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ANNEX 1. GLOSSARY and ACRONYMS

AC: see *Aggregate Class*

Acidification: Acidification is caused by acid depositions of three main pollutants: sulphur dioxide, nitrogen oxides, and ammonia. Acid depositions have negative impacts on water, vegetation, and soil.

Aggregate class (AC) I-VIII: the eight aggregate classes derived from aggregation of the 100 Countryside Vegetation System (CVS) vegetation classes by cluster analysis and used to stratify data for analyses of change (see *Bunce et al. 1999a,b*). This system was used until the Broad Habitat system (see below) was introduced after 1995.

Agri-environment schemes: a system whereby landowners are funded by the European Union to carry out environmentally friendly farming management. The payments are for income foregone.

Aquatic macrophytes: higher plants which are growing in, or on, water.

BAP: see *Biodiversity Action Plan*

Bioassessment: evaluation of the biological conditions of a body of water that uses biological surveys of the resident plants, animals, and other living organisms.

Biodiversity Action Plan (BAP): is the UK Government's response to the Convention on Biological Diversity (CBD) signed in 1992, the most recent review was in 2007.

Bootstrapping: method of calculating Confidence Intervals around an estimated mean, using repeat partial sampling of the original data (e.g. 1,000 times).

Boundary plots: one of the linear plot types recorded during the Field Survey, placed alongside field boundaries and being 10m x 1m in size.

Broad Habitats: a classification of the British countryside which is the framework used in the UK Biodiversity Action Plan to describe the full range of habitats represented in the UK (see also *Priority Habitats*).

Butterfly Food Plants: The number of plant species in each vegetation plot that are known to provide food for butterfly larvae (caterpillars). The list of plants includes those that provide food for common as well as scarce butterfly species.

CEH: see *Centre for Ecology and Hydrology*

Census data: data collected from every unit/member of a population, e.g. a complete inventory of land use information (see also *Sample data*).

Centre for Ecology and Hydrology (CEH): part of the Natural Environment Research Council, a funding partner and the contractor in Countryside Survey 2007. The successor to the Institute of Terrestrial Ecology.

CI: see *Confidence Interval*

Competitor score: The proportion of competitive species in each plot, and is relative to both the Stress tolerator and Ruderal Scores (see *those entries*).

Competitive species: the ability of tall perennial plants to out-compete other plants for light, leading to domination of plant communities. Often occurring in highly fertile soils.

Confidence intervals: a statistical range with a specified probability that a given parameter lies within the range.

Countryside Rights of Way or CROW Act: The 2000 Act provided for greater public access to unenclosed land in both upland and lowland areas.

CS: *Countryside Survey*

Countryside Vegetation System (CVS): A system of 100 vegetation classes that provide an impartial classification of the wider countryside. The vegetation of linear features such as hedgerows, streamsides and road verges has been included as well as that of open land.

Curtilage: The area of land surrounding a dwelling within the property boundaries. May include farm buildings and domestic outbuildings.

Ecotone: a transitional zone between two adjacent (plant) communities, where plants from both communities intermingle.

Ecosystem service: a useful 'service' provided by an ecosystem: for example, a rainforest could produce timber and can alleviate flooding; a chalk downland provides grazing land and a place for people to enjoy the countryside.

Ellenberg Scores: Scores attributed to species, which define their ecological range in terms of fertility, pH, light, and moisture (*Ellenberg 1991*). These were re-calibrated for the British situation and subsequently used in the ECOFACT program to interpret the Countryside Vegetation System and to explore causes of change.

Ellenberg pH score: An indirect measure of soil pH. It reflects the abundance of plants known to be associated with different levels of pH based on the Ellenberg value for soil reaction of each species.

Environmental Quality Index (EQI): an expression of the extent to which the freshwater fauna of a site matches that to be expected in the absence of environmental stress.

Eutrophication: nutrient enrichment or overload (usually phosphorus and nitrogen) which leads to excessive plant growth.

Error terms: (e.g. standard error) measures of the reliability of an estimate which has been based on a sample (e.g. when extrapolating from a sample of 1 km squares to a national or regional estimate).

Farmland Bird Food Plants: The number of plant species in each vegetation plot that are known to be important in the diet of a range of declining lowland farmland birds.

Fertility Score: An indirect measure of soil fertility. It reflects the abundance of plants known to be associated with different levels of nutrient availability.

Forbs: all plant species excluding only those that are woody (such as trees and shrubs), grass-like or mosses. Most frequently applied to flowering plants in grasslands.

Geographical Information System (GIS): a computer package which handles spatial information (usually as computerised maps) and which allows analysis of, for example, area, length and overlay.

GIS: Geographical Information System, stores locational (spatial) and associated data (e.g. species found at that location) on a computer system. Will manipulate and analyze the data.

GPS: Global Positioning System, uses signals from satellites to determine a locational grid reference on the ground.

Grass:Forb ratio: the ratio of the number of grass species present to the number of forb species (see Forbs). The natural log of the ratio of the total grass cover in each plot to the total forb cover in each plot.

