









The Gaywood River Valley

A State of the Environment Report
Summary



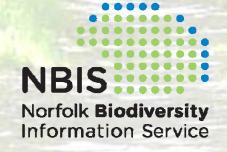






Produced by Norfolk Biodiversity Information Service
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Norfolk Biodiversity Information Service (NBIS) is a Local Record Centre holding information on species, geodiversity, habitats and protected sites for the county of Norfolk. For more information see our website: www.nbis.org.uk



This report is available for download from the NBIS website www.nbis.org.uk
The full Gaywood River Valley State of the Environment Report can be downloaded from
the NBIS website CLICK HERE

Report written by Lizzy Carroll, March 2012.

Cover Photos: Clockwise from top left: Roydon Common (Credit: Norfolk Wildlife Trust); The Walks (Credit: Gemma Clark); Upper Gaywood (Credit: Robin Stevenson); Bawsey Ruins (Credit: Kirsty Webber-Walton).

Background photo (throughout report): Reffley Wood (Credit: Kirsty Webber-Walton).

FOREWORD

The Gaywood River Valley Project is part of an international Initiative called SURF (Sustainable Urban Fringes). SURF runs until summer 2012 and involves 15 partners from countries around the North Sea. It aims to test ideas to improve the social, economic and environmental quality of urban fringe areas.

The SURF project area follows the catchment of the River Gaywood and spans approximately 5,700 hectares. The Gaywood is a short chalk river that rises from springs near Derby Fen to the east of King's Lynn and flows into the Great Ouse at King's Lynn, and then into the North Sea through The Wash estuary.

To meet the huge challenges posed by climate change and the rapid pace of development in and around King's Lynn, the importance and true value of the area's natural assets need to be rechecked to ensure they are protected and can be accessed and valued by local people. The Gaywood River Valley Project aims to explore and develop a wide variety of programmes that will add value to the environment of the project area and deliver benefits to the community. These benefits will make the area more accessible for recreational activities such as walking and biking; provide learning opportunities; improve wildlife habitats; help to safeguard species; explore the issues of flooding and climate change in the area and bring local communities together to create a shared vision for the Valley.

The Gaywood Valley really is a local treasure of West Norfolk and I hope that after reading this report you will see why. Perhaps you will feel inspired to get involved in a local voluntary group, submit some records or even just get outside into the valley to enjoy its stunning scenery and wildlife.



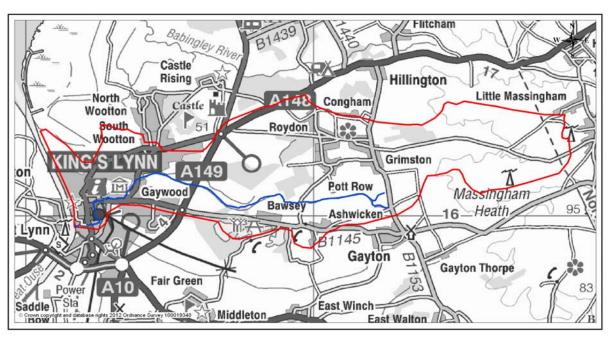
Gemma Clark, Gaywood Valley Project Officer

WELCOME!

The Gaywood River Valley, stretching from the historic town of King's Lynn eastwards out to Great Massingham, is a little known, often forgotten part of Norfolk. Even people who live there are often unaware of the treasures to be found in the Valley. This report aims to change that! The Gaywood Valley has a fascinating past and contains important protected sites, a fantastic variety of landscapes and habitats, and a wealth of wildlife.

This is a summary of a report written by Norfolk Biodiversity Information Service (NBIS) with contributions from people who live, work and volunteer in the Gaywood Valley. It summarises key information about the environment of the Gaywood Valley, showcasing the important sites, species, habitats, geology and historic features of the area. The data included provide an important baseline which can be compared against in the future to show how the environment of the Gaywood Valley is changing.

If, after reading this summary you would like to know more, the full State of the Environment Report for the Gaywood River Valley can be downloaded from the NBIS website CLICK HERE.



The map above shows the Gaywood Valley project area (outlined in red) and the course of the Gaywood River (in blue).

LANDSCAPE HISTORY & GEODIVERSITY

Geodiversity underpins the landscape of the Gaywood Valley. Natural processes have been working on beds of clay, chalk and sandstone over many thousands (and millions) of years to produce the landforms and soils of the valley, and the range of important wildlife habitats we see today. Groundwater and surface water flows have created the Gaywood River. Geodiversity has made a big contribution to human life through resources which we often take for granted such as drinking water, minerals, building stone and soils for farming.

