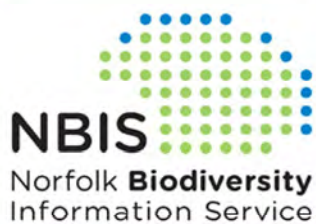


State of the Natural Environment in Norfolk



Norfolk County Council

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Norfolk Biodiversity Information Service
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Introduction

The natural environment is one of Norfolk's greatest assets. Its landscapes and wildlife draw in people from far afield, whilst its habitats and protected sites support fantastic species diversity. From the majestic north coast, to the rolling arable fields, from the lakes and ditches of the Broads to the forests of Breckland, there is something to discover in every corner of the county.

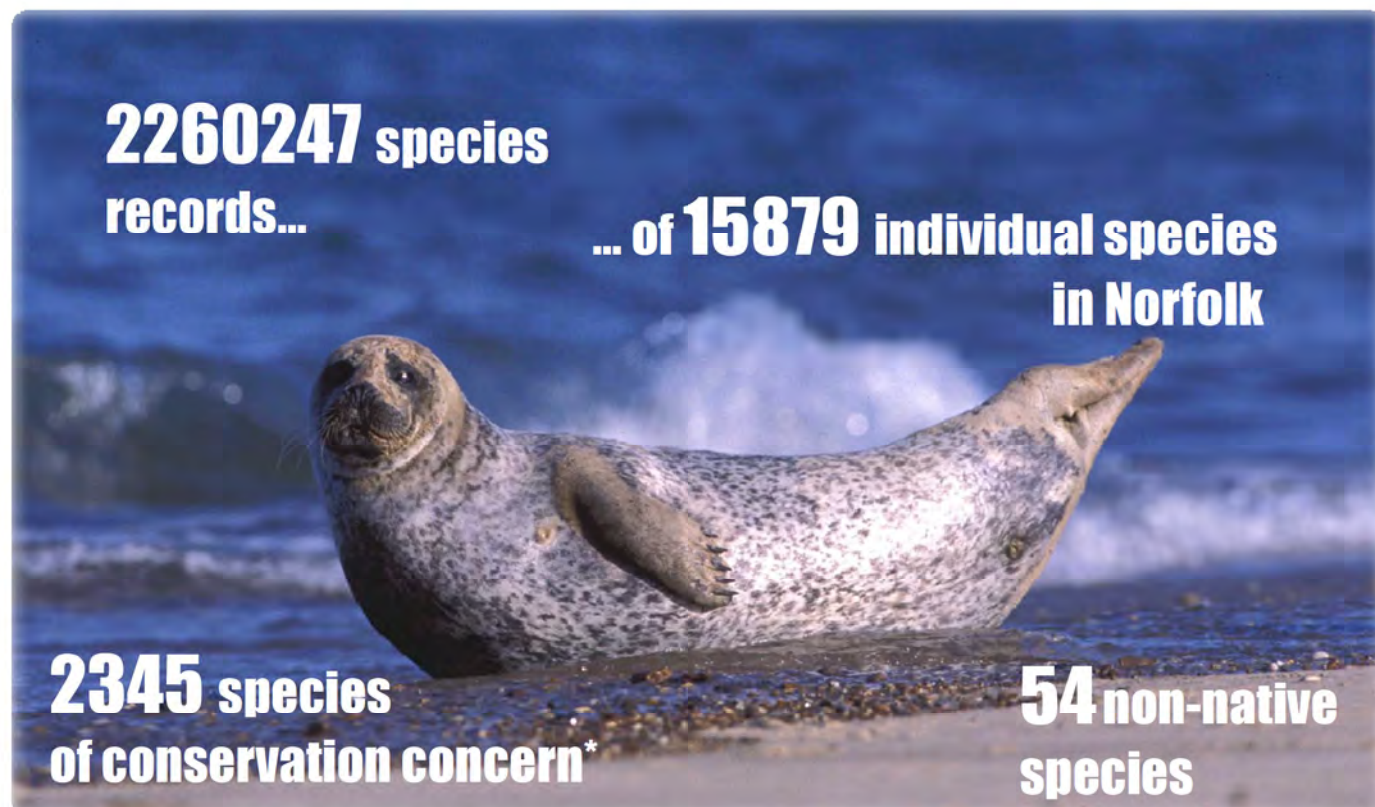
This report summarises the information held by Norfolk Biodiversity Information Service on species, habitats and protected sites within Norfolk.