Habitat Action Plan: Plans within the UK Biodiversity Action Plan which identify actions needed to stabilise and improve the status of habitats with high conservation value.

Habitat Quality Assessment or HQA: a measure of the diversity of natural features, such as waterfalls and gravel bars present; a higher score indicates greater habitat diversity and therefore quality.

Headwater stream: The source and upper reaches of a stream; the water upstream from a structure or point on a stream; the small streams that come together to form a river.

Institute of Terrestrial Ecology or ITE: one of the former research Institutes of the Natural Environment Research Council, now part of the Centre for Ecology and Hydrology (CEH). ITE established the first Countryside Survey in 1978.

ITE Land Classification: the system developed by ITE to classify each of the (approx) 240,000 1 km squares in Great Britain into one of 32 Land Classes, depending on its environmental affinities. Used to stratify the CS1990 and following Surveys.

Integrated Assessment: an assessment made using all the different types of data collected during CS and some external data; in order to investigate ecosystem services and functions and other studies.

Joint Character Areas: A division of England into areas with similar landscape character. This provides a picture of the differences in landscape character at the national scale, and a description of each JCA showing the influences which determine the character of the landscape.

Land Class: one of 32 environmental regions based on physical characteristics, usually called 'ITE Land Classes' which were defined as the basis for stratifying the Countryside Surveys.

Land Classification: a multivariate classification of all 1 kilometre squares in GB based on geology, climate and topography and thus independent of the biota of the land surface (*Bunce et al. 1996*).

Land cover map (LCM): a digital map of GB and later the UK, showing the principal land cover classes. Derived from interpretation of satellite imagery by CEH, as part of CS1990, CS2000 and CS2007 (to be reported in late 2008). Produced as:

LCMGB: Land Cover Map of Great Britain, produced as part of Countryside Survey 1990. A pixel-based land cover map, 25 m spatial resolution.

LCM2000: Land Cover Map 2000, produced as part of Countryside Survey 2000. Covered all of the UK. A parcel-based land cover map produced by image segmentation, 0.5 ha minimum mappable unit.

LCM2007: The latest LCM, to be completed in Autumn 2008.

Land cover: the covering of the land surface, being described in terms of land cover classes (eg arable crops, trees, buildings, bare rock), not its use (e.g. 'grassland' could be dairy pasture or a sports field).

LCM: see *Land Cover Map*

Light Score: An indirect measure of light availability at ground level. It reflects the abundance of plants that either tolerate shade or cast shade (e.g. woodland plants) through to weeds found in open, often disturbed situations, where there is much less shade. This association is based on the Ellenberg value for light of each species.

Linear feature: A wall, hedge, fence or strip of uncultivated vegetation less than 5m wide and more than 20m long.

Linear plots: 10m x 1m plots placed alongside field boundaries, streamsides and road verges in the 1 km Field Survey sites, from which vegetation data were recorded.

Macroinvertebrates: Animals without backbones, (mostly insects) large enough to be seen without magnification. Counts of macroinvertebrates are used in assessments of the biological quality of a river or stream.

Main plots: 14m x 14m plots placed at random in each 1 km Field Survey square (5 in each square), from which vegetation data were recorded.

Mean Trophic Rank (MTR): an assessment of the condition of streams based on the observed plant community,

Minimum Mappable Unit: The minimum area that can be reliably mapped, using a particular technique.

Moisture Score: An indirect measure of soil wetness. It reflects the abundance of plants known to be associated with degrees of wetness, based on the Ellenberg value for soil moisture of each species.

National Nature Reserves (NNR): Sites of national nature conservation importance, usually managed by Natural England; established and legally protected by the Wildlife and Countryside Act 1981

NICS: see *Northern Ireland Countryside Survey*

Northern Ireland Countryside Survey (NICS): a field survey adopting a similar approach to CS1990, funded by the Northern Ireland Environment Agency, carried out between 1986 and 1991, again in 1998 and in 2007/2008.

p values: a measure of confidence, 0.05% is equivalent to 99.5% confidence. Quoted in many diagram captions as one, two or three ***. See further explanation in *Chapter 1 Methodology*

Pattern analysis: general term to describe the measurement of elements in the landscape, such as area of fields, lengths of boundaries and edges, and the relationships between them.

pH value: the measure of acidity or alkalinity (a logarithmic scale of hydrogen ion concentration) low values are acidic (pH 1- 5), high are alkaline (pH 8 and above), neutral is pH7.

Plot types: the different types of sample vegetation plots placed in different landscape elements in the Countryside Survey (includes main, streamside, roadside, hedge, boundary and targeted habitat) (*Barr et al. 1993; Bunce et al. 1999b*). See *Chapter 1, Methodology* for a full list for CS2007.

Plots: areas of vegetation, usually defined by quadrats, within which species are recorded.

Point feature: a mapped feature standing out distinctly from its surroundings e.g. a tree, a pond.

