



Kent Habitat Survey 2012

Executive Summary





The ARCH Kent Habitat Survey

The ARCH Kent Habitat Survey was part of the European Interreg IV 2-Seas project Assessing Regional Changes in Habitat (ARCH) Project. The Project was a Kent Biodiversity Partnership initiative led by Kent County Council in collaboration with the Conseil Regional of Nord-Pas de Calais and the Conservatoire botanique national de Bailleul. Other project partners included Kent Wildlife Trust, Kent and Medway Biological Records Centre and the Environment Agency, with additional contributions from the Unitary Authority of Medway¹ and the District and Borough Councils of Canterbury, Maidstone, Swale, Tonbridge & Malling and Tunbridge Wells.

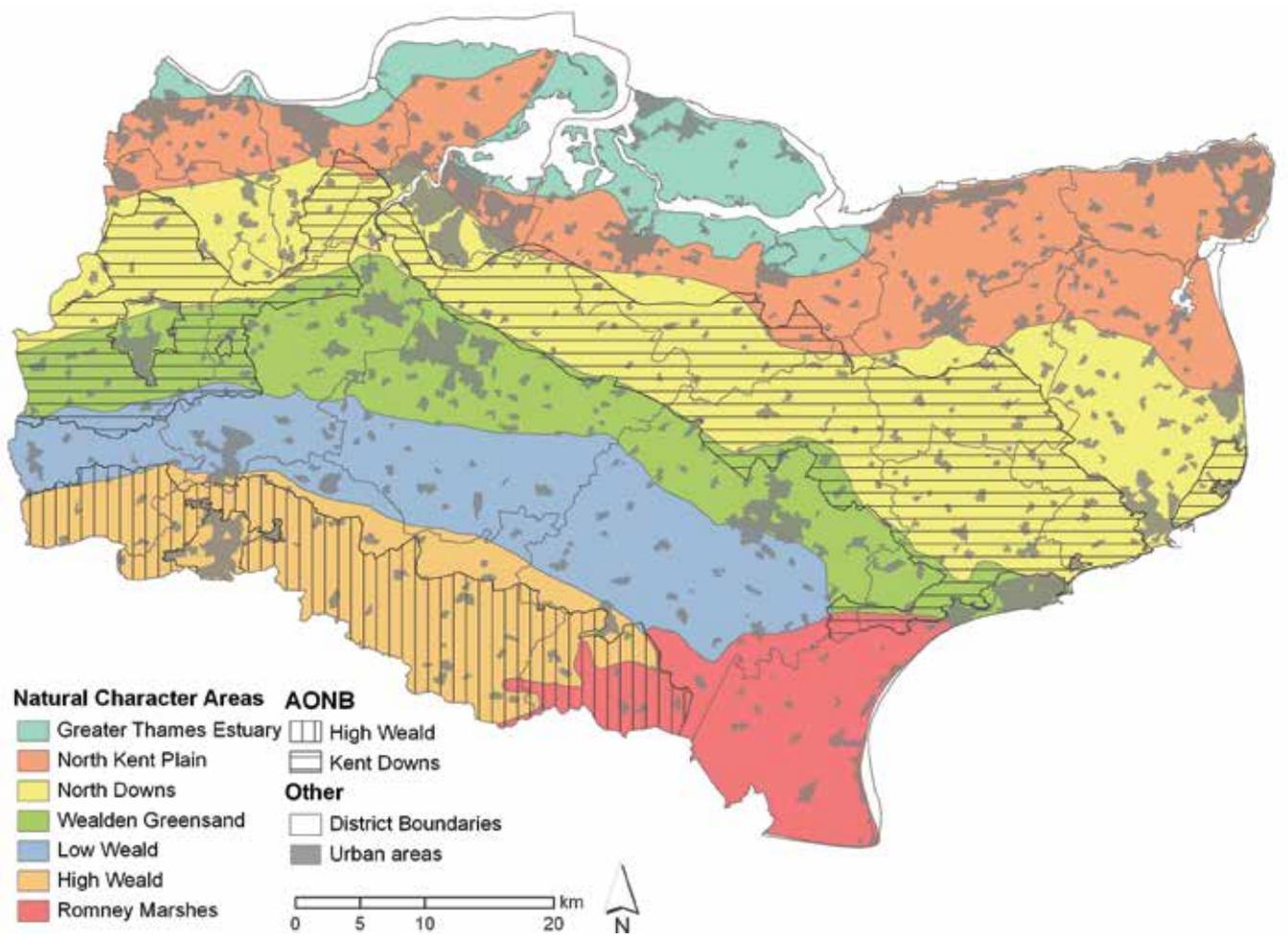
