

# Norfolk State of the Natural Environment in Norfolk



Bluebell wood © Lizzy Oddy

**Report written by Lizzy Oddy, 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](http://www.nbis.org.uk)

# Species in Norfolk



Fly Agaric © Adele Southall

Norfolk is blessed with a fabulous diversity of flora and fauna. Thanks to its position and its diverse range of habitats, **around 16000** different species have been recorded in the county **since 1670**. **657** of these species were recorded between the **start of 2015** and **mid-March 2016** (the eventual total will be higher as there is often a delay between recording and those records being submitted to NBIS).

Figure 1 shows the **number of species from each taxonomic group** recorded in the county.

**2367** of these species are classified as **‘Species of Conservation Concern’**. This means they are rare, threatened or protected by law. NBIS also holds **18371** records of **55 invasive non-native species**. Invasive non-native species are one of the most serious threats to global biodiversity. They cost the UK economy £1.7 billion each year and can damage our health and wellbeing. The Norfolk Non-native Species Initiative was launched in 2008 to promote the prevention, control and eradication of invasive non-native species. You can follow them on Facebook at [www.facebook.com/NorfolkInvasives](https://www.facebook.com/NorfolkInvasives) and find out more about invasive species at [www.nonnativespecies.org](http://www.nonnativespecies.org).