The landscape of the Gaywood Valley that we see today has been formed over the past 500,000 years. Glaciers have broadened the valley; retreating ice has left behind rocks, sand, gravel and silt. Sediments have shifted downhill and the river has transported material towards the sea.



- Footpaths over Grimston Heath and Lanky Hill give splendid views across the chalk upland landscape towards Great Massingham.
- Look for strange crop marks on aerial photos of the Gaywood Valley. These are caused by patterns in the soil formed by alternate freezing and thawing in the last Ice Age (about 18,000 years ago).
- Visit the wetland nature reserves at Leziate, Derby & Sugar Fens. See alder trees with 'stilt' roots showing how peat soil has wasted away in recent decades.

 Old walls display a fascinating variety of rock types gathered from local fields and dug from stone quarries. Local clays have been used for brickmaking and pottery, notably at Pott Row, where distinctive Grimston Ware pottery was made in Medieval times.



 Take a walk at Bawsey Country Park, where ocean-going ammonites and plesiosaurs once swam. The sand in the beaches and cliffs was deposited when dinosaurs walked the Earth.



Area of Gaywood Valley river catchment	5700 hectares (ha)
Length of the Gaywood River	13km
Number of geological Sites of Special Scientific Interest	2

To read more about the fascinating history of the Gaywood Valley, you can download the full report

IMPORTANT SITES

Did you know that there are sites within the Gaywood Valley that are important for their wildlife or geology at a county, national or even international level? These sites are crucial for the conservation of rare plants, animals and geology, and many of them are open to the public allowing you to explore and experience nature for yourself.

Roydon Common, owned by Norfolk Wildlife Trust, is one of the largest and most important heathlands in Norfolk. It is also designated as a Ramsar Site (an internationally important wetland), a National Nature Reserve and a Special Area of Conservation (see also page 9).



Sites of Special Scientific Interest – These are the best sites for wildlife or geology in the country.

There are four SSSIs in the Gaywood Valley:

- Bawsey SSSI a nationally important geological site for understanding the Anglian Glaciation 450,000 years ago.
- Roydon Common one of Britain's best examples of lowland mixed valley mire and a nationally important heathland. Supports many rare plants, birds and insects.
- Grimston Warren Pit a nationally important geological site for understanding the Lower Cretaceous period in north Norfolk.
- Leziate, Sugar & Derby Fens the remains of a once extensive valley fen system containing a wide range of habitats.



County Wildlife Sites - Sites of wildlife importance at a county level.

Most of the 18 County Wildlife Sites in the Gaywood Valley are privately owned and do not allow public access. There are five which are publicly accessible:

- Reffley Spring Wood (located off Reffley Lane, opposite the community centre).
- Reffley Wood (entrance via Sandy Lane, off Grimston Road).
- Mill House Wood (entrance is off an unnamed road linking the A148 and the A149 near to Castle Rising).
- Adjacent to B1145 (site can be accessed from Bawsey County Park).
- Congham Heath Woods (accessed from a track off Congham Road, Grimston).







Norfolk Wildlife Trust Roydon Common National Nature Reserve – David North, NWT

Roydon Common is one of the largest and most important heathlands in Norfolk. The mix of habitats - wet heath, dry heath, mire and woodland - together with the landscape scale of the nature reserve make this a very important area for wildlife. The nature reserve was established by Norfolk Wildlife Trust in 1963 and in recognition of its national importance was declared a National Nature Reserve in 1995. The NNR area is 192 hectares making this not just the largest open heath in the Gaywood Valley but the largest remaining area of heathland and valley mire in Norfolk.

Rare and special wildlife:

The sweeping views across open heather-clad heath and primeval looking bogs can at first seem largely devoid of wildlife. However the rich mix of wet and dry habitats hides an astonishing diversity of birds, plants and animals, including many which are nationally rare. The mix of plant communities grading from wet acid heath, through waterlogged valley mire to calcareous fen is considered one of the best examples of this vegetation in Britain. There are many uncommon plants including black bog-rush, marsh fern, cranberry, bog asphodel, common cotton-grass, carpets of sphagnum moss and all three species of sundew. Look out for the rare black darter dragonfly only known at a handful of sites in East Anglia. It may be seen on the wing between July and October and frequents the wettest areas of heath where bog asphodel grows. Rare breeding birds include nightjar and woodlark. Small pools are home to the very rare raft spider *Dolomedes fimbriatus*, Roydon Common being the only site for this species in East Anglia. This nature reserve also supports many less obvious groups of wildlife such as bees, dragonflies, beetles, reptiles, amphibians, moths and butterflies, often including rare heathland 'specialist' species. The reserve is a stronghold for adders, common lizards and minotaur beetles to name just a few.

