andrew P.**

**2011-10-14**

<http://dspace.lib.cranfield.ac.uk/handle/1826/6449>

Keay, C.A.; Farewell, T.S.; Rayner, A.P.; (2009). Report of Activity for LandIS Support for the Department for Environment, Food and Rural Affairs. Quarterly Progress Report Jul – Sep, 2009, NSRI research report number WN32150N for DEFRA,