## How many species have been recorded in Norfolk?

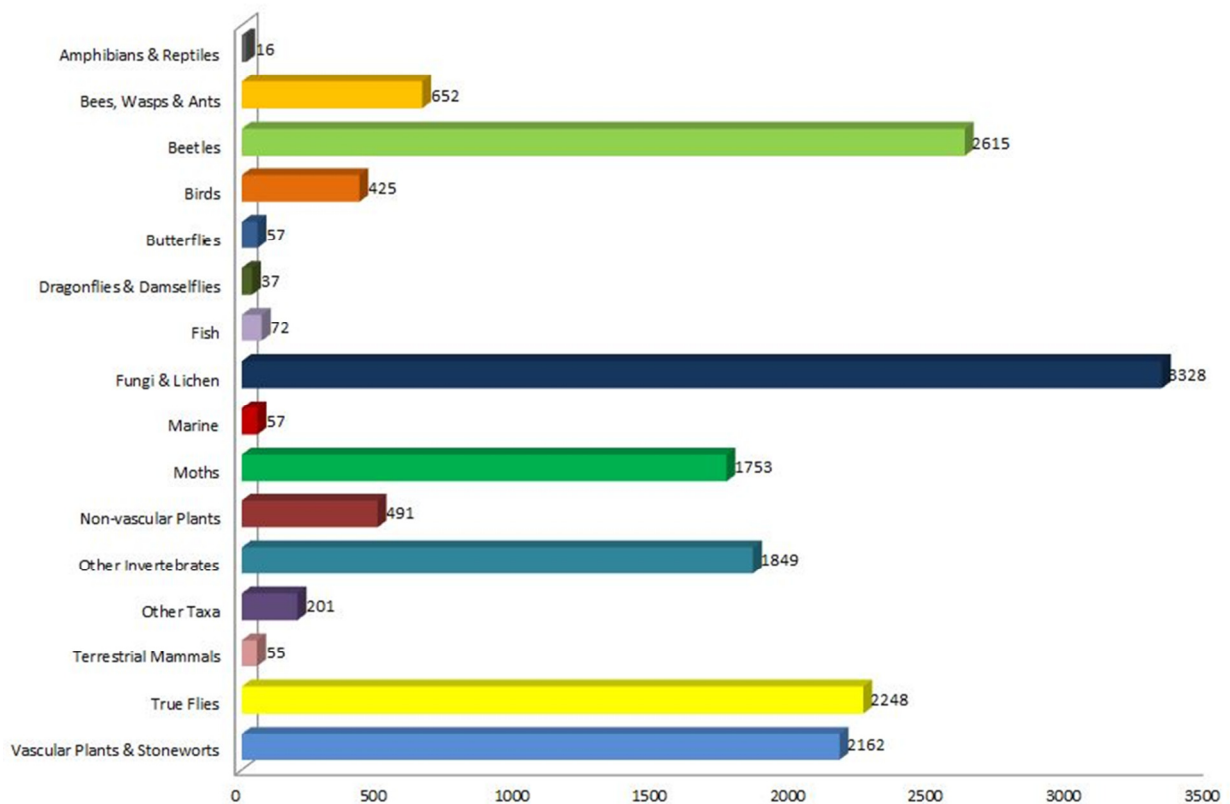


Figure 1. Species diversity in Norfolk, by taxonomic group

(Based on data held by NBIS, March 2016; includes all Norfolk records on the NBIS database from 1670-present)

## New & Nearly New Species for Norfolk 2015-16

Species that are new to Norfolk are discovered by recorders every year. Below is just a selection of species new (or nearly new) to Norfolk in 2015-16.

A lizard orchid was spotted in Norfolk in 2015 for the first time in 60 years. Spotted by a butterfly enthusiast at a location to the north of Norwich, the exact location of the plant was kept secret for its own protection.

A spider found at Winterton by county recorder Pip Collyer was found to be new to Britain. *Syedra myrmicarum* was identified by Dr Peter Merrett of the British Arachnological Society after it couldn't be found in British spider ID books. The tiny spider is a central and northern European species and lives a life closely associated with ants.

Two or three plants of the very rare Holly-leaved Naiad were found in a pond recently restored by the Norfolk Ponds Project in August 2015. Only the second Norfolk record outside of its Broads stronghold, this is a sure sign that the species is moving and that pond restoration may be helping it.



Holly-leaved Naiad © Carl Saver

A new-for-Norfolk fungi was found at Titchwell by a foray led by county recorder Tony Leech. *Entoloma phaeocyathus* is so rare in Britain it doesn't have a common name.

The first Norfolk sighting of a common dolphin since 1995 was made just off the Sheringham coast in November.



*Nyholmiella obtusifolia* © Robin Stevenson

The rare moss *Nyholmiella obtusifolia* has recently been rediscovered in Norfolk, near King's Lynn. The red data book species was found on the branch of a field maple at the side of a road cutting by west Norfolk bryophyte recorder Robin Stevenson.

## SPECIES CASE STUDY: The Norwich Cathedral Peregrines

The peregrine falcon is an impressive bird, well known for its speed as it stoops on unsuspecting prey. The species traditionally nests on cliffs or steep quarry sides. However over the last decade it has increasingly been moving into our cities and building nests on man-made structures such as churches, tower blocks and chimneys.

A pair of peregrines was seen taking an interest in Norwich Cathedral back in 2010, so the Cathedral Estate Department and the Hawk and Owl Trust began working on providing a suitable nesting spot. Due to the historic nature of the cathedral, great care had to be taken of architectural constraints, and the nesting platform was specially painted to match the cathedral's stone.

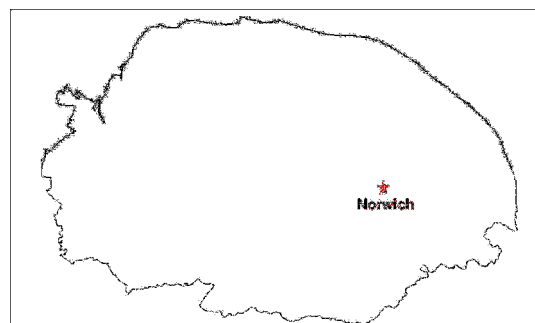
The breeding platform was used almost immediately, although the egg laid in 2011 unfortunately failed to hatch. However from 2012 onwards breeding has been successful with a usual 50% successful fledge rate.