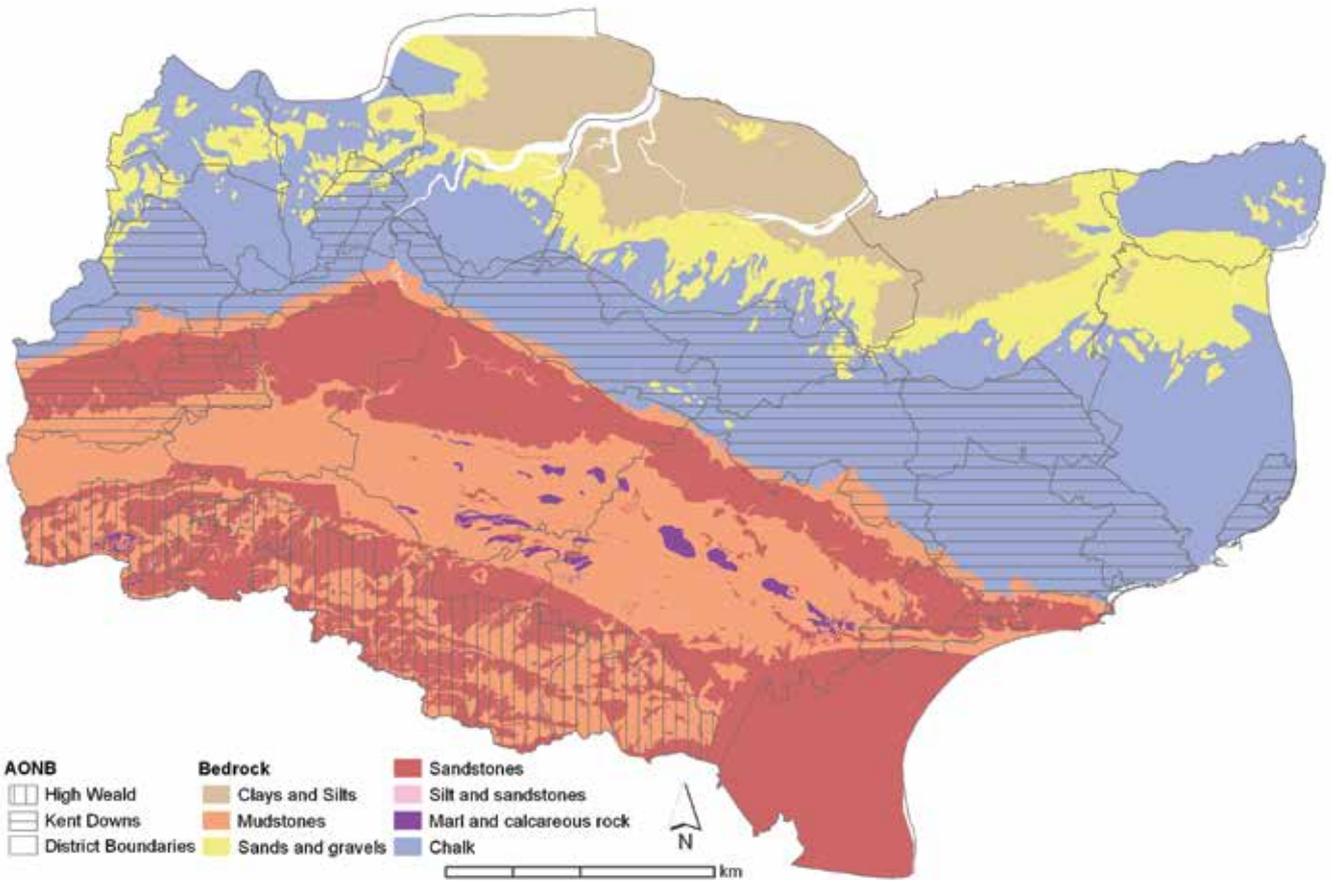
Habitat surveys provide ecological information on habitat type and potential importance for nature conservation. The locations and extent of habitats are mapped to provide a clear spatial record that can inform land use, planning and management decisions. This county-wide survey (including Medway Unitary Authority) is comprehensive and records all habitats in Kent and Medway. Of particular interest for this survey is the recording of semi-natural habitats, for example semi- or unimproved grasslands, and especially those that have high natural heritage value, such as heathland and acid or chalk grassland.

Here we describe the background to this part of the ARCH project and give key findings of the habitat survey and land cover analysis.

