

Kent Habitat Survey

2012

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Integrated Habitat
System Classification





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3 Integrated Habitat System Classification

The habitat classification system used for the KHS is the Integrated Habitat System (IHS) that was developed by the Somerset Environmental Records Centre (SERC) in 1999. It was designed to be used in the UK, with emphasis on distinguishing areas that correspond to Biodiversity Action Plan (BAP) Broad Habitat Types, priority habitat types and Annex 1 habitats of the EU Habitats Directive (1992). Its design allows data from both Phase 1 and National Vegetation Classification (NVC) surveys to be translated into appropriate IHS classes, and subsequent UK BAP habitat types although classes are not always equivalent. The system uses GIS technology for survey and recording habitat features, and can be used for surveying by both remote sensing (aerial photographs) and in the field.

3.1 IHS Design and Data Recording

The system is based on a classification hierarchy, with an overall class describing the habitat type, and sub-classes covering different sub-types. These may then be separated out into further divisions, representing distinct habitat types. The latter divisions may correlate with separate UKBAP priority habitats or Annex 1 habitat types, or may reflect differences recorded in NVC surveys.

Each of the classes and sub-divisions has a brief description, which includes information on types of habitat that are included or excluded. Many of the classes have lists of species that can be used to indicate the presence of a particular class (see Appendix 2), which is helpful for habitat identification in the field or

for translation of field survey information recorded using other habitat classification systems.

In addition to the habitat classes, the IHS enables the recording of other features present, as well as the management of the habitat where appropriate. Features, such as scattered scrub or trees, can be recorded as a matrix associated with a habitat.

In some cases a habitat complex code can be used in addition to habitat, matrix and management codes. These have been used where a complex of habitats has UK BAP priority habitat status, such as coastal and floodplain grazing marsh, but covers several habitats that cannot be put into a single broad habitat class. In the case of coastal and floodplain grazing marsh, this encompasses grassland or grazing marsh, the ditches that surround them and associated wetland communities.

Field survey allows further description of the habitats through the use of keyword check-boxes and addition of comments, as well as recording species data (see section 4).

3.2 Why Use IHS?

The benefit of the IHS system is that it provides a rapid and fairly comprehensive habitat description, which identifies UK BAP priority and Annex 1 habitats. This method of classification is less time-consuming than NVC surveys, but is more detailed when describing and identifying priority habitats compared to Phase 1 survey methods.

The hierarchical nature of the system enables the classification to be used by surveyors with a range of abilities. While requiring moderate botanical skills, it does not need expert botanists in order to identify priority habitats in the field. This hierarchy also allows the

system to be used in API, and particular classes are present for use where identification is uncertain. The range of habitats covered by the system has been expanded to cover some of the more complex biotopes, such as those of coastal and marine areas. As described above, the design of the system has allowed some additions that create a better match between IHS classes and observed habitats in the field. However, this also creates a potential for duplication of changes in classification, as currently there is no central editing of the system across the UK.

A draw-back of this method lies in the relatively broad classes used to describe non-priority habitats, where some of these classes are a poor fit for the habitat present. For example, wet or marshy grasslands, which are currently described as GN32 Tussocky grassland when rushes are abundant, do not have an appropriate sub-class where the flora differs from this. Other areas with poor correlation to observed habitat are dune slack communities and some forb rich wet grasslands.

3.3 IHS Classes and the Kent Habitat Survey

The IHS classification system continues to evolve from the initial system developed by SERC. Following the IHS hierarchy, additional IHS sub-classes were created for the 2006 and 2009 EA surveys. More sub-classes have been added specifically for the current KHS, with the result that there are now 529 habitat categories within the system, covering both upland and lowland habitats. Some of these have been added because of additions to the UK BAP Priority habitats, and other sub-classes because they created a closer fit with the habitats observed and/or were related to NVC classes.

The current Kent survey has recorded 228 lowland habitat types. This is more than the number recorded in the 2003 Kent habitat survey, since the finer differentiation of some of the habitat classes, such as apply to chalk grassland, had not been developed. This has implications for comparison of habitats between the two surveys but these have been discussed in the relevant results sections.

3.3.1 Changes

In making changes to the IHS it is crucial to preserve the structure. The IHS structure only permits nine sub-classes of any one class. For example SS19 is the ninth sub-class of SS1Dunes. It is not possible to add another at this level of the hierarchy as SS20 would be a subclass of SS2, Machair. In order that sub-classes map to the correct group it may be necessary to introduce intermediate classes. For example EM18 Tussocky swamp vegetation is an artificial construct in order to permit enough slots under the EM1 group to fit all the swamp types.