The Norwich Cathedral peregrines have captured the public's imagination from the start. A Radio Norfolk competition to name the chicks in 2012 resulted in hundreds of suggestions being sent in by the public. A live webcam streaming images from the nesting platform has been an internet hit, and the Hawk and Owl Trust organise volunteers to man a very popular watch point in the Cathedral Close, with spotting scopes and binoculars to enable the public to see the birds up close for themselves.

The 2016 watch point is due to open at 10am on Wednesday 23<sup>rd</sup> March. It will be open from 10am – 4pm, 7 days a week depending on weather conditions and volunteer availability.



Norwich Cathedral Peregrines © Richard Saxton



Sources:

[www.hawkandowl.org/norwich-peregrines/origins-of-the-project/](http://www.hawkandowl.org/norwich-peregrines/origins-of-the-project/)  
[www.hawkandowl.org/category/live-norwich-updates/](http://www.hawkandowl.org/category/live-norwich-updates/)

# Habitats in Norfolk



Arable field © Darren Oddy

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



## **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 & 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.

**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.

**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.

**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 reedbed). 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. Reedbeds 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 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 clear waters and rich plant and invertebrate life.
- Ponds – Often linked to agriculture, ponds can be oases of biodiversity 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 – Form a unique habitat and are home to a number of rare and scarce species, such as the Norfolk Hawker dragonfly and Water Soldier.

## Ground Truthing the Habitat Map

The areas of different habitat types have not changed since the 2014-15 State of the Environment Report was produced. This is because the habitat map has not since been updated and may not reflect what is happening on the ground.

The next phase of the habitat map involved checking and ground truthing each habitat type to determine the accuracy of the map and to update polygons where necessary. A project is currently underway to determine how to best go about this and how volunteers can be involved.

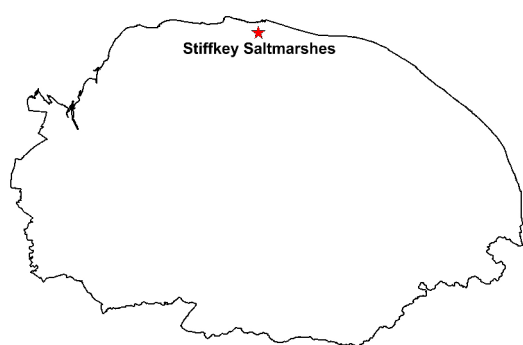
## HABITAT CASE STUDY: Coastal Saltmarsh

Saltmarshes comprise the upper vegetated portions of intertidal mudflats. Their vegetation consists of a limited number of salt tolerant species which are adapted to being regularly submerged by the tide. The frequency of inundation creates clear 'zones' of different plant species.

Saltmarshes are an important resource for wading birds and wildfowl. They also provide sheltered nursery sites for several species of fish. They also act as a natural sea defence and protect the coastline from erosion by absorbing some of the energy of the waves.

Since medieval times, many saltmarshes have been reduced in extent by land claim. Saltmarshes have been drained to create grazing land or arable fields, with sea walls and banks used to keep the tides at bay.

In recent times, some efforts have been made to recreate saltmarshes by breaching sea walls, in a process known as 'managed realignment'. These projects aim to restore both the biodiversity and the natural sea defence of the salt marshes. However some studies have shown that these 'man-made' saltmarshes are not as species rich as natural saltmarshes would be (Mossman *et al* 2012).



Stiffkey Saltmarsh © [Hugh Venables](#) and licensed for reuse under this [Creative Commons Licence](#)  
<http://www.geograph.org.uk/photo/952432>

Sources:

[www.incc.defra.gov.uk/PDF/UKBAP\\_PriorityHabitatDesc-Rev2011.pdf](http://www.incc.defra.gov.uk/PDF/UKBAP_PriorityHabitatDesc-Rev2011.pdf)

Mossman HL, Davy AJ & Grant A (2012). Does managed coastal realignment create saltmarshes with 'equivalent biological characteristics' to natural reference site? *Journal of Applied Ecology* 49(6): 1446-1456.