This report is available for download from
www.nbis.org.uk



Peacock butterfly © Darren Oddy

Species in Norfolk



Common Seal © Graeme Cresswell

* Rare, threatened or protected species

Norfolk is blessed with a fabulous diversity of flora and fauna. Thanks to its position and its diverse range of habitats, over 15000 different species have been recorded in the county. The North Norfolk coast is a mecca for bird watchers, the Broads are a stronghold to the rare Norfolk Hawker dragonfly and Swallowtail butterfly, whilst the Brecks host a number of plant and invertebrate species unique to the area.

Figure 1 shows the number of species from each taxonomic group recorded in the county. A large number of invertebrate species have been recorded in

Norfolk, including flies, beetles and moths. There are also many species of vascular plants, fungi and lichen. Over 400 bird species have been recorded in Norfolk, thanks in part to the popularity of bird watching in the county - there is always someone with a pair of binoculars looking for something rare!

2345 of these species are classified as 'Species of Conservation Concern'. This means they are rare, threatened or protected by law. NBIS also holds 17083 records of 54 invasive non-native species.

How many species have been recorded in Norfolk?

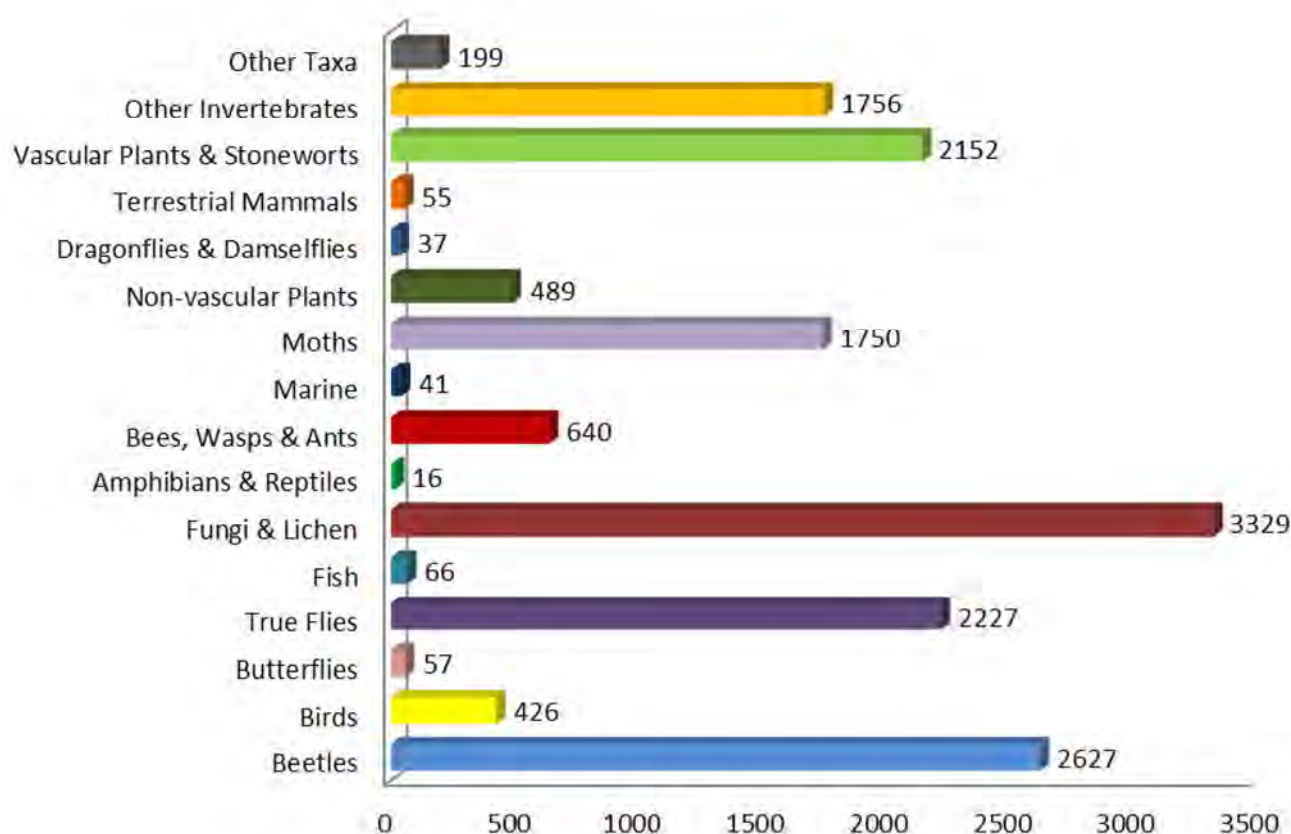


Figure 1. Species diversity in Norfolk, by taxonomic group (based on data held by NBIS, April 2015).



