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Our natural environment

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Landscape character

National Character Areas (NCAs) are areas that represent a distinct and recognisable landscape character across England. NCAs provide a useful starting point to describe the landscape as they influence where different habitats and land management can be supported.

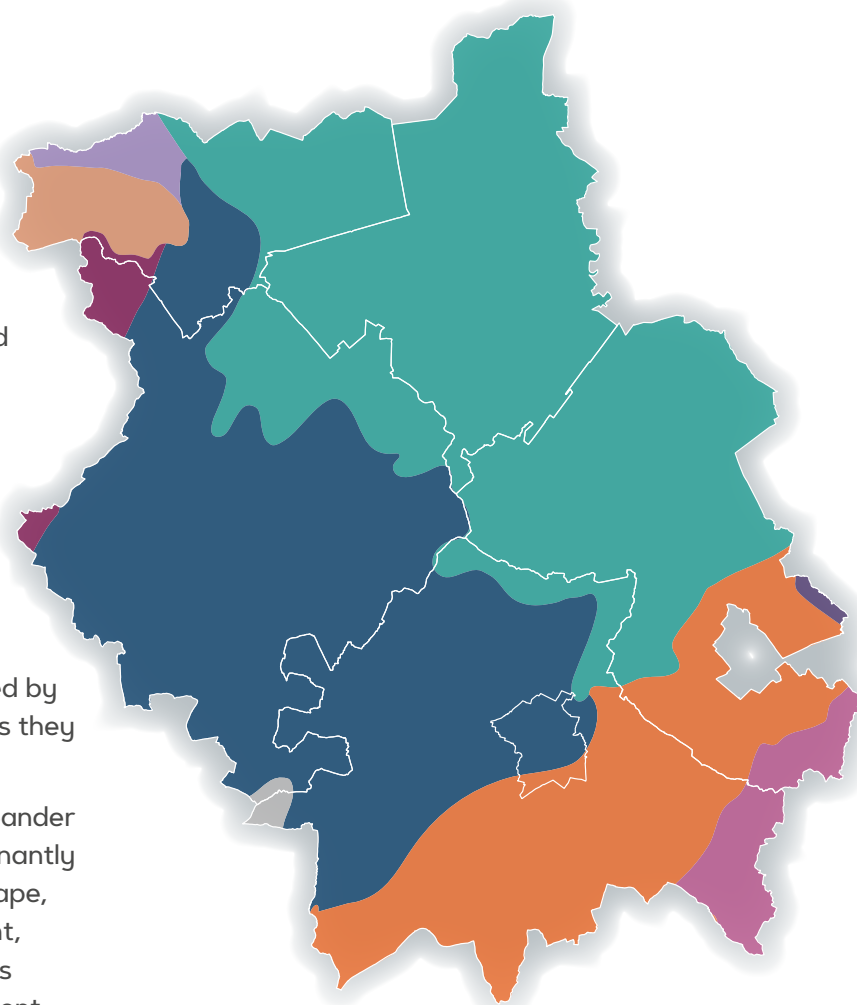
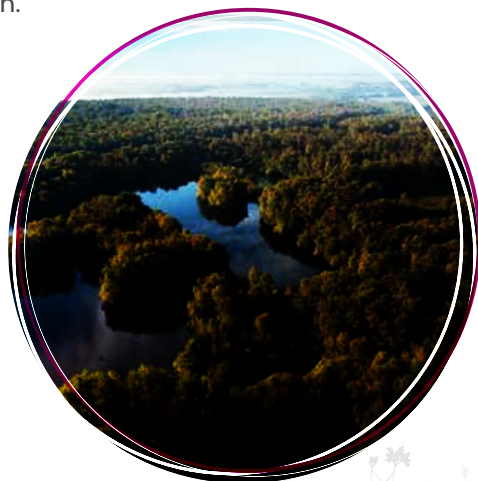
There are three main NCAs that cover Cambridgeshire and Peterborough as shown here.

In the west, the Bedfordshire and Cambridgeshire Claylands are a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach the Fens in the east.

