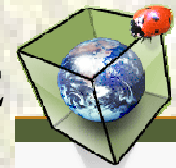


Update on Soil C&N Module work

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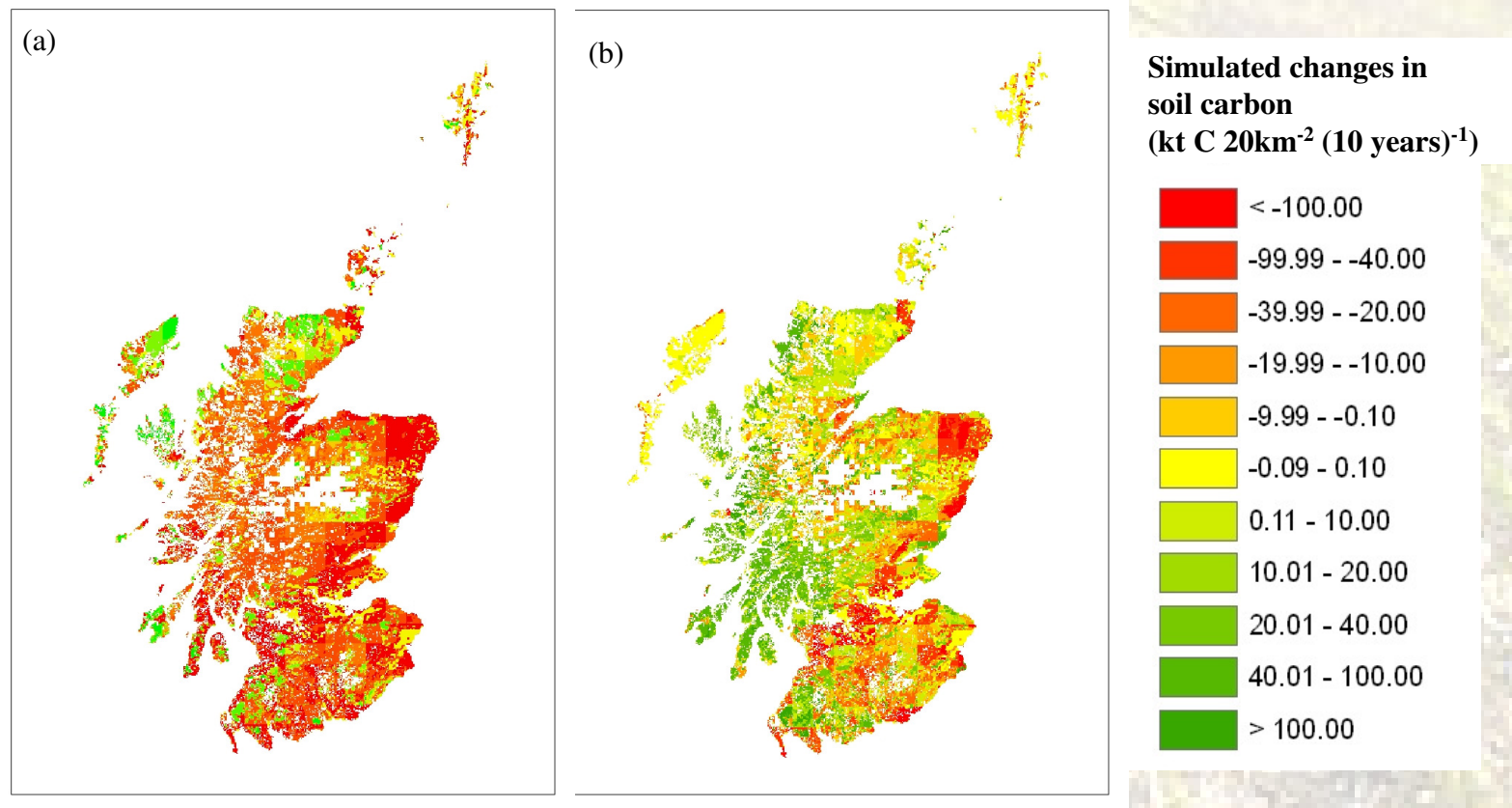
UNIVERSITY OF ABERDEEN