Barn owl © Peter Mallett



Mining bee ©



Hare © NCC



Butterfly © NCC

New Species for Norfolk 2014-15

Scarce Tortoiseshell

Added to the Norfolk list in mid July 2014 after individuals were recorded in Costessey, Burgh Castle and Wells. Usually ranging from Russia to China, the species has been spreading westwards into Eastern Europe. There was only a single British record of this species previously.

Fossombronia incurva © Sam Bosanquet



Weedy Frillwort

(*Fossombronia incurva*)

A new liverwort for Norfolk. Found at Winterton Dunes in September 2014 and grown to check its identification (ID only from ripe spores).

Gloeophyllum abietinum

A fungus spotted at Whitlingham during a Bioblitz in July 2014. This is only the 4th British record of this species

Two new moths

Stigmella magdalenae (Northern Rowan Pigmy) – new to Norfolk, leaf mines found at Holt Country Park in July 2014; *Oncocera semirubella* (Rosy-striped Knot-horn) – new for West Norfolk, Abbey Farm Fritcham, July 2014

Fungi new to science!

In 2000 specimens were collected from Cockley Cley and sent to Kew where it was decided that they were a variant of the rare Rayed Earthstar. However when samples were sent for DNA sequencing in 2014 they got a shock when they realised it was significantly different from that species. In 2015 the species was described under the new name of *Geastrum britannicum*.

The Cockley Cley specimen was designated the type specimen, with another from Surlingham designated a paratype. To date, specimens have been collected from near Abergavenney, Norfolk and Hampshire.



Geastrum britannicum © Jonathan Revett

Formica cunicularia

This first-for-Norfolk ant species was found nesting in St Mary's churchyard, Haddiscoe, by county recorder Doreen Wells. The identification was confirmed by the Bees, Wasps and Ants Recording Society (BWARS).

Andricus gemmeus

A gall found by county recorder Anne Hickley at Dinosaur Adventure (Lenwade) in August 2014. The sighting was double-checked with the gall society and confirmed as the first record for Norfolk.

SPECIES CASE STUDY: Grey Seals at Blakeney Point

For over a decade the number of seal pups born at Blakeney Point has been increasing year on year. The area is now famous for its breeding colony. From just 25 pups born in 2001, the seals have since thrived with a total of **2426 grey seal pups born over the winter of 2014-15**. This makes Blakeney Point the largest colony of the species in England, overtaking Lincolnshire's Donna Nook.

With lots of space and no natural predators, Blakeney Point is a perfect breeding site for grey seals and pup survival rates are high. For the safety of both seals and visitors, the western-most mile of the beach and dunes is fenced off during the breeding season.



Habitats in Norfolk 2014-15

What are these habitat types and why are they important?

Arable - Arable areas can sometimes seem boring and devoid of wildlife. However if they are well managed they support important species, some of which are found nowhere else. Vascular plants of arable land are some of the most threatened flora in the UK. A very large area of Norfolk is arable farmland so it is important that it is managed effectively for both food production and wildlife.

Coastal and Floodplain Grazing Marsh – Pasture or meadow that is periodically inundated. Ditches

maintain water levels and these are generally rich in invertebrates. Almost all areas are grazed or cut for hay and silage. The habitat is important for both breeding and wintering birds.



Arable margin © Martin Horlock

Coastal Saltmarsh – The vegetation on a saltmarsh is limited to a low number of salt-tolerant species which are adapted to regular immersion by the tides. They act as an important resource for wading birds and wildfowl, and provide sheltered nursery sites for several species of fish. Since medieval times, many saltmarshes have been converted into agricultural land.