# Protected Sites in Norfolk



North Norfolk Coast © Lizzy Oddy

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.



| TYPE              | NUMBER | AREA (ha) | % of County Area |
|-------------------|--------|-----------|------------------|
| Ramsar            | 8      | 22767.1   | 4.2              |
| SAC               | 12     | 27311.8   | 5                |
| SPA               | 8      | 46492.6   | 8.5              |
| SSSI              | 166    | 51050.2   | 9.3              |
| NNR               | 22     | 13404.2   | 2.5              |
| LNR               | 28     | 928.7     | 0.2              |
| CWS               | 1326   | 15044.8   | 2.8              |
| RNR               | 111    | -         | -                |
| CGS               | 5      | -         | -                |
| Geodiversity Site | 370    | -         | -                |

Table 2. Number and area of each type of statutory and non-statutory designated sites, and the % of the county that they cover. These statistics do not include marine designated areas.

## 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 those habitats and species considered most in need of protection at a European level.

**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.

**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.

**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 Geodiversity Sites (CGS)** - previously known as Regionally Important Geological Sites (RIGS), their name has been changed to reflect the importance of the geodiversity of a site in a county context.

**Geodiversity Sites** - non-designated sites of geodiversity interest within the county of Norfolk, determined by the Norfolk Geodiversity Partnership.

## The Effect of Public Access and Recreation on Natura 2000 Sites

Natura 2000 sites are Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) designated for their international importance for wildlife. The Conservation of Habitats and Species Regulations 2010 require that plans be assessed for adverse impacts on the Natura 2000 network. Tensions exist on designated sites between their value for biodiversity and their use for recreation.

Types of recreation affecting Natura 2000 sites include dog walking, walking and running, water sports, recreational fishing, cycling, off road vehicles and horse riding.

Currently **55%** of Natura 2000 sites in Norfolk are **adversely affected** by access or recreation.

| SPAs                       | SACs                           |
|----------------------------|--------------------------------|
| N Norfolk Coast            | North Norfolk Coast            |
| The Wash                   | The Wash & North Norfolk Coast |
| Breckland                  | Breckland                      |
| Broadland                  | The Broads                     |
| Great Yarmouth North Denes | Winterton-Horsey Dunes         |

Table 3. SPAs and SACs in Norfolk currently affected by access or recreation.

## 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 2 below shows the results of the latest SSSI monitoring for Norfolk:

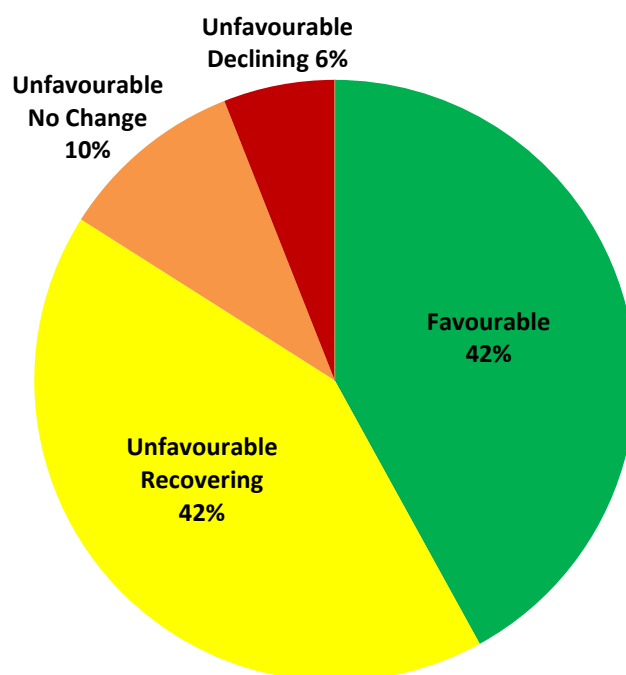


Figure 2. Percentage of SSSI units in each condition.