¹ Medway Unitary Authority is under the administration of Medway Council. However, it is an integral part of the peninsular land mass of Kent and has been included within the Kent Habitat Survey. All references to Kent, unless specifically stated, include Medway Unitary Authority

KEY FINDINGS

- The natural and semi-natural habitats of Kent cover 27% of its surface area
- The built environment, including industry, development, travel infrastructure and urban areas cover 16% of the county
- Arable and Horticulture is the land use covering the greatest area, 35% of Kent, followed by intensively managed Improved Grasslands at 30%
- Woodlands are the largest semi-natural habitat in Kent, covering 12%, of the county with 11% being broadleaved, mixed or yew woodland
- Traditional orchards occupy 0.4% but comprise around 10% of the Traditional Orchard area in England
- Kent has a very small resource of lowland meadow, with just over 5ha of UKBAP and EU Annex 1 lowland hay meadow. This survey has produced the first records for this habitat type in Kent. A further 19ha of lowland meadow and pasture is also UKBAP priority habitat
- Heathland is one of the county's most rare and fragmented habitats. Around 74ha was recorded from a number of sites across the county, an increase on the 52ha recorded in 2003. There are seven main clusters of heathland in Kent, with 19 further small sites of heathland found across the county. The largest cluster of heathland contains 25ha
- The county contains several nationally and internationally important habitats around the coastline including chalk cliffs and reefs, and vegetated shingle





Conserving Kent's natural habitats

Kent's natural resources

Kent is one of the largest counties in England by area, covering 391,823ha. Its varied landscape has a wealth of natural features and wildlife habitats. The complex geology of the region, soils, topography and other environmental conditions, have all influenced Kent's landscape and habitats. In addition, the long coastline has a range of important, and in some cases unique, coastal and marine habitats.

Further influences on Kent's countryside come from its location. It has a temperate climate subject to continental weather influences due to its proximity to mainland Europe, generally being drier than the UK average, with warm summers and cold spells in winter. As a result, the county can support many species uncommon elsewhere in Britain. Additionally, it has an ancient landscape history, with many of the semi-natural habitats being a product of historic land management practices, such as the grazed chalk downland of the North Downs, and ancient coppice woodland that spreads across the South East.

Natural and semi-natural habitats² in Kent represent around 27% of the county's surface area. These habitats provide considerable benefits through their visual, cultural and amenity value. Many of these habitats are inherently beautiful and are integral to the attractiveness of Kent's countryside. However, they are also an important resource, not just for the many diverse species they support, but because they contribute to the maintenance of our environment through the services provided by ecosystems, such as carbon storage and rainwater retention and purification.

As with many areas in Britain and across the globe, the loss of natural heritage in Kent has accelerated over recent decades. Efforts have been made to address these issues.

There are pressures on land use which are specific to Kent's location, such as its proximity to London and as a gateway to Europe, through road, rail, sea and air links. A range of factors, including population increase, housing development, transport links and industry, all require increased space and resources.

In addition to these pressures on land use, there are some general trends which, historically, have had a negative effect on the natural diversity of Kent. Some of these factors have included:

- **Direct loss of habitats** - through increased development or other land uses, such as mineral extraction
- **Intensification of land management** – such as use of chemical fertilisers and pesticides in farming, ploughing up of semi-natural grasslands, loss of traditional orchards
- **Lack of appropriate management** – such as the loss of woodland management as the woodland resources become uneconomic to extract
- **Habitat fragmentation** – species movement or migration is impaired and populations can become isolated, making them less able to survive or adapt to changing climate conditions
- **Invasion of non-native species** – these can out-compete native species
- **Climate change** – loss of land through sea-level rise, changes in temperature, weather and other environmental factors altering habitat composition and species movement and survival

Biological diversity and the Kent Biodiversity Partnership

As part of the UK's national strategy to halt biodiversity loss, Biodiversity Action Plans (BAPs) were developed in response to the 1992 United Nations Convention on Biological Diversity (Rio de Janeiro). These aimed to help conserve and aid recovery of the most threatened species and habitats. In 1997, the Kent

² Natural habitats are considered to be those biological communities that are largely native plant and animal species that have not been modified by human activity. Semi-natural habitats support mainly native species, but are those where human-induced changes can be detected or are managed by human activity. In Kent, there are only limited areas that can be classified as natural habitat so, to simplify the text, the term semi-natural habitats has been used for both natural and semi-natural habitats.



Biodiversity Partnership developed the Kent Biodiversity Action Plan, to conserve, enhance and restore biodiversity in Kent, and to contribute to the national UK BAP targets. Within the county, there are 24 UK BAP priority habitats grouped into 19 Habitat Action Plans (HAPs).