27800 ha semi-improved grassland

17800 ha coastal and floodplain grazing marsh

1130 ha lowland heathland

Habitat Type	Area (hectares)	% of County Area
Arable	343209.81	62.7
Coastal & Floodplain - Grazing marsh	17847.83	3.3
Coastal Saltmarsh	4101.94	0.8
Coastal Sand Dunes	588.01	0.1
Coniferous Plantation	10091.88	1.8
Deciduous Woodland	31104.37	5.7
Fen, Marsh & Swamp	2263.8	0.4
Humid Dune Slacks	13.58	0.002
Lowland Heathland	1136.71	0.2
Semi-Improved Grassland	27849.3	5.1
Waterbodies	9289.8	1.7

Table 1. Areas of different habitat types in Norfolk and the % of the county they cover. These figures were determined from a habitat map of the county generated using remote sensing. The remaining area of the county is made up of improved grassland, scrub, bare ground and urban areas. Marine habitats were not included.

Coastal Sand Dunes – Develop where large amounts of sand are blown landwards from the coast, and can support a wide range of vegetation types. Dune systems are very rich in invertebrates including butterflies, moths and burrowing bees and wasps.

Coniferous Plantation – While coniferous woodlands tend to contain fewer species than deciduous woodlands, they can still be home to an array of birds, invertebrates and fungi. Good management of plantations to introduce a mosaic of habitats can increase biodiversity value.

Deciduous Woodland – Although deciduous woodlands vary in quality, the best examples are rich in biodiversity, both in tree species and ground flora, and also in associated invertebrate and bird diversity.



Norfolk sand dunes and woodland © Lizzy Oddy

Fen, marsh and swamp – This includes fen (peatlands which receive water and nutrients from ground water and surface run-off as well as rain), marsh (areas of waterlogged soil, including fen meadows and rush pasture on mineral soils and shallow peat) and swamp (areas of tall emergent vegetation such as reed bed). UK Fen habitats support a diversity of plant and animal communities – up to 550 species of higher plant, up to half of the UK's dragonfly species and several thousand other invertebrates. Reed beds are amongst the most important habitats for birds in the UK, including bittern, marsh harrier and bearded tit.

Humid Dune Slacks – Low lying areas within dune systems that are seasonally flooded and where nutrient levels are low. Designated an Annex I habitat, the UK has a significant proportion of the EU resource. In Norfolk it is found on the North Norfolk Coast and Winterton – Horsey Dunes where it presents an extreme of the geographical range and ecological variation of the habitat in the UK.

Lowland Heathland – Occurs on acidic low nutrient soils and is characterised by the presence of a range of dwarf shrubs such as heather and gorse. Heathland in Norfolk (and in the rest of the UK) has declined massively in the last few decades. It is an important



Grassland © Sarah Price

habitat for many rare invertebrates, including the silver-studded blue butterfly, and birds such as nightjar and woodlark.

Semi-Improved Grassland – These are grasslands which have been affected to some extent by artificial fertilizers, grazing, herbicides or drainage and are therefore lower in biodiversity than unimproved grassland. However they are still of conservation value and can contain a fairly wide range of wild flower species which are important for bees and other pollinators.

Waterbodies – This includes ponds, lakes, saline lagoons, rivers and drainage ditches. Particularly important water bodies in Norfolk include:

Saline lagoons – partially separated from the adjacent sea, these lagoons often contain invertebrates rarely found elsewhere. They are also important habitats for coastal birds.

Chalk Rivers – 85% of the world's chalk rivers are found in England, with a number of them in Norfolk. They are famed for their crystal

HABITAT CASE STUDY - Floodplain Grazing Marsh

Grazing marsh is defined as "periodically inundated pasture or meadow with ditches which maintain the water levels, containing standing or brackish water... Almost all areas are grazed and some are cut for silage or hay"*. The ditches within a grazing marsh are usually very rich in flora and invertebrates, and the habitat often supports important numbers of breeding birds such as snipe, lapwing and curlew, plus wintering migrants such as Bewick and whooper swans. There is lots of grazing marsh habitat within Norfolk, particularly to the east of the county. You can see grazing marsh along the River Yare to the south of Rockland Broad (Claxton, Langley, Limpenhoe, Hardley and Reedham). The Wherryman's Way long distance trail passes through grazing marsh in this area.



Floodplain grazing marsh © Scott Perkin

Source: jncc.defra.gov.uk/pdf/UKBAP_BAPHabitats-07-CoastFloodGrazingMarsh.pdf

clear waters and rich plant and invertebrate life.