The river Great Ouse and its tributaries meander across the landscape. While this is predominantly an arable and commercially farmed landscape, a wide diversity of habitats are also present, including: Grafham Water SSSI, noted for its wintering birds and passage migrants; ancient woodland at Monks Wood National Nature Reserve noted nationally for its rich insect fauna; and flood meadows at Portholme SSSI which are still traditionally managed as per the historic common 'lammas' system¹⁶.

The East Anglian Chalk covers a large swathe of the south of the county. It is characterised by rolling chalk hills with large regular fields enclosed by low hawthorn hedges, few trees, straight roads and expansive views to the north.

The chalklands are crossed by internationally important **chalk streams** in the gentle valleys of the rivers Granta and Rhee which converge to form the Cam just south of Cambridge. Large-scale cereal production dominates, with small fragments of botanically rich grasslands such as those found at Gog Magog Golf Club SSSI, and Devil's Dyke SSSI¹⁷.



- | | |
|---|--|
|  Bedfordshire and Cambridgeshire Claylands |  Rockingham Forest |
|  Bedfordshire Greensand Ridge |  South Suffolk and North Essex Clayland |
|  East Anglian Chalk |  The Brecks |
|  Kesteven Uplands |  The Fens |
|  Northamptonshire Vales | |

Source: Natural Capital Solutions (2024)

Did you know?

National Character Areas – 159 Character Areas have been established by Natural England, covering the entirety of England.

Each area represents a distinct and recognisable region based on landscape features rather than county or district boundaries.

In the north and east, the Fens form a distinctive, historic and human-influenced arable landscape. It is a large, low-lying, predominantly flat landscape with an intricate network of drainage ditches, dykes and rivers that drain towards the Wash.

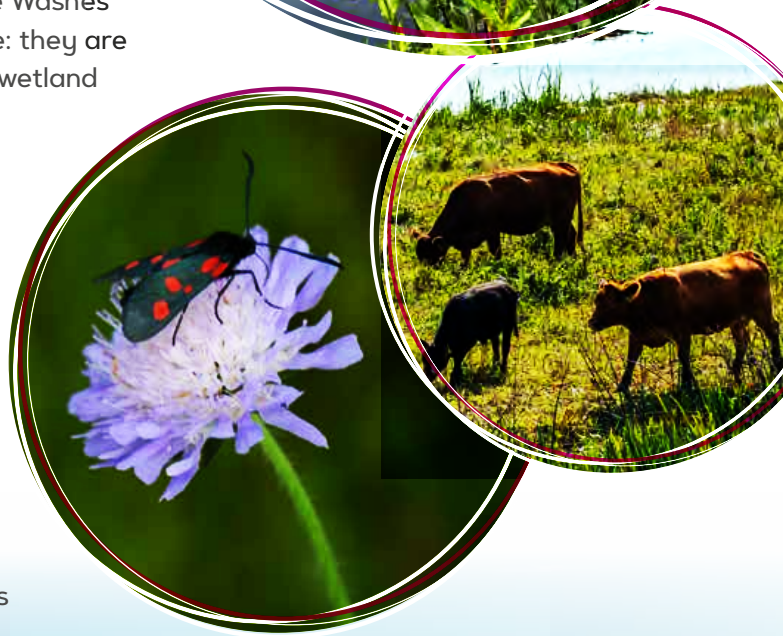
Much of the land is at or below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its use for agriculture.

Public survey feedback

'I love having green spaces on the doorstep; being able to experience nature is vital to good mental health'
East Cambridgeshire resident

Two major rivers in Cambridgeshire drain into the Wash: the Great Ouse and the Nene. Both now have artificial canalised courses that run straight for long distances and are bounded by high banks to contain the watercourse from the lower adjacent fields and settlements. The associated Ouse and Nene Washes are both highly designated reflecting their importance: they are listed as **Ramsar** sites of international importance as wetland habitats, as **Special Protection Areas (SPA)**, **Special Areas of Conservation (SAC)** and **Sites of Special Scientific Interest (SSSI)**. They are particularly noted for the large numbers of wildfowl and waders that they support¹⁸.

Toward the borders of Cambridgeshire and Peterborough lie small parcels of neighbouring NCAs which contribute to the mosaic of habitats and to cross-boundary connectivity with the wider nature network. These include the Lincolnshire and Rutland Limestone and Rockingham Forest in the north-west, the Bedfordshire Greensand Ridge in the south-west, and the East Anglian Plain and Brecklands in the south-east.