JULES Meeting – Exeter, June 2009

Ongoing projects developing the JULES soil C & N module

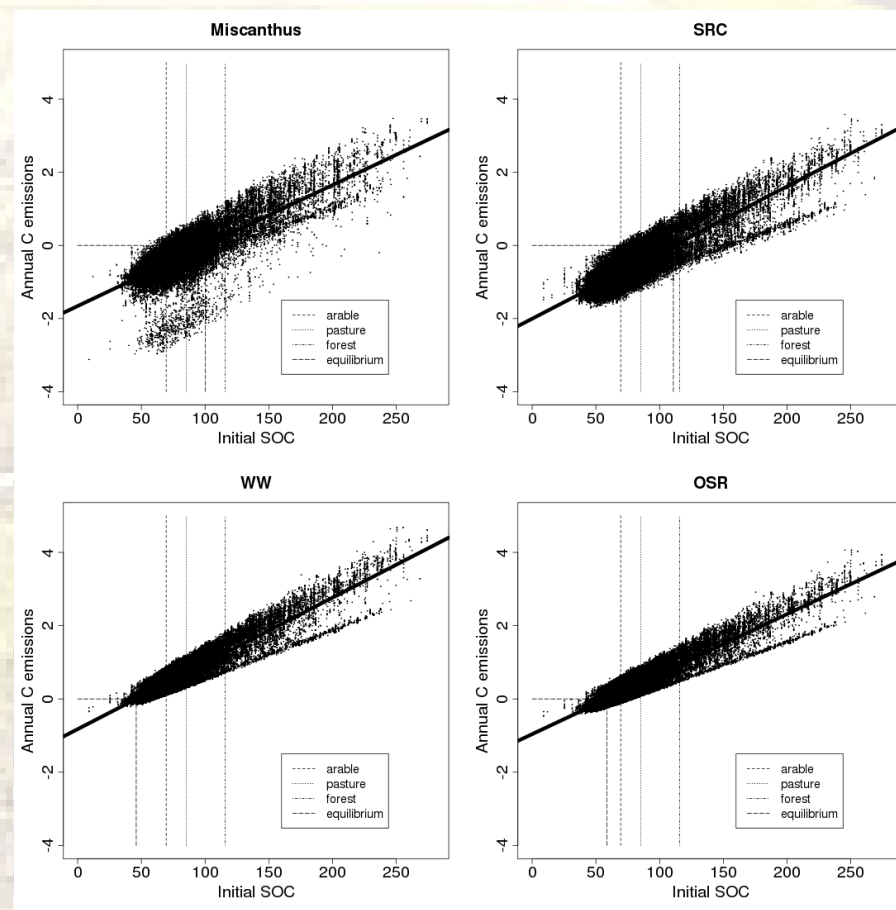
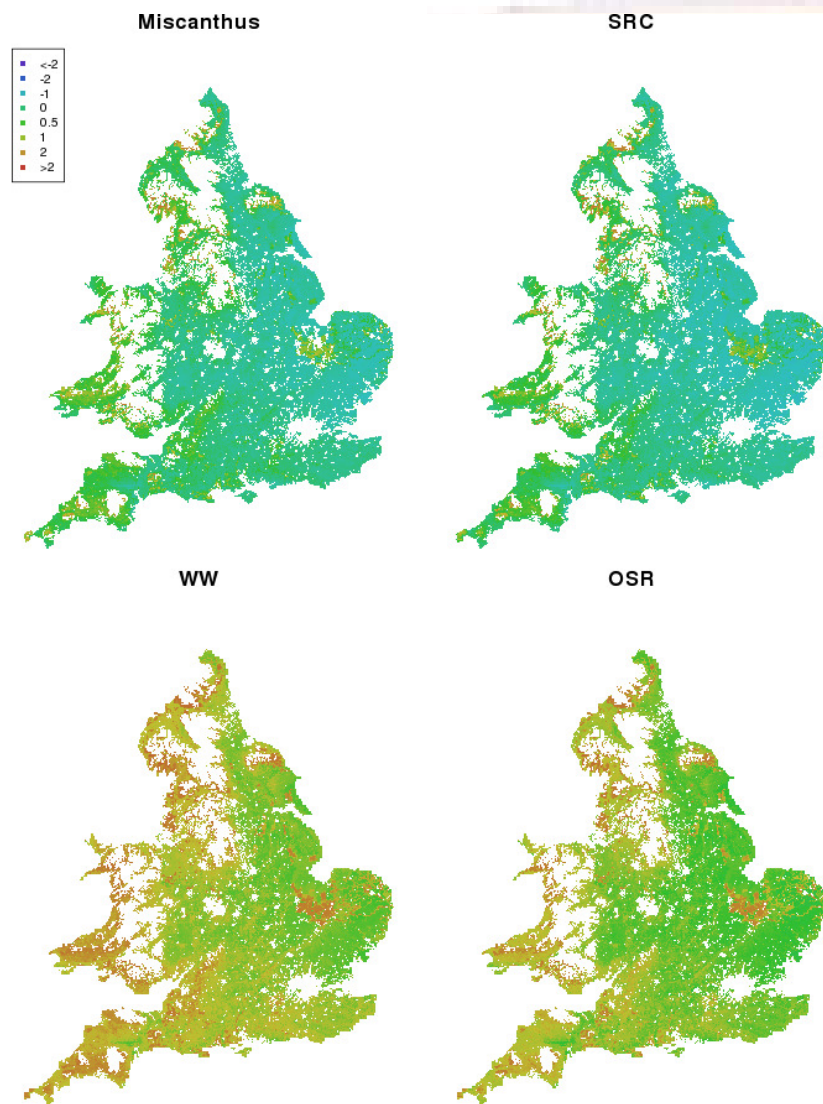
- Using JULES-Soil C&N coupled code
 - Defra [CEOSA0804] soil threats project (with David Cooper, CEH)
 - CEH CHESS project (PhD with Eleanor Blyth & Bridget Emmett, CEH)
 - JULES for croplands (with Chris Jones & Spencer Liddicoat, Hadley Centre)
 - QESM Methane project (with Doug Clark, CEH)
 - CEH Bio-energy projects (with Jon Finch, CEH)
 - IMOGEN runs (with Chris Huntingford, CEH)
- Using stand-alone Soil C&N module
 - Scottish Government, RERAD NSIS2 project
 - Welsh Assembly Government, ECOSSE-2 project
 - Defra [CEOSA0804] soil threats project (see also above)
 - Defra [SP0567] soil organic carbon project
 - NitroEurope / CCTAME / Carbo-Extreme (croplands only)
 - NNFCC project on bio-energy crops in the UK
 - QUEST Soils upland / peatland model comparison