Ponds – Often linked to agriculture, ponds can be oases of biodiversity

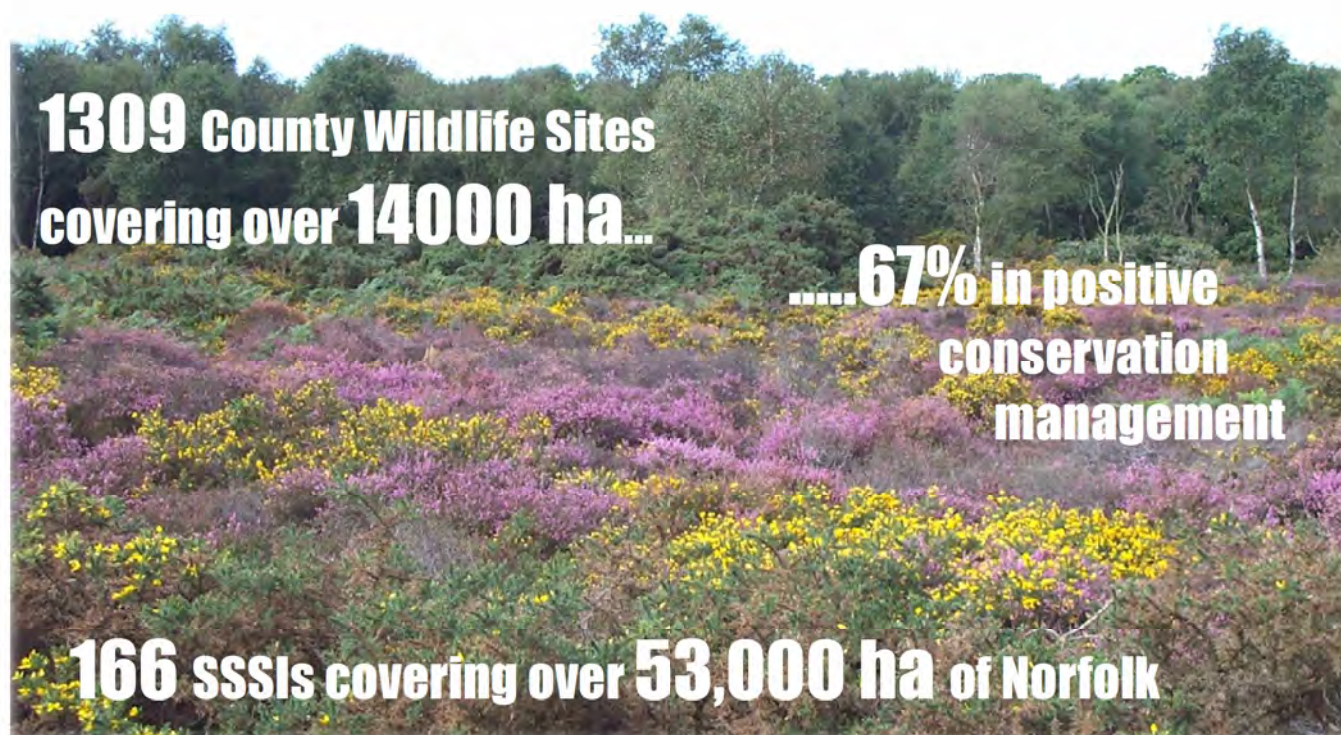


Pond © Carl Sayer

in an arable landscape. The pingos in the Brecks are a special type of Pond formed during the ice age. They often contain unusually high numbers of rare and scarce species.

Drainage ditches and lakes in the Broads – A unique habitat home to a number of rare and scarce species, such as the Norfolk Hawker dragonfly and Water Soldier.

Protected Sites in Norfolk



Heathland© Ed Stocker

Type	Number	Area (ha)	County Area (%)
Ramsar	8	22764.57	4.2
SAC	12	27311.8	5
SPA	8	46492.63	8.5
SSSI	166	53735.81	9.8
NNR	22	13749.05	2.5
LNR	28	928.72	0.2
CWS	1309	14816.48	2.7
RNR	111	-	-
CGS	5	-	-
Geodiversity site	370	-	-

Table 2. Number and area of each type of statutory and non-statutory designated sites and the percentage of the country that they cover.

You just need to look at the statistics to realise that Norfolk contains a wealth of sites notified or protected for their wildlife, geodiversity and landscape value.

Many of these sites are accessible to the general public and they provide a huge draw, bringing visitors and tourists to the county.

What do the designations mean?