Many areas of BAP priority habitat were recorded in the previous Kent habitat surveys, but these surveys are now many years old. In order to prevent further unnecessary loss of key habitats, and to identify areas suitable for habitat restoration, it is necessary to have recent survey information. To this end, the Kent Biodiversity Partnership proposed a third Kent Habitat Survey, to update and expand the information on natural and semi-natural habitat extent and composition, and to provide better information in order to respond to the aforementioned trends.

Historical background to the survey

The current survey is the third in a series of county-wide habitat surveys over 20 years. The results from these surveys are important and unique resources that have done much to inform conservation and planning work across the region.

The first Kent Habitat Survey (KHS) was undertaken between 1990 and 1994. This was a Phase 1 survey³ of all habitats, involving a large team of field surveyors who mapped the county's habitats using paper maps, adding species data and habitat information in the form of target notes. The semi-natural habitats identified during this survey were then digitized and habitat areas calculated, enabling subsequent users to access the data easily.

Between 1999 and 2002, the survey was repeated to update this dataset, with the results published in 2003 (KHS, 2003). This survey used the Integrated Habitat System (IHS) classification method and was the first digital field survey for the county. The whole area was mapped using aerial photography interpretation (API) and geographic information systems

(GIS). To confirm the habitat identification from the aerial photographs, a small proportion of the total survey area was ground-truthed and these data used to refine the API process. In addition, using data from the first survey, areas of natural and semi-natural habitat were identified for field survey, focussing on areas that were potentially both UK and Kent BAP priority habitats.

However, the second survey faced challenges, with the outbreak of foot-and-mouth disease in 2001 reducing the time available for field survey to the final year of the project. As a consequence, some habitats were poorly recorded, for example, semi-improved grasslands. Unless they had been recorded as species-rich grassland in 1990, they were not field surveyed and were classed with the improved grasslands, resulting in an apparent large net loss of this semi-natural resource since 1990.

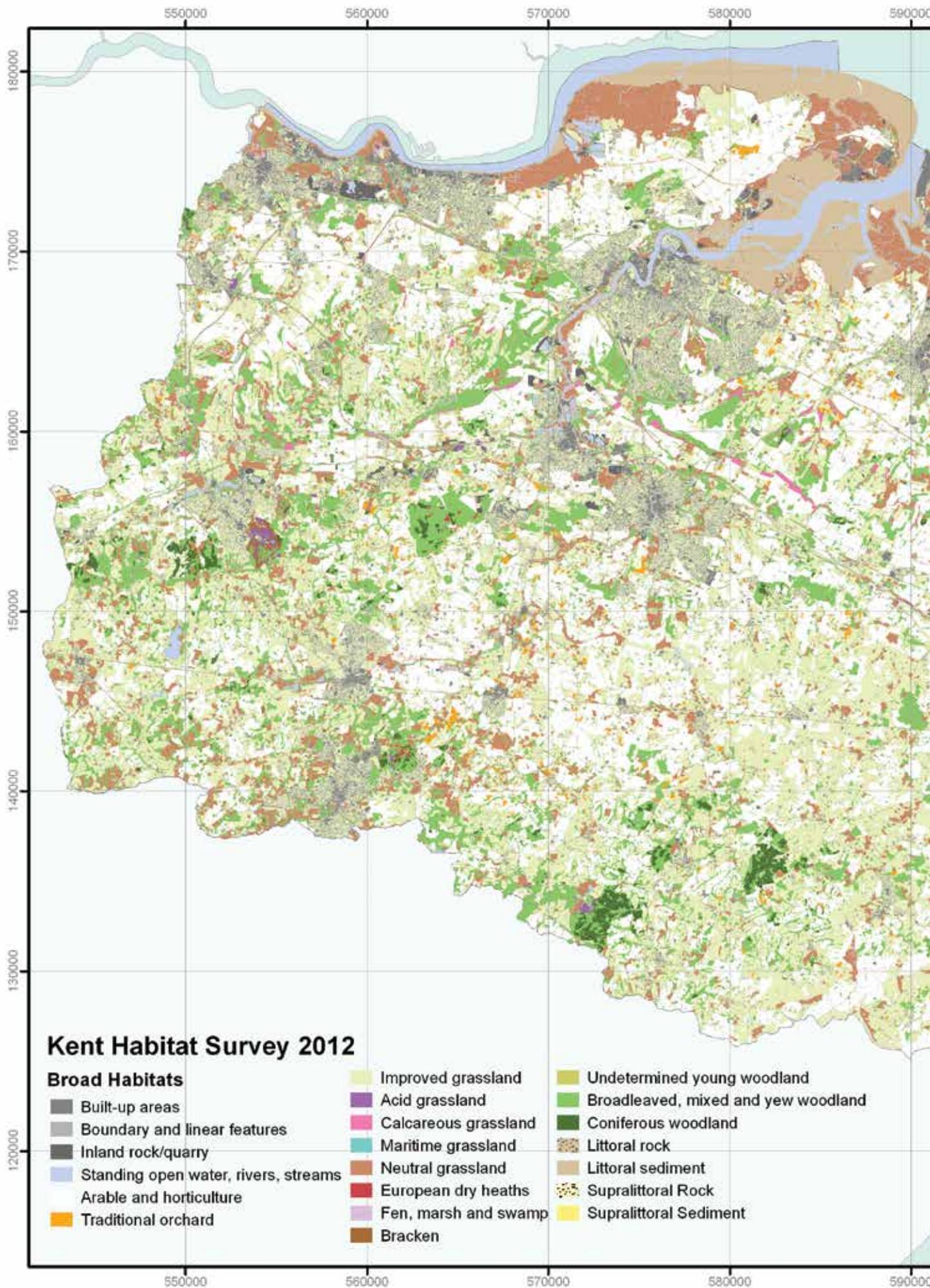
The data from these two surveys have been available for general use via Kent Landscape Information System (K-LIS), and specific species and GIS data have been available to partner organisations and through the Kent and Medway Biological Records Centre (KMBRC). Both surveys identified habitat areas of county importance for wildlife, which were subsequently designated as Local Wildlife Sites (LWS; previously called Sites of Nature Conservation Importance, SNCIs).