Protected sites

Internationally important nature sites

The area has eight internationally important European designated nature sites which are either Ramsar sites, Special Area of Conservation (SAC) or Special Protection Areas (SPA).



Ouse Washes Ramsar, SAC, SPA (338 hectares, 2499 hectares)

- designated for its internationally important numbers of breeding and wintering waders and waterbirds, and in particular breeding Black-tailed Godwit, Snipe, Ruff, Shoveler, Gadwall and wintering Whooper Swan, Bewick's Swan and Wigeon.
- designated for its population of Spined Loach.



Nene Washes Ramsar SAC, SPA (88 hectares, 1520 hectares)

- designated for its internationally important numbers of breeding and wintering waders and waterbirds, in particular breeding Black-tailed Godwit, Shoveler, Garganey, Gadwall and wintering Bewick's Swan, Wigeon, Teal, Shoveler, Pintail and Gadwall.
- designated for its population of Spined Loach.



Fenland SAC (619 hectares)

- designated for calcareous and other fen types, with Spined Loach and Great Crested Newt also as qualifying features.
- includes Wicken Fen, Woodwalton Fen and Chippenham Fen national nature reserves.
- supports a wide range of nationally and locally rare species.



Orton Pits SAC (141 hectares)

- designated for the largest known breeding population of Great Crested Newts.
- designated for its nutrient-poor water bodies supporting populations of stoneworts, including the main UK population of Bearded Stonewort.



Portholme SAC (91 hectares)

- designated as the largest lowland hay meadow in the UK.



Devil's Dyke SAC (8 hectares)

- designated for its orchid rich calcareous grassland.



Barnack Hills and Holes SAC (23 hectares)

- designated for its orchid rich calcareous grassland.



Eversden and Wimpole Woods SAC (66 hectares)

- designated for its Barbastelle bats maternity colony, feeding area and foraging flight paths.



Nationally designated sites

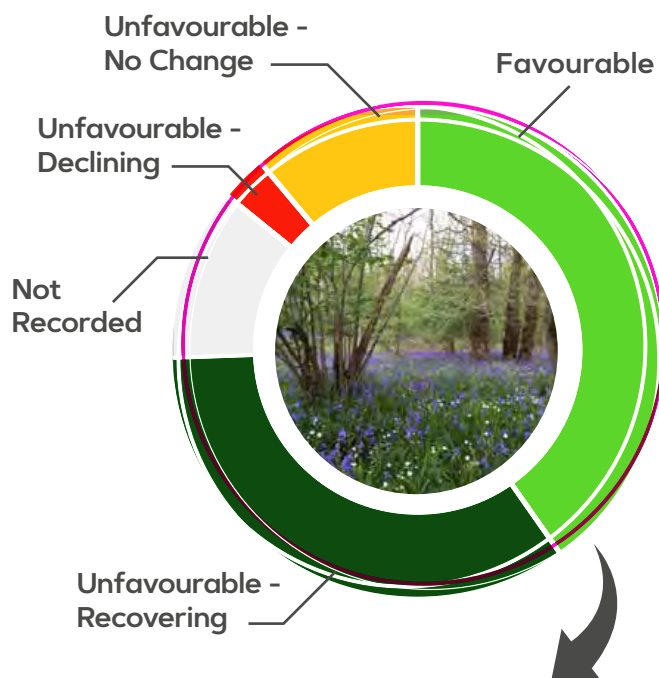
Sites of Special Scientific Interest (SSSIs) are our most valuable sites for nature and include the international sites listed above. They cover the full range of habitats from ancient woodlands, species-rich grasslands, fens, lakes and wetlands and geological sites. They cover 8,800 Hectares, approximately 2.6% of our area.

Our largest sites outside the international sites are:

- Bedford Purlieu (214 hectares).
- Brampton Wood (132 hectares).
- Cam Washes (166 hectares).
- Castor Hanglands (89 hectares).
- Grafham Water (806 hectares).
- Holme Fen (269 hectares).
- Little Paxton Pits (127 hectares).
- Monks Wood (169 hectares).