## Local Site Condition

NBIS reports back to central government on **Single Data List 160-00** (formerly NI197) on the proportion of local sites (non-statutory sites designated for their biodiversity or geodiversity value) in positive conservation management. Figure 2 shows the latest results for 2014-15 by district and for the county as a whole. Overall **75% of local sites** in Norfolk are in **positive conservation management**. This compares very favourably to an average of **50%** for the whole of England.

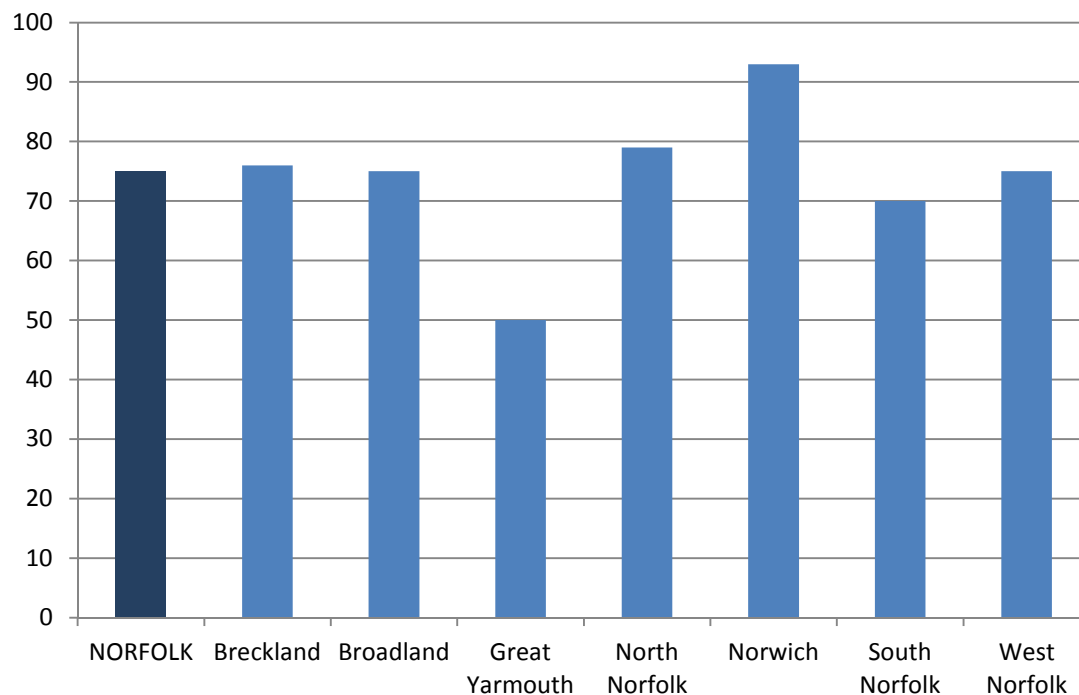


Figure 3. Percentage of Local Sites (by district) in positive conservation management 2015-16.

## PROTECTED SITE CASE STUDY: Southrepps Common LNR & SSSI

Southrepps Common is a 12.4 hectare Local Nature Reserve spreading over five sites in Lower Southrepps village. Approximately half of the site is designated as a SSSI and is part of the Norfolk Valley Fens Special Area of Conservation (SAC). An 800m boardwalk allows wheelchair access to the most important parts of the site.