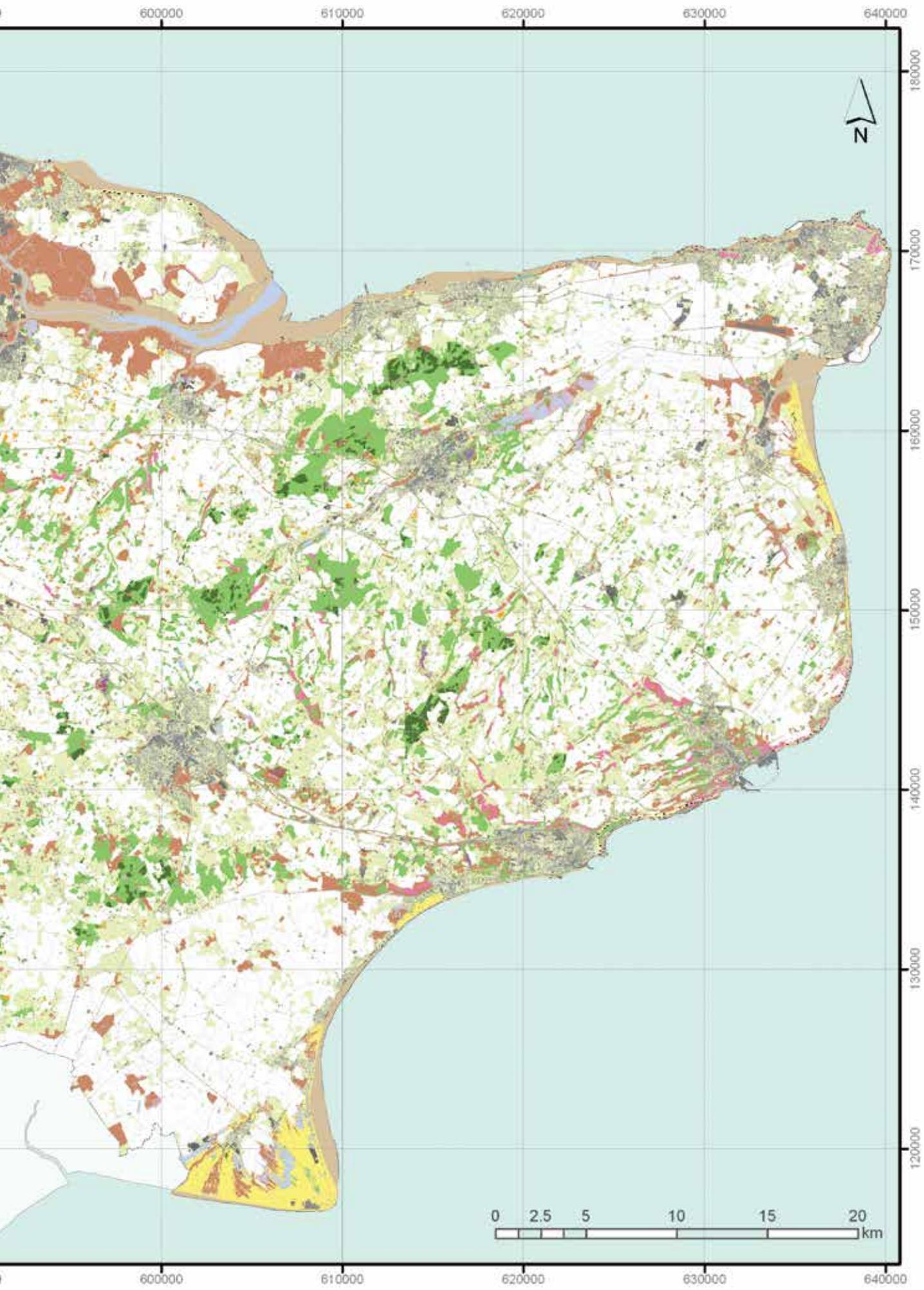
ARCH Kent Habitat Survey 2012

In 2009 on behalf of the Kent Biodiversity Partnership, Kent County Council and the Conseil Regional of Nord-Pas de Calais were awarded Interreg 2 Seas funding to establish the ARCH project. The background and detail of this project are described in the Project Final Report to be published shortly.

Several separate but related activities formed the basis of the project, with the Kent Habitat Survey forming a major part of the work in Kent.

3 Phase 1 survey is a rapid field survey technique that records natural and semi-natural habitats together with other features within the survey landscape.







Aims and outcomes

The main aims of the ARCH Kent Habitat Survey were:

- to update the data on the natural habitats of Kent, through a comprehensive study of Kent's countryside and coastline
- to contribute data for a joint map of natural and semi-natural habitats of both Kent and Nord-Pas de Calais
- to identify areas of importance for wildlife
- to identify habitat change over time

The current survey

Work towards the survey began in February 2010, with the establishment of the ARCH Kent Habitat Survey Team within the Flood Risk and Natural Environments Team at Kent County Council. This team included the survey manager, a mapping and GIS expert supported by a GIS technician, an officer responsible for API, and field survey ecologists.

The current survey has focussed on providing an update of the 2003 data in the framework of an OS digital mapping system. Following on from the 2003 survey, this survey again uses the IHS classification system, but with further refinement of the classes, providing greater detail for some habitats. Additional information on coastal and floodplain areas, obtained by the Environment Agency from surveys in 2006 and 2009, was incorporated in the current survey data in order to assist with the habitat coverage across the county. Because of this, the current survey did not routinely investigate the coastal and marine areas of Kent. Data from other sources were used to inform the survey, including Natural England, Kent Wildlife Trust, the Peoples Trust for Endangered Species (PTES) and the Forestry Commission.