A summary of the condition of SSSIs across Cambridgeshire and Peterborough is shown here:

		Sites
Total Number	→	99
Total Area (ha)	→	8,808.45
Number of features	→	237



	Favourable	Unfavourable - Recovering	Unfavourable - No change	Unfavourable - Declining	Not recorded
Number of features	96	81	27	7	26
Percentage	40.51%	34.18%	11.39%	2.95%	10.97%

% features meeting 'favourable or unfavourable recovering': 74.68%



Local Nature Reserves and Local Wildlife Sites

There are over 500 local wildlife sites and 34 local nature reserves in Cambridgeshire and Peterborough. These cover approximately 2.8% of the land area.

In 2024 only 41.4% of sites in Cambridgeshire were in positive management. The figures varied considerably with from Cambridge with 62.5% of sites in positive management to the rural districts of East Cambridgeshire, Fenland and Huntingdonshire with between 32-36% of sites in positive management.



Peterborough however had a much higher proportion of sites in positive management at 78.6%, reflecting the greater effort put into assessing sites and providing information and support to landowners through a partnership between Peterborough City Council and the Wildlife Trust Bedfordshire, Cambridgeshire and Northamptonshire.

Priority habitats

Trees and woodland

Cambridgeshire and Peterborough have approximately 16,300 Ha of woodland which equates to 4.8% of the land area. This is one of the lowest proportions of woodland cover in England. However, since the middle of the 20th century there has been an 85% increase in woodland cover.

The total area of ancient woodland is however only 2,886 hectares (0.8% of the area). This includes 1,876 hectares of semi-natural ancient woodland and 992 hectares of planted ancient



woodland sites (with most of the planting in the 20th century post-World War Two).

There are five main clusters of ancient woodlands:

- **west of Peterborough** including Bedford Purlieu and Castor Hanglands.
- **along the fen-edge** including Monks Wood and Aversley Wood.
- **In a ring around Grafham Water** including Brampton Wood, Perry Wood and Little Paxton Wood.
- **west of Cambridge** including Hayley Wood, Gamlingay Wood, Waresley and Gransden Woods, Eversden Wood and Kingston Wood.
- **In the south-east of Cambridgeshire** including Out and Plunder Woods, Lower Wood and Langley Wood.



Ash woodlands are the dominant type reflecting the chalky boulder clay soils on which most semi-natural woodlands are found. These include woods in the south-east and south-west of the county with Oxlip, a species restricted to parts of Cambridgeshire, Suffolk and Essex. However, with the advent of Ash dieback, the future for our ash woods is highly uncertain. While the areas will remain wooded, tree cover will reduce significantly in the short-term with significant changes to tree species composition likely in the future.

Did you know?

Cambridgeshire and Peterborough have approximately 16,300 Ha of woodland which equates to 4.8% of the land area



Huntingdonshire and Cambridgeshire were renowned for their Elm woods and large field boundary Elm trees prior to the ravages of Dutch Elm Disease from the 1970s onwards. However, there are several surviving Smooth-leaved Elm woods which are nationally significant. There are also a few historic parklands with veteran **pollarded** Elm trees. Elms also form a substantial proportion of hedgerow trees in the county, and green lanes and fenland **droves** lined by elms are a unique feature of parts of the county. Elms are host to a suite of **invertebrates** which have become restricted with the decline in elm abundance.

Veteran willow pollards alongside rivers and floodplains, particularly in the Fens and along our river valley, provide unique features vital for biodiversity.

Cambridgeshire is also known for its traditional orchards, with examples concentrated on the fen edge of South Cambridgeshire, in south Huntingdonshire, and particularly west and north-east of Wisbech.

Grasslands and other open habitats

The Great Ouse Valley is renowned for its lowland flood meadows between St Neots and Earith. Port Holme is the largest lowland flood meadow in England. Other examples include St Neots Common, the Hemingford Meadows and Houghton Meadows. These flower-rich habitats support nationally scarce and threatened species such as Narrow-leaved Water Dropwort. Species-rich examples are also known to store high levels of soil carbon.



Chalk downlands once occurred extensively across the chalk in the south of Cambridgeshire from Royston to Newmarket. They are the most flower-rich habitats in England and can support up to 40 plant species per square metre. However, the flat and rolling terrain has resulted in most of the area becoming arable farmland and chalk grasslands are now restricted to relatively small areas including ancient monuments (Devil's Dyke, Fleam Dyke, Roman Road), parish chalk pits and road verges. There are more extensive chalk grasslands around Newmarket on the gallops used for racehorse training, but their management restricts their species richness and habitat quality.