Running with inventory data for Scotland



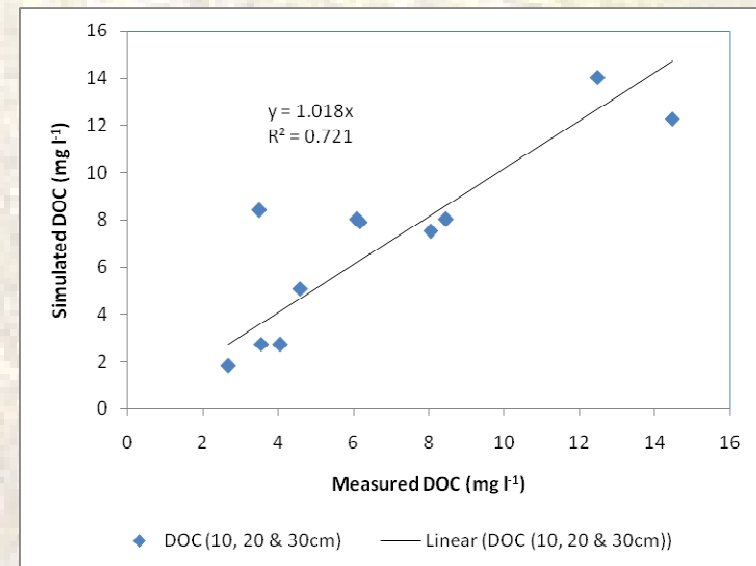
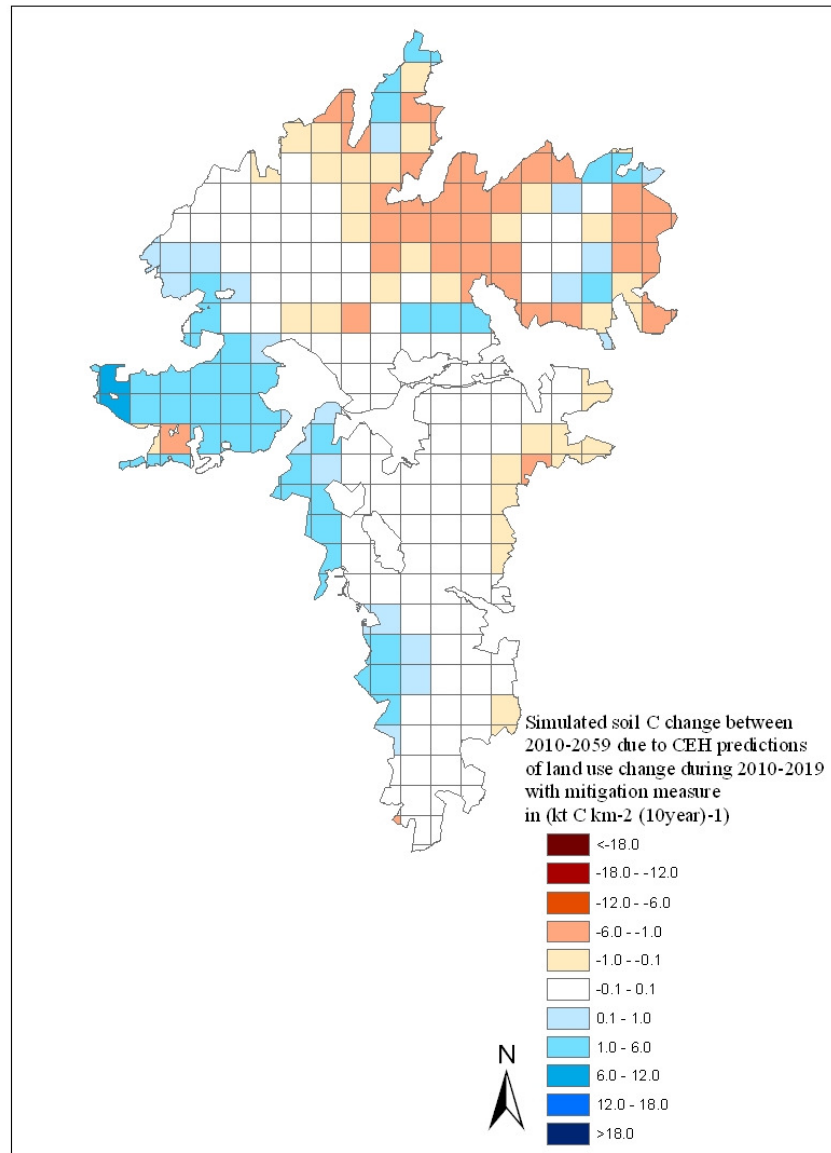
J.U Smith et al., 2009