Ramsar Sites - wetlands of international importance and designated under the Ramsar Convention. Many are also very important for birds and are therefore also designated as Special Protection Areas.

Special Areas of Conservation (SAC) - strictly protected under the EC Habitats Directive. Forming part of a European network (Natura 2000), these high quality sites make a significant contribution to conserving habitats and species considered most in need of protection at a European level.



Foxley Wood SSSI © Lizzy Oddy

Special Protection Areas (SPA) - form the other part of the Natura 2000 network and are designated due to their importance for birds, in accordance with the EC Birds Directive.



Breck meadow CWS © Steve Henson

Sites of Special Scientific Interest (SSSI) - the country's best sites for wildlife or geology. They have statutory protection under the Wildlife and Countryside Act 1981 as amended by the CROW Act 2000 and the NERC Act 2006. Many SSSIs are also international or European designated sites (Ramsar, SPA, SAC), National Nature Reserves or Local Nature Reserves. Identified and designated by Natural England.

National Nature Reserve (NNR) - chosen as the best of the SSSIs. In addition to managing rare and significant habitats, species and geology the majority of reserves are accessible and offer fantastic opportunities for people to get close to nature.

Local Nature Reserve (LNR) - designated for the benefit of both people and wildlife. Designated and controlled by Local Authorities in consultation with Natural England, LNRs are important for wildlife, geology, education and/or public enjoyment.

County Wildlife Sites (CWS) - sites considered to be important for wildlife in a county context. They aim to identify, protect and enhance the most important places for wildlife outside legally protected land. While they do not have statutory protection they are taken into account in planning decisions. Many County Wildlife Sites are privately owned and have no public access.



RNR marker © Norfolk County Council

Roadside Nature Reserves (RNR) - established to protect and promote those road verges in Norfolk containing rare and scarce plant species. Norfolk's road verges are often of special botanical significance and act as havens for wildlife as they are not sprayed or fertilised. Co-ordinated by Norfolk County Council, the RNR scheme brings the most important verges into appropriate conservation management.

County Wildlife Site Condition

NBIS reports back to central government on **Single Data List 160 -00** (formerly NI197) on the proportion of local sites in positive conservation management.

Figure 2 shows the latest results for 2013-14 (the results for 2014-15 should be available soon) by district and for the county as a whole.

Overall **67% of local sites** in Norfolk are in **positive conservation management**. This compares favourably to an average of 47% for the whole of England .