Access:

The nature reserve is open every day from dawn to dusk. Entrance is via two car parks on the Rising Lodge to Grimston road. There are clearly way-marked trails to follow and good interpretation and route signs near both entrances. For further details, including a downloadable reserve leaflet visit www.norfolkwildlifetrust.org.uk

nber of Sites of Special Scientific Interest (SSSI)	4
Total Area	291.4ha
SSSIs in Favourable Condition	2
ber of County Wildlife Sites (CWS)	18
Total Area	353.6ha
WS in Positive Conservation Management 2010/2011	55.6%
ber CWS with public access	5
	Total Area SSSIs in Favourable Condition Total Area Total Area SSSIs in Favourable Condition The of County Wildlife Sites (CWS) Total Area WS in Positive Conservation Management 2010/2011 The CWS with public access

To find out more about the important sites in the Gaywood Valley, you can download the full report report

HABITATS AND LAND USE

A habitat is "an environment in which an organism or ecological community normally lives or occurs". While some species are able to live in a variety of habitats, there are others that can only survive in a particular habitat type. Land use describes how the land is being used by people.

There are many different habitats and land uses in the Gaywood Valley including:

- Deciduous, coniferous and mixed woodland.
- Ancient woodland sites that have been woodland continuously since at least 1600.
 Planting woodlands was much less common before this time, so they are likely to have become woodland naturally.
 Reffley Wood is an ancient woodland site.
- Grassland improved (where fertilizers have been added, leading to less species being present), semi-improved (more 'natural' grassland, containing more species and better for wildlife) and 'undetermined' (not yet surveyed).
- Heathland an important and rapidly declining habitat in the UK. It contains heather and gorse and is home to many rare species.
- Churchyards often act as an oasis for wildlife (and people!) in built up areas.
- Ponds along with other standing water bodies, such as lakes, these are often vital habitats for many species, including protected species such as the great crested newt.









 Urban greenspace – this includes parks, recreation grounds, playing fields, allotments and grass verges. Acting like green lungs in the urban landscape, these green spaces improve the environment and let people experience nature on their doorstep. Urban greenspaces in King's Lynn include The Walks, Tower Gardens and Hardings Pits.





• Just over 50% of the Gaywood Valley is covered by arable land. While these areas can sometimes seem boring, bare and devoid of wildlife, if well managed they can support important species, some of which are found nowhere else.



 Over 450 hectares of arable land is being managed under an Environmental Stewardship scheme. These reward farmers for managing parts of their land in a way that benefits the environment. And a number of areas within the Valley have been shown to be of national importance for their arable plants.



Area of Deciduous Woodland	256ha	Area of Heathland	153ha
Area of Coniferous Woodland	178ha	Number and Area of Churchyards	15; 4ha
Area of Mixed Woodland	133ha	Number of Ponds	149
Area of Semi-improved Grassland	102ha	Area of Urban Greenspace	117ha
Area of Improved Grassland	482ha	Area of Arable	2913ha
Area of 'Undetermined' Grassland	223ha		
Number of agri-environment schem	ies operatii	ng in the Valley	32
Number of agri-environment schem Area of land in Entry Level	es operatii 60ha	ng in the Valley No. schemes including habitat	32 5
		,	
Area of land in Entry Level		No. schemes including habitat	
Area of land in Entry Level Stewardship	60ha	No. schemes including habitat creation	5
Area of land in Entry Level Stewardship Area of land in Higher Level	60ha	No. schemes including habitat creation No. schemes including habitat	5
Area of land in Entry Level Stewardship Area of land in Higher Level Stewardship	60ha 413ha	No. schemes including habitat creation No. schemes including habitat restoration	5

To discover more about the wide variety of habitats in the Gaywood Valley, you can download the full report

SPECIES

It might surprise you to know that literally thousands of species call the Gaywood Valley home. From minute slime moulds to the magnificent marsh harrier, from tiny ants to towering conifers, NBIS holds **21828** individual records of **3102** species from the Gaywood Valley.

Twenty-seven species of plant and 11 species of mammal in the Gaywood Valley are classed as 'species of conservation concern'. This means that they are rare or scarce, or are protected at an international, European, national or local level.

Fourteen species of invasive non-native species have also been recorded in the Gaywood Valley. These are species that have been introduced by man and are likely to spread rapidly and cause problems for our native wildlife.