The full methodology for the survey is described in the Final Report.

As well as updating the general data, this survey aimed to improve the information available on the following:

- BAP Priority habitats that were not present in 2003 – these are newer priority habitats that were added in 2007, and so were not described fully in the previous survey, for example, traditional orchards and wood pasture and parkland
- Semi-improved grasslands, not species-rich – these were under-recorded in the previous survey, as described above
- Identification of new areas that had potential to be designated as Local Wildlife Sites by the Kent Biodiversity Partnership

The data will be used in several tools, for planners and ecologists, which have been developed as part of the overall ARCH project. These include a Planning Screening tool, to establish whether planning applications require further ecological investigation, and a Connectivity tool, to examine habitat fragmentation and potential for restoration. An online web mapping tool on the ARCH website (www.archnature.eu) gives access to the habitat data and enables queries by location or by habitat.

Key Findings from the survey

The administrative area of Kent is 379,111 ha, and the area of Kent's habitats to the mean low water mark 391,823ha.

The survey covered the entire county, analysing aerial photographs and previous survey data, and using targeted field survey to produce an up-to-date map of all habitats in Kent.

The area field surveyed by the ARCH project was 29,813ha, or nearly 8% of Kent, and covered almost one third (28%) of the semi-natural habitats in the county.

The built environment and transport infrastructure together cover 7.5% of Kent while gardens cover another 6.7%. When combined with other urban open green spaces, such as amenity grasslands, sports fields, school playing fields and



urban road verges, the total area for built and urban habitats is 60,607ha or 16% of the County.

The largest single habitat class is Arable and Horticulture, covering 137,227ha or 35% of the county, followed by Improved (intensively managed) Grassland with 116,319ha and 30% cover.