...and for England & Wales



Hillier et al., 2009

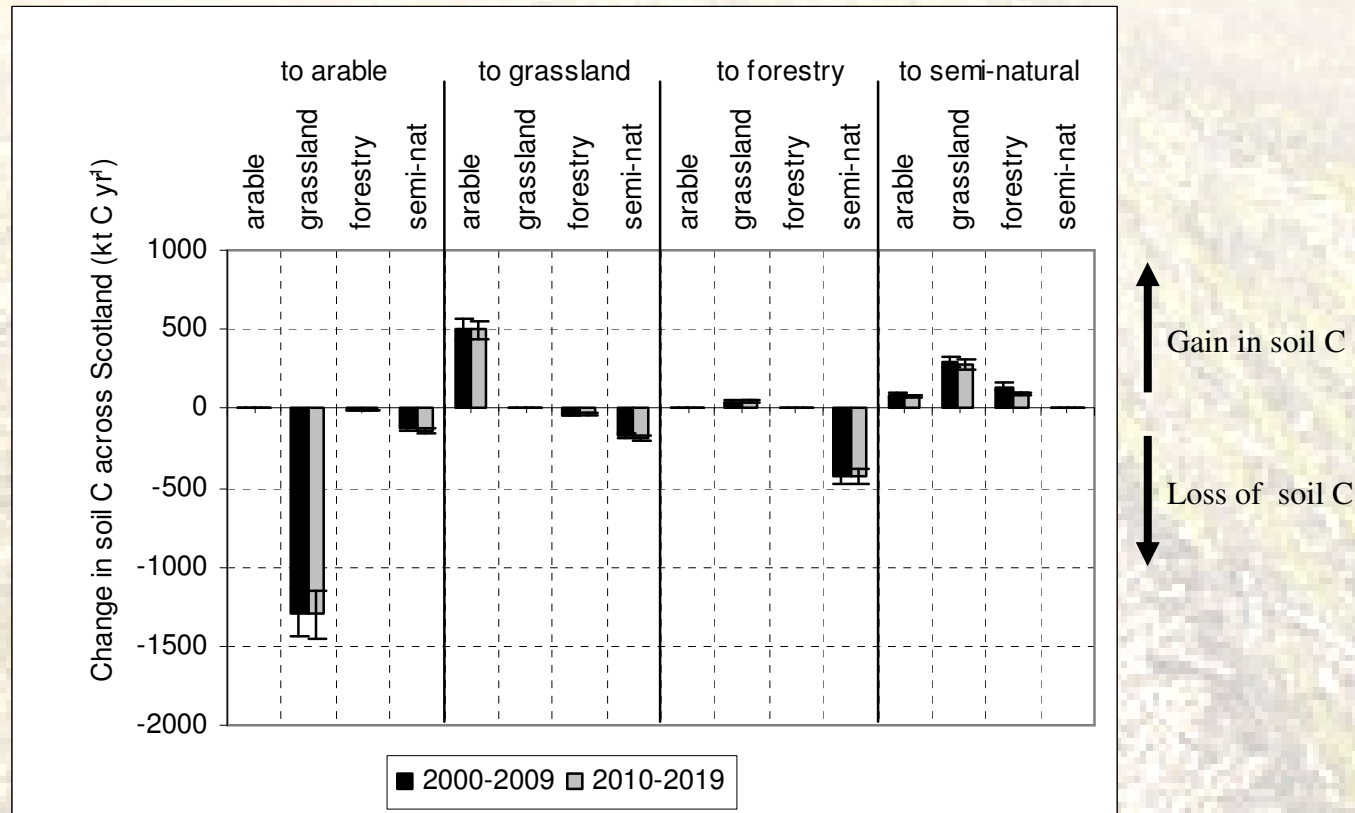
Tested against catchment scale data in Wales



DOC

Nayak et al., 2009

Comparison with National GHG Inventory



J.U Smith et al., 2008

Simulated soil carbon (0-95cm) at NSIS site with land use change semi-natural to forestry

