

THE ENVIRONMENTAL CHANGE NETWORK (ECN)

The Environmental Change Network (ECN) is the United Kingdom's integrated network for monitoring environmental change. Detailed information is available at <http://www.ecn.ac.uk>. It is funded by a consortium of organisations and managed by the National Environment Research Council (NERC) Centre for Ecology and Hydrology (CEH). The objectives of the network are to establish and maintain a set of UK sites at which variables identified as being of major environmental importance can be measured. Long-term datasets obtained are being analysed to identify and improve the understanding of the causes of environmental change. There are 54 ECN sites across the UK. Most are freshwater sites but Drayton has an important place amongst the 12 terrestrial sites as the only site in the Midlands and the only lowland, mixed agriculture farm.

The objectives of the ECN are as follows:

- to obtain uniform and comparable long-term datasets at selected sites by means of measurement at regular intervals of variables identified as being of major environmental importance.
- to provide for the integration and analysis of these datasets so as to identify environmental changes and to improve understanding of the causes of such changes.
- to make these long term datasets available as a basis for research and for prediction of future changes.
- to provide for research purposes a range of representative sites where there is good instrumentation and reliable environmental information.

The more specific objectives for the Drayton site are as follows:

- to maintain Drayton as a participating site within the UK ECN.
- to maintain an up-to-date computerised database for the Drayton site, and to provide data to the ECN Central Co-ordinating Unit at CEH Lancaster.
- to participate in the analysis, interpretation and publication of the combined results from the ECN programme.
- to undertake long-term recording of climate, air pollution, precipitation and soil solution chemistry, soil characteristics, vegetation and fauna as detailed below.

Variable	Method	Frequency	Timing
Meteorology	Manual and automated recording.	Daily/hourly	All year
Precipitation chemistry	Capture and analysis of rainwater.	Weekly	All year
Soil water chemistry	Sampling sub-surface water using evacuated porous pots (Field 43).	Weekly	Oct-Mar
Atmospheric nitrogen dioxide	Passive diffusion tubes, positioned on a post on the edge of Field 43.	Fortnightly	All year
Atmospheric ammonia	Active denuder, permanently situated in a farm building.	Monthly	All year
Ground beetles	30 pitfall traps, sited along two field margins.	Fortnightly	May-Oct
Butterflies	Transect walks – 2km length.	Weekly	Apr-Sep
Moths	Light trap.	Daily	All year
Frogspawn	Recording dates of spawn laying, embryo hatching, etc. in farm pond. Measuring water temperature, ph and quality.	Daily	Feb - May
Spittlebugs	Counts of nymphs and adults. Assessment of colour morphs.	Twice annually	June & Aug
Birds	Common birds census and breeding bird surveys.	12 per year	Mar-Jun
Bats	Recording along two transects, using an ultrasonic bat detector.	4 per year	Jun-Aug
Vegetation	Botanical survey in fixed quadrats in grassland, arable, hedgerows and willow fields.	Annually	July
Rabbits/deer	Dropping counts along a 2km transect.	Twice per year	Mar & Sep
Soils	Intensive soil sampling.	5 yearly	
Grass and arable crop yields	Grass cuts from under exclusion cages and annual wheat harvesting.		May-Oct