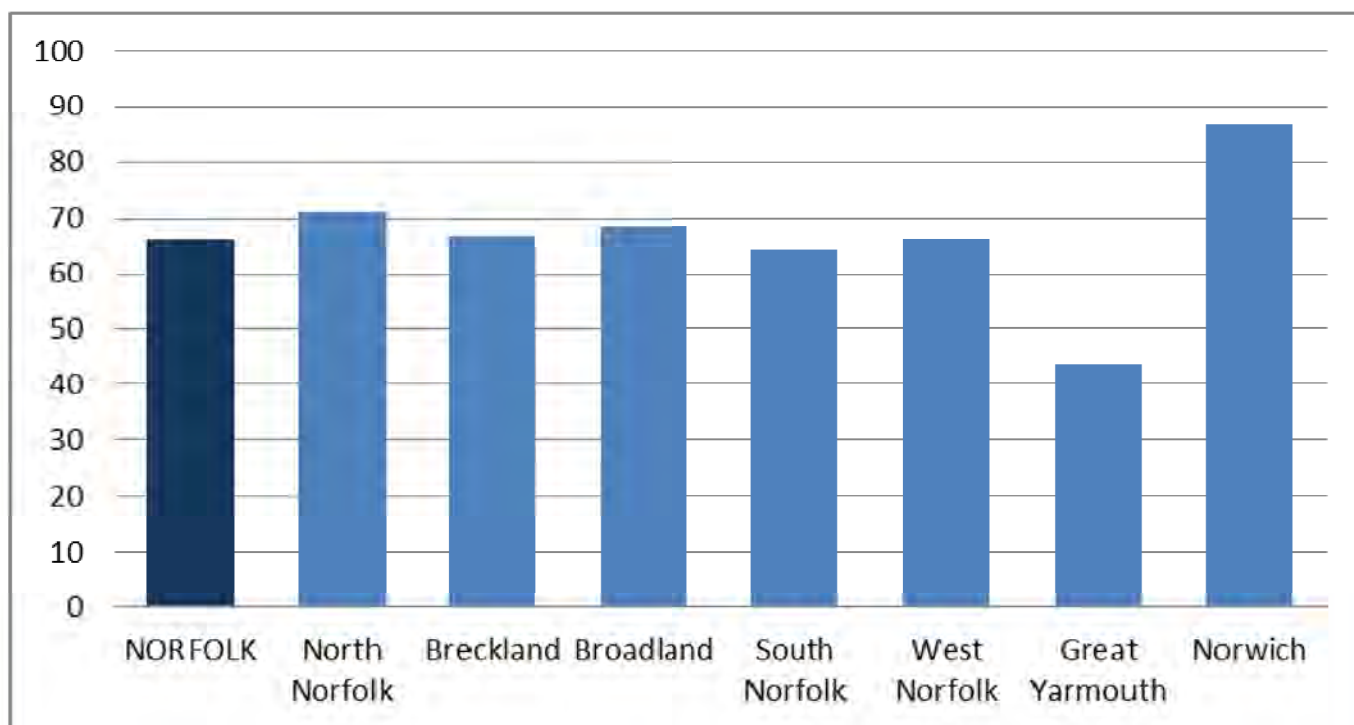
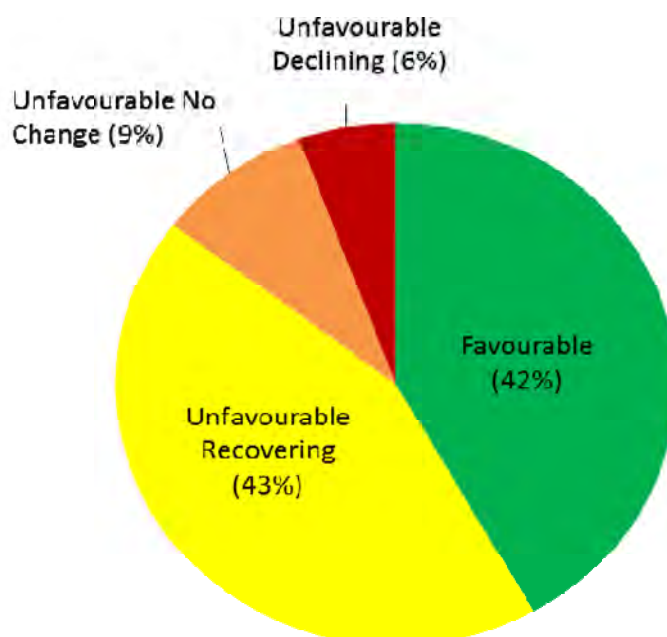


Figure 2. County Wildlife Sites (CWS by district in positive conservation management 2013-14.

SSSI Condition

Sites of Special Scientific Interest cover the largest percentage of Norfolk's area of the site designations. SSSIs are managed and reported on by Natural England, who regularly assess the state of each land parcel in each SSSI in the country. The categories they are assessed against are: Favourable, Unfavourable Recovering, Unfavourable No Change, Unfavourable Declining, Part Destroyed or Destroyed.

When a site is in favourable condition it is deemed to be meeting its conservation objectives. Figure 3 below shows the results of the latest SSSI monitoring for Norfolk.



PROTECTED SITE CASE STUDY:

Grimston Warren County Wildlife Site

This County Wildlife Site is adjacent to Roydon Common - a **heathland site** designated a **SSSI**, **NNR**, **SAC** and **Ramsar site**. It was previously a conifer plantation, but is now being restored to heathland by the Norfolk Wildlife Trust.

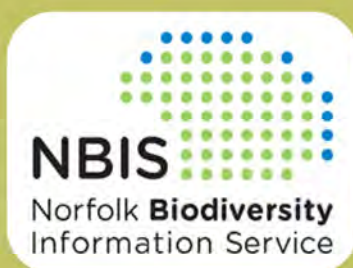
The site is made up of a mosaic of wet and dry heath, with fen, marsh, wet grassland and some open water. New ponds have been created in low lying areas of the acid grassland which dry out seasonally.

Cross-leaved heath and purple moor grass in the wetland area indicate the return of a wet heath community with rush pasture. A number of ditches and ponds have been enhanced, with bulbous rush and bog pondweed frequently found along the margins.

Two key bird species which have recolonized the open heathland since conifer removal are nightjar and woodlark.



Grimston Warren © Scott Perkin



Norfolk County Council