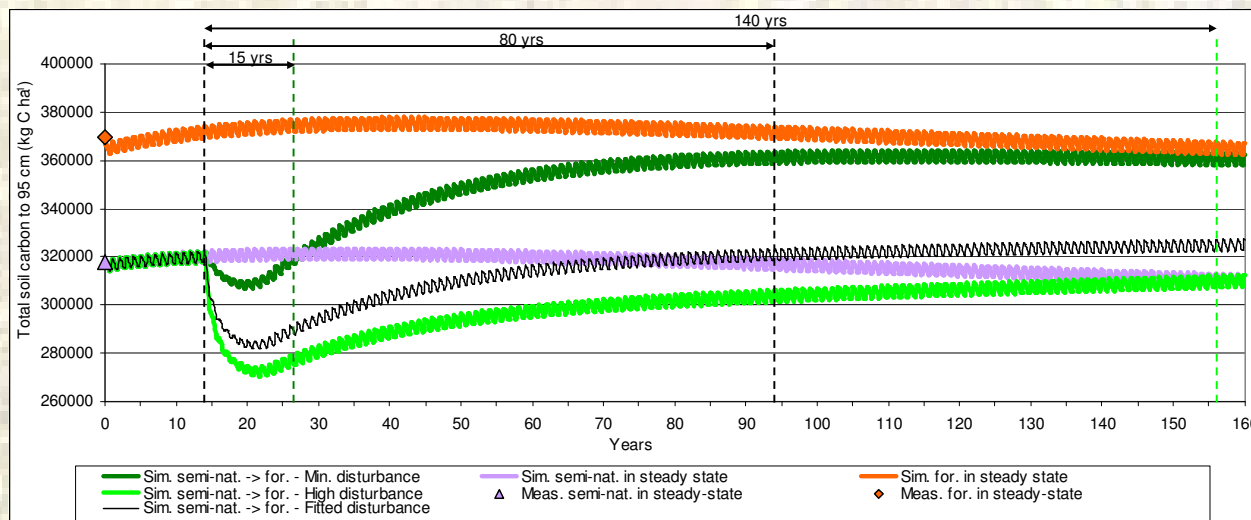
NOTE

Extrapolation of results over the 160 years using long term average weather data.

-Minimal disturbance, net increase in soil C after 15 years.

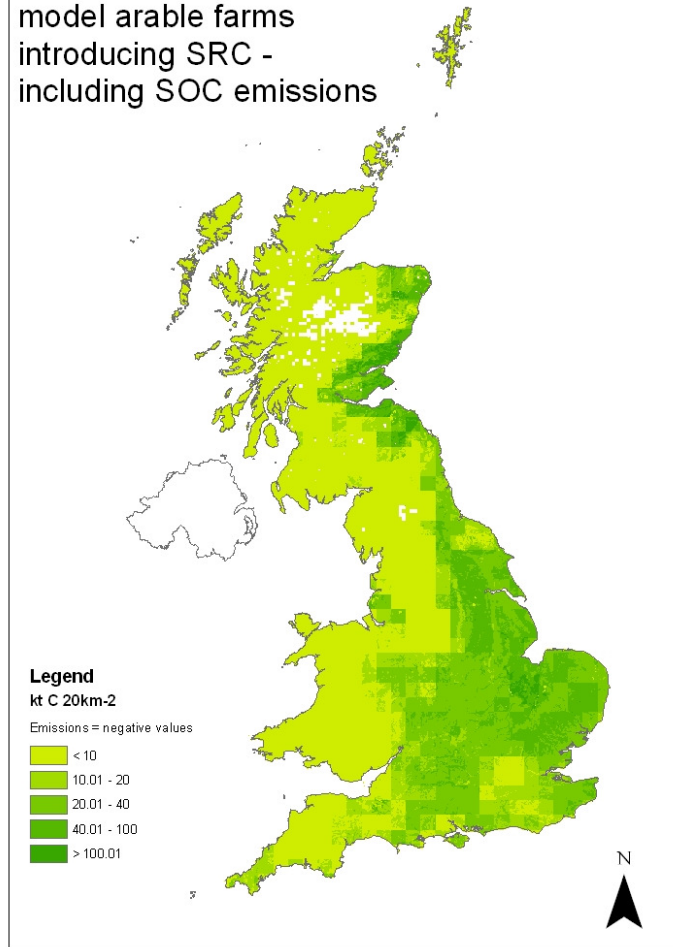
-If soil is disturbed, net increase in soil C after 140 years.

-This emphasises the importance of practices to minimise soil disturbance



Assessing the impacts of energy crops

"Emissions savings" of
model arable farms
introducing SRC -
including SOC emissions



"Emissions savings" of
model livestock farms
introducing SRC -
including SOC emissions

