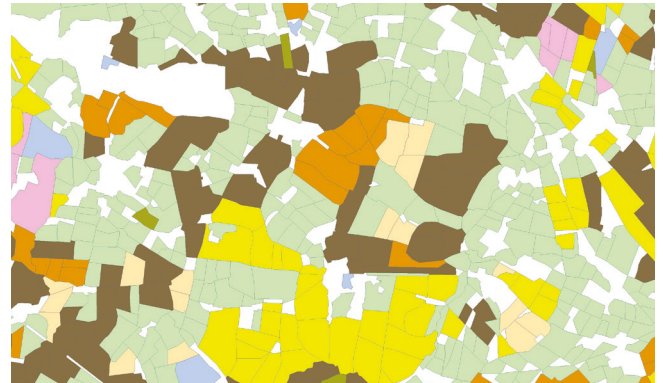# CEH Land Cover® *plus* Crops

New CEH Land Cover plus Products: Fertilisers & Pesticides

CEH have recently combined data from CEH Land Cover® plus Crops with large-scale surveys of agrochemical inputs to create two new data products: CEH Land Cover® plus Fertilisers and CEH Land Cover® plus Pesticides.

Developed in collaboration with Remote Sensing Applications Consultants Ltd, CEH Land Cover® plus Crops uses Sentinel satellite radar data to identify crop types in two million fields across Great Britain. Produced each year since 2015, it gives a highly accurate picture of cropping patterns over time and is widely used in commercial and research applications.
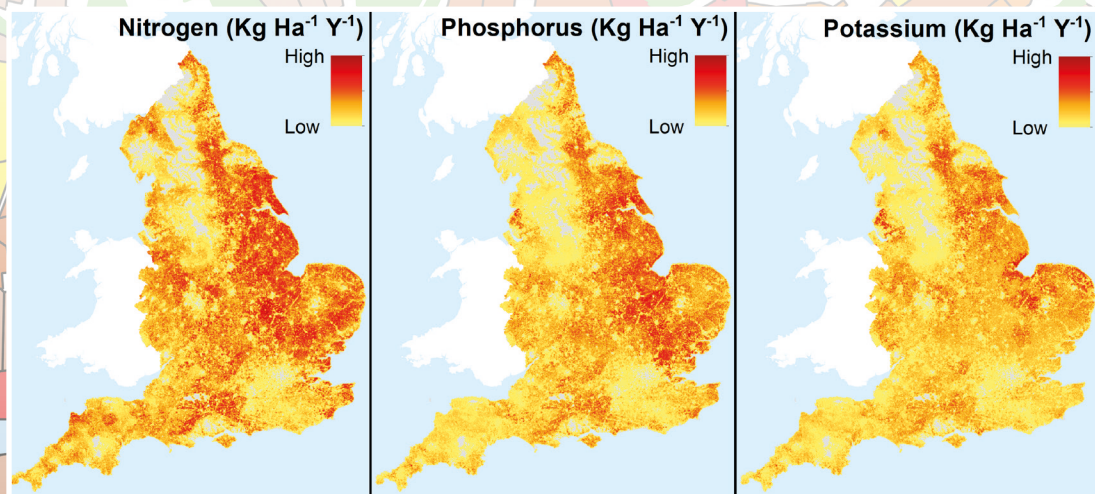
CEH Land Cover® plus Fertilisers

Estimated average total annual application of manufactured Nitrogen, Phosphorus and Potassium at 1km resolution for England.

- Uses anonymised, capture-resolution data from Defra British Survey of Fertiliser practice (2010-2015) to derive average annual application of manufactured fertilisers for each crop type per survey location.

- Uses a spatial interpolation model to predict these for every 1 x 1km grid cell in England, then derives total application using crop areas from CEH Land Cover® plus: Crops (averaged 2015-2017).

- Mapped estimates of uncertainty are presented alongside the modelled loading data.

Potential uses

- Prediction of environmental impacts, such as runoff, eutrophication and soil health.

- Planning and environmental protection, such as catchment sensitive farming and estimates of gaseous emissions.

- Supporting the agricultural industry, providing data on patterns of crop inputs.

Nitrogen (Kg Ha^{-1} Y^{-1})   High   Low

Phosphorus (Kg Ha^{-1} Y^{-1})   High   Low

Potassium (Kg Ha^{-1} Y^{-1})   High   Low
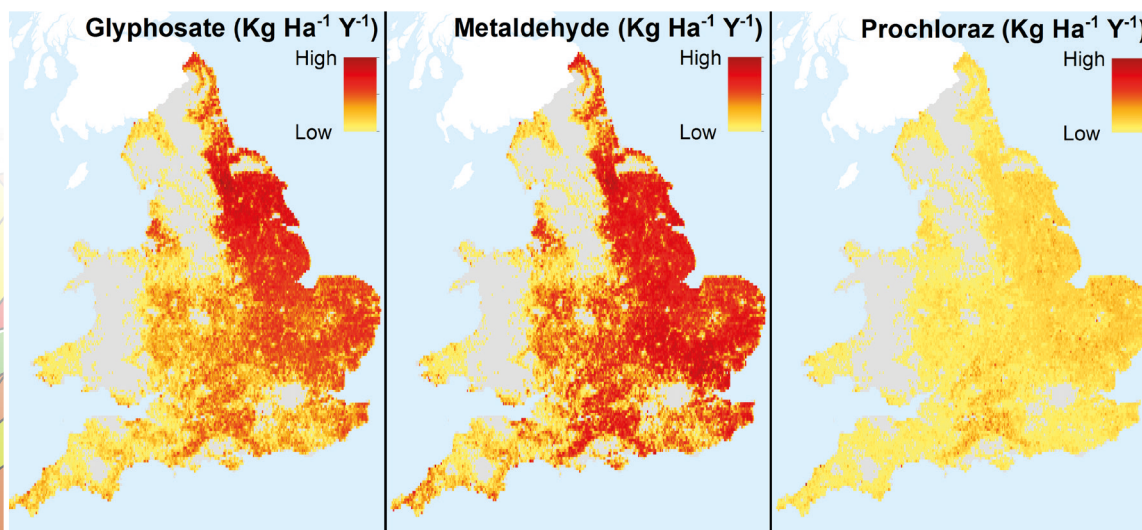
CEH Land Cover® plus Pesticides

Estimated average application rates of up to 150 pesticide active ingredients including fungicides, herbicides and insecticides at 1km resolution for England and Wales.

- Based on county-level data from the Pesticide Usage Survey (2012 - 2016).

- Models average annual application rate per active ingredient based on spatial pattern (according to, for example, variations in pest pressure and farming practices) and crop type.

- Produces estimated application rate per 1 x 1km grid cell in England and Wales, averaged across cropping patterns from CEH Land Cover® plus: Crops (2015-2017).

- Mapped estimates of uncertainty are available alongside the modelled loading data.

- Can provide data for single active ingredients or groups (e.g. by chemical family or target organisms).

Potential uses

- Wider monitoring of pesticide usage across landscapes in support of improved regulation.

- Water quality management in support of the Water Framework Directive.

- Prediction of the environmental fate of active ingredients and exposure risk to key groups (e.g. pollinating insects).

Glyphosate (Kg Ha^{-1} Y^{-1}) Metaldehyde (Kg Ha^{-1} Y^{-1}) Prochloraz (Kg Ha^{-1} Y^{-1})

LAND COVER plus

To register your interest in these products or to make an enquiry please contact the CEH Data Licensing team.

datalicensing@ceh.ac.uk   01491 692716

Centre for Ecology & Hydrology
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RSAC Remote Sensing Applications Consultants Ltd