Pooled plant species richness: a measure of species present in all ponds or freshwaters for the ponds (i.e. the total number of plant species recorded from all lowland ponds)

PSYM: the Predictive SYstem for Multimetrics, a pond quality assessment method, based on both plant and aquatic invertebrate data.

Primary codes: used in the Field Survey work of CS1990-CS2007 to define the general nature of a feature (eg woodland, lake, field of grass) (*see 'secondary codes' which describe the feature in more detail*).

Primary Habitats: The Habitat classification system used in N. Ireland only.

Priority Habitats: a select list of Habitats in the UK Biodiversity Action Plan identified as being of high conservation concern, on the basis of expert judgement.

Quality assessment: means of measuring the quality of work, e.g. by repeat sampling of vegetation plots.

Quality Assurance Exercise: partial re-survey carried out in 1990 and 1991 to assess consistency and reliability of CS1990 Field Survey, repeated in 1998 and 2007 as quality assurance for CS2000 and CS2007.

Relict hedges: boundaries recorded during the Field Survey which at some point in the past have been hedges but are recorded as something else at the time of survey (e.g. line of trees).

Riparian: Relating to or living or located on the bank of a natural watercourse (as a river).

River Habitat Survey or RHS: records different aspects of the physical structure of streams at ten checkpoints along a water channel, including bank material, channel substrate and riverside vegetation structure.

Ruderal score: The proportion of Ruderal species in each plot relative to both the Competitor and Stress-tolerator Scores (*see those entries*).

Ruderal species: plants that can take advantage of recently disturbed ground. Quick to arrive and quick to disappear in developing plant communities.

SAC: *see Special Area of Conservation*

Sample data: data which have been collected from only some members of a statistical population and which are usually assumed to be representative of the whole population. (*See also Census data*).

SE: *see Standard Error*

Secondary codes: used in the Field Survey part of CS1990, CS2000 and CS2007 to define the characteristics of mapped features in detail (eg tree species in woodland, size of lake, species present in grass field) (*see 'primary codes' above*).

Semi-natural vegetation: generally, vegetation which has not been created by human activity (management) although it may have been influenced by it.

Site of Special Scientific Interest (SSSI): Legally protected sites in the UK, with especial or unique wildlife and geology interest, of national or international heritage quality.

Spatial recording: recording the position of features (eg fields, trees) using a co-ordinate (grid reference) system.

Spatial scales: data recorded at one scale applied at national, regional or local levels.

Special Area of Conservation: A site designated by the UK Government under EC Directive 92/43 on the conservation of natural habitats and of wild fauna and flora.

Species richness: Number of species per plot (counting only consistently identified species), including native or non-native species. This is a simple measure of plant diversity. Increases in plant diversity may not always be beneficial for habitats.

SSSI: *see Site of Special Scientific Interest*

Standard Error (SE): estimated standard deviation of an estimate of a parameter.

Statistically representative: a large enough sample is available for a reliable analysis to be carried out.

Stock: the amount of any feature present at a point in time (often contrasted with change).

Stratified random sample: a sample drawn at random from within each of the different strata of a data set (e.g. the 1 km Field Survey sample squares were drawn at random from each of the 32 ITE Land Classes or strata).

Stratified sample: sample drawn from different divisions (strata) of the whole data set: intended to increase the chances of the sample being truly representative of the whole population.

Streamside plots: one of the linear plot types, placed alongside flowing watercourses.

Stress-tolerator score: The proportion of such species in each plot and is relative to both the Competitor and Ruderal Scores (*see those entries*).

Stress-tolerating species: plants that are well-adapted to harsh conditions of temperature, light and nutrients.

Successional (plant communities): the natural replacement of one plant community by another over time in the absence of disturbance. e.g. bare ground → grass and herbs → scrub → woodland → forest.

Targeted Habitat plots: 2 x 2 m plots recorded within areas of semi-natural vegetation during the Field Survey element of CS1990, repeated in 1998/99 and 2007. Up to five were recorded in each 1 km square.

Taxa (singular Taxon): any group of organisms that is sufficiently distinct from any other group to be distinguished by name at one or other level of classification.

UK BAP: *see Biodiversity Action plan*

Vascular plants: all plants excluding mosses, liverworts and algae (ie ferns, conifers and flowering plants).

Vegetation plots: the different types of plot, recorded in each 1 km Field Survey square for vegetation analysis (*see Chapter, Methodology for a full list*).

Verge plots: one of the linear plot types, placed alongside roads/tracks.

Wider countryside: term used to distinguish the majority of the 'ordinary' countryside from special, designated areas (usually in relation to wildlife designation). The Field Survey component of Countryside Surveys 2000 and 2007 provide information on the wider countryside (and Broad Habitats), rather than the smaller, rarer designated areas (eg SSSIs, ESAs etc).

Widespread Broad Habitat: those Broad Habitats, as defined under the Biodiversity Action Plan, which tend to be larger in extent and for which more accurate estimates of extent are likely.

Woody Linear Feature: a feature that includes traditionally managed hedges, planted avenue of trees or a line of scrub that was previously a managed hedge.