Kent's natural and semi-natural habitats together cover 106,251ha or 27% of the county.

The largest semi-natural habitat is that of broadleaved, mixed and yew woodland, covering 44,490ha or just over 11% of the county.

Kent has 1,676ha of traditional orchards, which includes un-intensively managed fruit orchards and traditional cobnut platts. These habitats are around 10% of the traditional orchard priority habitat for England.

Heathland is one of the county's most rare and fragmented habitats. Around 74ha was recorded in total from seven main sites across the county and a further 19 smaller areas, which is an increase on the 52ha recorded in 2003. Several important areas of restoration have been noted during the survey, particularly around Tunbridge Wells, near Sevenoaks, Hothfield Common near Ashford and the Blean woodland near Canterbury.

Larger amounts of the heathland resource are found in Tunbridge Wells (36% of the county resource), with Tonbridge and Malling and Canterbury also supporting significant amounts (22% and 18% respectively).

A third of the county's heathland habitats are within the High Weald Area of Outstanding Natural Beauty (AONB).

Almost two-fifths of the county is covered by grassland (38%), but this includes large areas of improved grassland with low natural heritage value.

Semi-natural grasslands, that have higher or the highest natural heritage value, make up more than a quarter (26%) of the entire semi-natural habitat resource within Kent.

Kent supports around 5% of UK chalk grasslands. The survey recorded nearly 2000ha of this important habitat, with just over half being of the highest quality, meeting the standard required for UKBAP priority habitat and EU Annex 1⁴ designations (1,159ha). A further 770ha was recorded as semi-improved chalk grassland, which could respond to restoration management to increase its biodiversity importance.

Around 80% of Kent's calcareous grassland resource is within the Kent Downs AONB.

Dover has the greatest proportion of chalk grassland (25% of the county resource, with Maidstone and Shepway also having significant amounts of this valuable habitat (14% and 17% respectively).

Kent has a very small resource of lowland meadow, with just over 5ha of UKBAP and EU Annex 1 lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*). This survey has produced the first records for this habitat type in Kent. A further 19ha of lowland meadow and pasture is also UKBAP priority habitat (*Cynosurus cristatus* - *Centaurea nigra* grassland). The survey has recorded around 1632ha (0.4% of Kent) of species-rich semi-improved neutral grassland, which, although not UKBAP priority habitat, has significant biodiversity value. With appropriate management, some of this could be restored to UKBAP quality habitat.

Acid grassland is another grassland habitat that is poorly represented in Kent. Only 253.5ha of UKBAP priority habitat is found on gravel or acid soils, a decrease of around 40% of that recorded in 1990. The county has a further 249ha of semi-improved acid grassland.

4 Annex 1 habitats are those described in the Habitats Directive (1992; Conservation of Habitats and Species Regulations 2010) as being of European importance for nature conservation and given special protection.



Sevenoaks District has the highest proportion of acid grassland (36% of the county resource), followed by Tunbridge Wells (15%) and Tonbridge and Malling (12%).

The county contains nationally and internationally important habitats around its coastline. About 35% of the UK's Coastal Chalk occurs in this region.

The county has around half of the UK recorded vegetated shingle resource, which is of international importance. 40% (2560ha) of the UK resource is at Dungeness.

Most of the county's resource of supralittoral sediment, in the form of vegetated shingle, is within Shepway (80% of the county resource).

Each District has a distribution of habitats that relates to its location within Kent and the underlying geology, with eastern Districts having the greatest proportion of coastal rock habitats. Thanet has the largest area of littoral rock (283ha, or 39% of the county resource) found between mean high and low water marks, while Dover and Swale have the greatest proportions of supralittoral rock (cliffs) at 39% and 32% of the resource respectively. The vertical nature of the cliffs in Thanet means that this resource is under-recorded by the survey.

The largest amount of littoral sediment is in Medway, where the estuarine mudflats and saltmarshes of the Medway and Greater Thames Estuary cover around 4867ha, or 41% of the county resource. Swale has a further 3885ha, or 32% of the county's littoral sediment.

Kent has many areas designated for their national or county importance for natural heritage. There are 105 Sites of Special Scientific Interest (SSSIs), a statutory designation of national importance, and these cover 33,308ha or 8.5% of Kent. Local Wildlife Sites (LWS) are of county importance, and Kent has 455 sites covering 27,197ha or almost 7% of the county.