There is a suite of species-rich limestone grasslands west of Peterborough including Barnack Hills and Holes National Nature Reserve and various sites around Southorpe. These support species such as Pasqueflower and Man Orchid.

Lowland meadows are scattered throughout the claylands, but most remaining examples are small, isolated sites and they are often suffering from under management or used for pony grazing and over-grazed.

In the far east of the county, on the Breckland edge there are a few sites supporting acid, sandy grasslands, usually former sand and gravel quarries. These support a specialised suite of plant and **invertebrate** species associated with bare ground and disturbed conditions. These species also occur in some of the sand and gravel pits in the Fens.



Wetlands

With the drainage of the Fens basin and conversion of the largest wetland in England to farmland from the 17th century onwards, only four remnant fen sites survived at Wicken Fen, Woodwalton Fen, Holme Fen and Chippenham Fen. These fens, fen meadows and other wetlands are the most species-rich habitats in Cambridgeshire supporting a rich array of fen plants and wetland **invertebrates** including large numbers of threatened, rare and scarce species. More species have been recorded from Wicken Fen than any other site in Britain.

Did you know?

Although the current network and mechanism for the drainage of the Fens basin were constructed from the 17th Century onwards, many of the channels date from Roman and medieval times

In spite of the drainage of the Fens, some drainage ditches remain rich in relic fen plant and **invertebrate** species, particularly where the water quality is good. This usually arises where the water sources come from underlying peat, sand, gravel or chalk geology. These drains provide potential stepping stones and refuges for these relic fen species away from the main fen sites. However, most of the drainage ditch network suffers from poor water quality and high nutrient levels, limiting plant and invertebrate species richness.

The inter-connected network of drainage ditches, particularly

the Internal Drainage Board drains support a nationally significant population of Water Voles, as water quality is less of a constraint to this species.

The large washlands through the Fens at the Ouse Washes and Nene Washes are an integral part of the drainage system and support extensive areas of wet grassland and other floodplain wetland mosaic habitats. These in turn support internationally important numbers of wetland birds and the ditch networks support a suite of fen aquatic plants and **invertebrates**.

Elsewhere in the County, other fen and fen meadow sites are associated with chalk springs and streams in the south of the county, such as Shepreth L-Moor, and limestone to the west of Peterborough, such as Sutton Heath and Bog, and Whitewater Valley.

These are generally small, with neighbouring land uses and water abstraction putting added pressure on the species for which they are noted.

Parts of the chalk landscape hold concentrations of temporary pools on bare chalk which support specialist species such as Grass-poly and Fairy Shrimp.

Chalk streams are internationally important with England supporting 85% of the world's resource of this habitat. In Cambridgeshire they mainly occur in the Upper Cam Catchment and include the tributaries of the Rhee (Mill River, Mel, Shep and Hoffer Brook), the River Granta, Hobson's Brook and Cherry Hinton Brook. The Wilbraham River flows to the lower Cam as do the lodes through the South Level, which although man-made are fed by water from the underlying chalk aquifer. In the east the River Snail is a **chalk stream** before it joins the Soham Lode.

All of our **chalk streams** have been significantly changed by past river engineering and drainage works as well as other modifications to create mill races or ornamental lakes. However, they still support populations of species including Brown Trout, Brook Lamprey, Water-Crowfoots and **chalk stream invertebrates** such as mayflies and stoneflies.



Major river restoration work is required to return our local **chalk streams** to a more natural character, but this will also depend on reduced water abstraction from the underlying aquifer to restore more natural flow levels.

Our other rivers and their tributaries have been significantly changed for navigation, drainage or both. They have often been straightened, over-deepened and widened, with a disconnect between the river and floodplain. Although the rivers are often degraded, high quality habitats survive within the backwaters and on the floodplains of the larger rivers.

Cambridgeshire and Peterborough contain several habitats with types of species that are rare or absent elsewhere in Britain (and Europe).

