Analysis and simulation of the Long-Term / Large-Scale interactions of C, N and P in UK land, freshwater and atmosphere

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BGS  
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CL Bryant

JHI*  
UCL  
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NERC RCF

New end date: 31 December 2015

* Funded by the Scottish Government
Temporal evolution of UK ecosystems

- Climate
- Forest clearance (Grazing)
- (Ploughing)
- Natural & semi-natural terrestrial ecosystem development
- Lake sediment accumulation

- Atmospheric deposition
- Agriculture
- Fertilisers
- Sewage
- Climate change
- Forestry

- Agricultural ecosystems
- Semi-natural ecosystems
- Rivers
- Lakes
- Lake sediments
- Groundwaters

Scenarios

-10,000  1800  2000  2100

NERC
Science of the Environment
LTLS research activities

**Atmospheric Model**
- Semi-Natural Terrestrial Unit Models (N14C)
- Agricultural Terrestrial Unit Models (RothCP)

**Erosion Model**
- Sediments
- CO₂, N₂ etc.

**Hydrological & Routing Model**
- Runoff
- G/water
- Rivers
- Lakes

**Measurements**
- soil denitrification
- river transport (¹⁴C)
- fuel experiments
- NPP
- soil survey (¹⁴C)
- lakes
- bracken survey
- peat survey

+ Biodiversity modelling based on biogeochemistry
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<th>Stakeholder activities</th>
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<td>• Meeting #1</td>
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<td>• Scenarios</td>
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State of the LTLS project

Completed

- Biogeochemical models
- New data collection
- Some papers

To be completed

- Biodiversity models
- Complete IM runs 1800-2000
- Run scenarios 2000-2100
- Stakeholders’ meeting
- Analyse outputs
- Write more papers
Presentations: posters

- Jess Adams: PO$^{14}$C in rivers
- Rachel Helliwell: Scenarios
- Susan Jarvis: NPP & biodiversity (1)
- Ed Rowe: Bracken study
- Dan Schillereff: Macronutrients in peat
- Simon Smart: NPP & biodiversity (2)
- Sam Tomlinson: Atmospheric modelling
- Sami Ullah: Denitrification
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<tr>
<td><strong>TODAY</strong></td>
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<tr>
<td>• Ulli Dragosits</td>
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<td>• Shibu Muhammed</td>
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