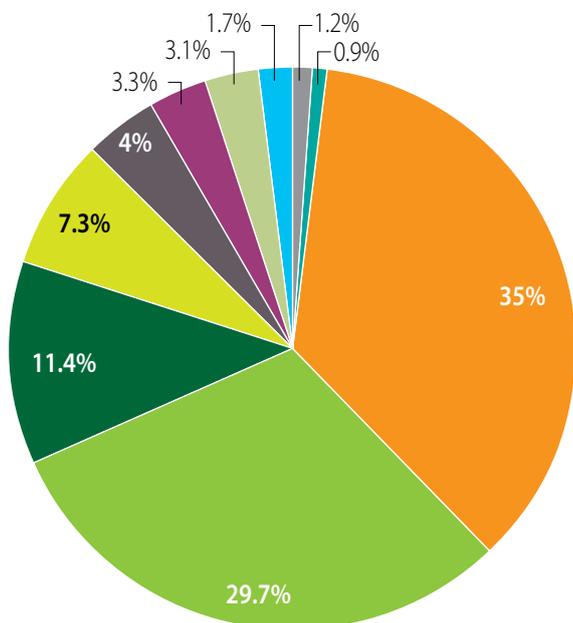
Kent has two Areas of Outstanding Natural Beauty (AONB)—the Kent Downs and the High Weald AONBs. Together they cover around a third of the county (32%) and contain a third of the county's semi-natural habitats.

There are 28 UK Biodiversity Action Plan (UKBAP) priority habitats in Kent, which together cover 26,462ha or 7% of the county.

On a landscape scale, Biodiversity Opportunity Areas (BOAs)⁵ have been identified to enable appropriate land management and restoration. These look at habitats linked at a landscape scale and include all broad habitat types. In total, they cover 174,291ha or 44% of the county area. Within this total, there are 81,211ha of semi-natural habitats representing 68% of the county's semi-natural resource.



Top Ten Broad Habitats in Kent as % of the County



- Arable and horticulture 35%
- Improved grassland 29.7%
- Broadleaved, mixed, and yew woodland 11.4%
- Neutral grassland 7.3%
- Built-up areas 4%
- Boundary and linear features 3.3%
- Littoral Sediment 3.1%
- Rivers and streams 1.7%
- Standing open water and canals 1.2%
- Coniferous woodland 0.9%

Land Cover Analysis

The land cover analysis is another way of classifying the land surface of Kent. It is derived from the Kent Habitat Survey data and takes a broad look at the nature of the land surface and land management practices.

The dataset is made up of a coarse grid of 100x100m cells, where the centre point of each cell reflects the habitat. A much simplified classification distinguishes 11 land cover categories, further grouped into 6 broad categories.

This grid data format allows direct comparison with older land cover data using similar classifications. Change analysis covers the years 1961, 1990, 1999 and the current dataset of 2008. Dates refer to the date of the source aerial photography.

The Land Cover Change report presents maps, tables and graphs for each category with overall information for Districts and the Medway Unitary Authority.

KEY FINDINGS OF THE LAND COVER ANALYSIS

- The extent of land devoted to arable and grassland has declined very little, covering 60.4% of the county in 2008, a decline of slightly less than 2% since 1990, and a gain of 1% from 1961
- Orchards and hops have suffered the most dramatic decline, with more than two thirds of the county's resource in 1961 being lost by 2008
- Land covered by development has increased from 10.7% in 1961 and 14.4% in 1990 to 17.3% in 2008, an increase of around 62% of the original resource

⁵ The BOAs indicate where the delivery of Kent BAP targets should be focused in order to secure the maximum biodiversity benefits. They show where the greatest gains can be made from habitat enhancement, restoration and recreation, as these areas offer the best opportunities for establishing large habitat areas and /or networks or wildlife habitats.



Acknowledgements

The ARCH Team would like to thank all those who played part in creating, supporting, managing and working on the Kent Habitat Survey 2012.

Thanks are due to our partners the Conseil Regional of Nord-Pas de Calais, the Conservatoire botanique national de Bailleul, as well as the Kent Biodiversity Partnership, the Kent Wildlife Trust and the Kent and Medway Biological Records Centre. Particular thanks are due to the Environment Agency for financial support and provision of data. Thanks also to the Unitary Authority of Medway, and Canterbury, Maidstone, Swale, Tonbridge and Malling and Tunbridge Wells District Councils for financial support. Additional assistance and information came from the Peoples' Trust for Endangered Species, the RSPB and the High Weald AONB.

We would like to thank all land owners and organisations who gave permission for field survey work on their land.

Lastly, we wish to thank Kent County Council for part-funding and hosting the project. This has been a partly-funded 2-Seas Interreg IV A and KCC Project.

Photo credits: The ARCH Team

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