These are listed below:

Nationally rare habitats which are unusually well represented in the county

- fens
- fen meadows
- fen ditches
- chalk streams
- seasonally flooded chalky pools (grass-poly, fairy shrimp etc)
- flood meadows
- chalk downland
- smooth-leaved Elm woods
- oxlip woods
- parkland with veteran pollarded elms
- traditional Orchard
- fen droves with elms

Iconic, notable and important species

Mammals

Cambridgeshire contains an important population of Barbastelle Bats associated with the parkland

and ancient woodlands around Wimpole, with smaller populations in nearby woodlands.

The fens support a nationally important population of Water Voles, that has the potential to spread into many of the major rivers of middle England.

Birds

The washlands of the fens are home to the only regular breeding populations of Black-tailed Godwit in Britain, the most frequent site for breeding Ruff, and internationally important numbers of wetland birds visiting in winter, including Whooper Swan, Bewick's Swan, and Wigeon.

The creation of reedbeds at Ouse Fen post sand and gravel extraction will create over 700 hectares of reedbed and the local Bittern population is likely to grow to become nationally important.

Amphibians and reptiles

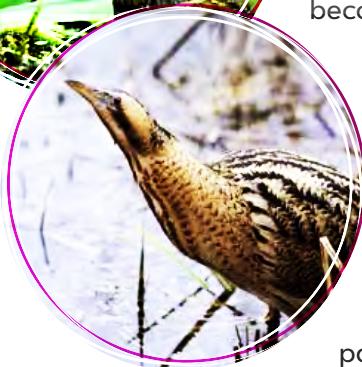
The largest known population of Great Crested Newts in the world is present at Orton Pits, south of Peterborough. The species is widespread through the claylands of the west and central southern parts of the area.

Fish

The fens support important populations of European Eel and Spined Loach.

Invertebrates

Despite the very small area of surviving habitats, the **Fens** is uniquely rich in wetland invertebrates, supporting around 10,000 species, over a quarter of British fauna. These include rare and threatened species in every habitat: European threatened species such as Desmoulin's Whorl-snail and Rosser's Sac-spider in sedge-beds, the only British populations of Twin-spot Longhorn Beetle in willow woodland, Tansy Beetle in fen



meadows (otherwise known from the Ouse Valley (near York), Reed Leopard Moth (here and in the Broads), and important populations of Norfolk Hawker Dragonfly, Large-mouthed Valve Snail and several rare water-beetles in fen ditches. The Great Ouse and New Bedford River are two of only three rivers where the rare Witham Orb Mussel has been recorded.

Cambridgeshire **woodlands** support insects which are rare elsewhere. Our elms host around 90% of the British population of White-spotted Pinion moth, in addition to the more widespread White-letter Hairstreak butterfly. Ancient woodlands have a very rich insect fauna, among the best-known of which is probably Black Hairstreak butterfly - around a quarter of the British populations of which occur in the county.

Cambridgeshire's grasslands support a diverse insect fauna, though the rarest and most threatened species, such as the metallic-blue seed-eating ground-beetle *Ophonus puncticollis*, are mainly associated with disturbed habitats on chalk.

Plants

Cambridgeshire holds significant numbers of Elm species, five of which are confined globally to the county. It represents one of the hotspots in the UK for both diversity and abundance of elms,

which support rare **invertebrates** and the elm-dependent lichen *Bellicidia imcompta*. Our ancient woodlands in the south-west and south-east of the county support species such as Oxlips that are otherwise found only in Suffolk, Essex and Norfolk.

Woodland edge habitats in Cambridgeshire hold around half the UK Crested Cow-wheat population.

Three fen plant species - Cambridge Milk-parsley, Fen Woodrush and Fen Ragwort are confined to Cambridgeshire, as is the fen subspecies of Heath Dog-violet. Several other wetland plants are extremely rare elsewhere, such as Fen Violet and Water Germander,

The unique brackish-water habitats of the Peterborough clay-pits are of European significance for their stonewort populations, including the stronghold for Bearded Stonewort in Britain.

Our chalk grasslands support species associated with a drier, more continental climate such as Moon Carrot and

Great Pignut, which are known from only two or three other counties. Orchid-rich grasslands were for decades the national stronghold of Lizard Orchid, currently expanding into new areas. Important populations of Pasque flower and Rare Spring-sedge still survive in the county, together with the only lowland population of Mountain-everlasting in England.