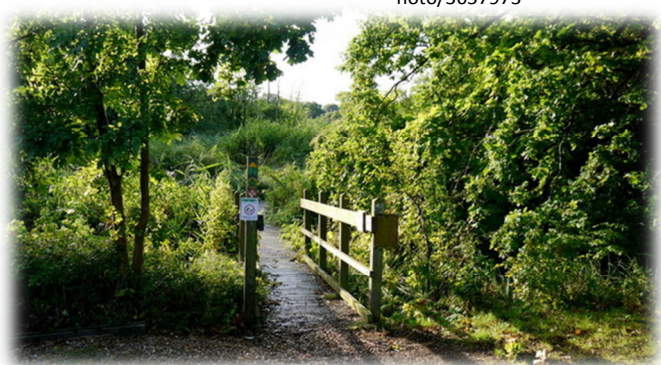
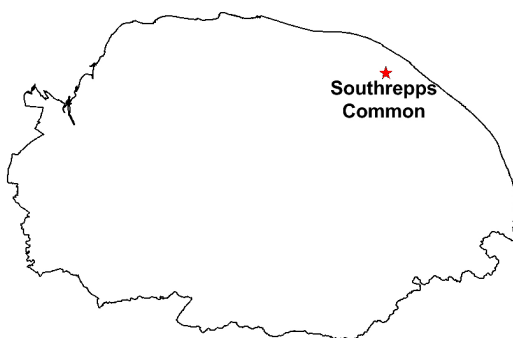
The reserve is home to an exceptionally wide range of habitats and species, comprising woodland, reeds, sedges, grassland and rare wild flowers. On the central part of the site ('The Common') you can see wild orchids, cottongrass, bogbean and reeds amongst many other species. Reed warblers, sedge warblers and reed buntings can often be found here, along with dragonflies, damselflies and butterflies in the summer months. Ninety-eight species of moth have been recorded on the site and glow worms can be seen after dark. A number of rare and notable flies, characteristic of undisturbed wetlands have been reported from Southrepps Common, including two whose larvae are parasitic on snails.

The site is looked after by the Southrepps Common Trust, a charitable organisation. All of the work on site is reliant on volunteers. Their website is [www.sctrust.org.uk](http://www.sctrust.org.uk) where you can see maps of the site, find out more about it and how you can get involved.



Southrepps Common © Jonathan Billinger and licensed for reuse under this [Creative Commons Licence](https://creativecommons.org/licenses/by/4.0/).  
<http://www.geograph.org.uk/photo/3659958>

Entrance to Southrepps Common © Jonathan Billinger and licensed for reuse under this [Creative Commons Licence](https://creativecommons.org/licenses/by/4.0/).  
<http://www.geograph.org.uk/photo/3657973>



Source: [www.sctrust.org.uk](http://www.sctrust.org.uk)

## PROTECTED SITE CASE STUDY: Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ)

Approximately 321km<sup>2</sup> of sea, 200m off the North Norfolk Coast was designated as a Marine Conservation Zone in January 2016. The Cromer Shoal Chalk Beds MCZ begins to the west of Weybourne and stretches round to Happisburgh, extending about 10km out to sea. As an MCZ, specific features within the area are protected, and regulators will manage marine activities where necessary.

The protected area contains a chalk reef – most likely Europe’s longest – which is made up of boulders, stacks and arches. The chalk beds act as nursery areas for juvenile species and are home to crabs and lobsters which hide in the crevices. Large communities of crustaceans, burrowing piddocks, sea squirts, anemones and sponges can be found and shoaling fish provide food for seabirds. A purple sponge discovered on the reef in 2011 was found to be new to science!

Now that the site has been designated, the Eastern Inshore Fisheries and Conservation Authority (Eastern IFCA) will assess whether or not fishing activity (including crab and lobster potting) has a negative effect on the important features of the site. This will show if additional management measures need to be put in place to protect the site. If these are needed, they will be developed in consultation with relevant stakeholders, including the fishing industry.



Chalk reef © Rob Spray & Dawn Watson

### Sources:

[http://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/492323/mcz-cromer-shoal-chalk-beds-factsheet.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492323/mcz-cromer-shoal-chalk-beds-factsheet.pdf)  
[www.wildlifetrusts.org.uk/mcz/cromer-shoal-chalk-beds](http://www.wildlifetrusts.org.uk/mcz/cromer-shoal-chalk-beds)  
[http://www.eastern-ifca.gov.uk/index.php?option=com\\_content&view=article&id=181:cromer-shoal-chalk-beds&catid=10:newsandpress&Itemid=55](http://www.eastern-ifca.gov.uk/index.php?option=com_content&view=article&id=181:cromer-shoal-chalk-beds&catid=10:newsandpress&Itemid=55)