In other instances classes were envisaged as API classes where it is not possible to determine the appropriate sub-class without field survey. For example coastal grazing marsh is recorded by API as GN4 Grazing marsh pasture and would require field survey to differentiate between the species rich and the species poor types. Changes to the IHS structure should accommodate the need for a classification designed for both API and field survey.

The main changes that were incorporated in the current survey and were used during API process were:



Scrub on priority habitats

In the initial version of the IHS scrub woodland was a single class, WB2, where the scrub cover did not form a recordable habitat in its own right, for example, Dunes with Sea Buckthorn. This made it difficult to identify scrub woodland that had the potential, if cleared, to recreate priority habitats. For this reason the following scrub woodland categories were used where appropriate within the relevant priority habitats:

- WB21 – scrub woodland on dunes
- WB22 – scrub woodland on calcareous soils
- WB23 – scrub woodland on heathland

Traditional Orchards

In 1990, traditional orchards were recorded as plantation broadleaved woodlands in semi-improved grassland. In 2003, traditional orchards were recorded as grassland with a management code of CL3 un-intensively managed orchards. Traditional orchards became a priority habitat in 2007.

In the current survey, many traditional orchards were identified by API, or cross-referenced from the Traditional Orchard survey organized by PTES. There is now a whole series of classes for traditional orchards, allowing description of the type of orchard present. However, during field survey, where the grassland can be recorded as a priority habitat, chalk grassland for example, the grassland code prevails with the use of the CL3 management code. In the current survey, this classification was not used.

All traditional orchards were flagged for field survey, although not all could be accessed and were therefore surveyed by API only.

Heathland

This was poorly covered in the 2003 survey, where the heathland class was HE1. This is now retained for dry heath, with a series of sub-classes having been created under this heading. A new series describing wet heath, HE2 and sub-classes, has been added, as well as a class HE3 for Lichen/Bryophyte heath (HE4 Dry atlantic coastal heaths with *Erica vagans* is described within the IHS system but is not present in Kent). These newer classes required field survey to accurately determine the nature of the heathland present and so all heathland areas were flagged for survey.

Shingle classes

The original IHS was limited to the two Annex 1 classes, however, Kent has one of the largest expanses of vegetated shingle in Europe with a complex range of shingle habitats. These were mapped in detail by Ferry, B. *et al* (1990) and the expanded IHS shingle sub-classes are derived from the classification used for that mapping.

Dune classes

The hierarchy for the dune classes was expanded to incorporate the NVC communities with an additional dune slack class, SS1745 Rush pasture dune slack communities, to accommodate the nationally scarce *Juncus acutus* community found in the Sandwich dune formations. The correlation between the NVC dune slack communities and those found at Sandwich are poor and, in the light of detailed field survey, the class definitions may benefit from further revision.

Chalk grassland and Acid grassland

The hierarchy has been expanded to incorporate the NVC communities. With a full suite of chalk grassland habitats now available, the inverse classes GC1Z and GA1Z are now used to record the “semi-improved” communities that do not meet the Annex 1 criteria. These classes, while not reaching the UK BAP standard are, nevertheless, an important grassland resource with significant natural heritage value.

Neutral grassland

A number of new classes were extracted from the inverse neutral grassland group (GNZ, Other Neutral Grassland) by the Environment Agency coastal mapping programme. These were largely designed to make a clearer distinction between varieties of coastal and floodplain grazing marsh. Within the Lowland meadow group, the hierarchy has been expanded to incorporate the NVC communities alongside the Annex 1 class GN11 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*). Together with GN12 Lowland meadows and pastures (*Cynosurus cristatus* – *Centaurea nigra*), these classes equate to UK BAP neutral grassland priority habitat found in Kent.

Field survey identified a problem with some lowland meadow communities that did not meet the UK BAP or Annex 1 criteria, or correlate with NVC classes. These have natural heritage value and it would be inappropriate to group them with the species poor broad inverse group ‘Other Neutral Grassland’ (GNZ). These communities have been mapped as GN1Z, and many of these equate to the classification of species-rich semi-improved neutral grasslands of Phase 1 habitat surveys.

A further neutral class Brownfield grassland (GN34) has been added to map extensive areas of coarse grassland on bare ground, often rich in ephemeral herbs that are common in areas of former industrial sites, redevelopment or agricultural set aside.

Brief habitat descriptions are presented in the Appendix 2.