Which species can you spot in the Gaywood Valley? Here are a few to get you started:

- Look out for the magnificent red kite, a bird of prey sometimes spotted soaring over the Valley. Saved from extinction through reintroduction programmes, these big, reddish-brown birds with deeply forked tails are now returning to Norfolk.
- In the spring, when you're out in the countryside, look out for 'mad March hares'! This 'boxing' behaviour is actually female brown hares fending off overly-amorous males!
- Hedgehogs can often be found in both rural and urban areas. Look out for them when they're out foraging after sunset during the warmer months. They can travel up to 2km a night!
- Have a go at attracting moths to light or to a sugar solution and see how many species you can find. See the Norfolk Moths website for more information on how to start moth trapping (http://www.norfolkmoths.co.uk)









The Flora of the Gaywood Valley – Robin Stevenson, County Recorder

A wide variety of habitats and soil types make the Gaywood valley, for its size, very rich botanically.

Intensive surveys of King's Lynn have resulted in over 800 species of plants being recorded. Whilst this total includes a lot of aliens and garden escapes, it also includes many native plants, which have survived in woodlands and on small pieces of waste land. Reffley Wood, on the edge of the town, has good populations of plants such as Bluebells, Primrose and Ramsons (Wild Garlic), whilst in small fragments of woodland elsewhere in the town Wood Anemone and Goldilocks Buttercup can also be found. Amongst the most interesting plants to survive on fragments of wasteland are Grass Vetchling, Bee Orchid and Southern Marsh-orchid.

The main roads are salted in winter, allowing salt-tolerant coastal plants such as Sea Couch grass, Dittander and Danish Scurvygrass to establish themselves alongside.

Roydon Common, a National Nature Reserve with wide stretches of heather and bog contains a number of interesting flowering plants on the bog, such as Cranberry, but is mainly remarkable for the number and variety of mosses that grow on it. Close by are several Sites of Special Scientific Interest, at Sugar, Derby and Leziate Fens. Sugar and Derby Fen have rather acid vegetation with plants such as Devil's-bit Scabious and Sundew, whilst Leziate Fen has much chalkier soils, with plants such as Stemless Thistle and Fairy Flax.

Much of the rest of the valley is covered in arable fields. These sometimes contain rare weeds of cultivation such as Venus's-looking-glass and Night-flowering Catchfly. Along the many footpaths in the upper part of the Valley nice plants such as Wild Basil, Harebell, Rockrose and Dropwort can still be found.

The Gaywood River itself, and the various ditches feeding into it, provide habitat for water loving plants such as Wood Club-rush, which was thought to be extinct in the county until found recently on Derby Fen. Other attractive water plants in the Valley include Water Forget-me-not, Purple Loosestrife, Flowering Rush and Water Primrose.



















Number of species records held by NBIS for the Gaywood Valley	21828
Number of individual species recorded in the Gaywood Valley	3102
Number of Species of Conservation Concern recorded in the Gaywood Valley	262
Number of invasive non-native species recorded in the Gaywood Valley	14
Number of Biodiversity Action Plan species recorded in the Gaywood Valley	46

To learn more about the species of the Gaywood Valley, you can download the full report

HISTORIC ENVIRONMENT

The historic environment encompasses all of the physical evidence and material remains that our ancestors have left on the landscape.

Records from the Gaywood Valley range from the Paleolithic right through to World War II artefacts, with the majority being from the medieval and post medieval periods.

Many sites around the Bawsey, Leziate and Ashwicken areas are of regional or even national importance for historic environment finds, including Mesolithic flints, a Neolithic flint arrowhead, the site of a Medieval church and pottery fragments dating from the Roman to Medieval periods.

'Salterns' indicate where the edge of the coastline was in Iron Age and Roman times. These are sites where sea water was evaporated in troughs over a hearth, to produce marine salt crystals. Distinctive red soil marks show where the remains of this industry are.



Bawsey Ruins are all that is left of a large Saxon village, destroyed in the 16th Century by the landowner to create more pasture for his sheep. The site is of particular interest to archaeologists and was even the subject of a Time Team dig in 1999!
Bawsey Ruins can be accessed via a track from Church Farm, off the B1145 between Queen Elizabeth Way and Bawsey Country Park.



The Reffley Spring (which used to rise up in Reffley Spring Wood) was the annual meeting place of the Reffley Society. At these meetings, each member of the "Reffley Brethren" was required to drink a punch made from various liquors mixed with the iron-rich spring water. Unfortunately, due to extensive vandalism the obelisk and temple at the site had to be demolished in the 1980s.

Number of historic monuments recorded in the Gaywood Valley	1240
Number of listed buildings in the Gaywood Valley	170
Number of 'find spots' (where historic artefacts have been found)	315
Number of other historic buildings	34

To find out more about the historic environment of the Gaywood Valley, you can download the full report HESE

ENVIRONMENTAL QUALITY

Measuring the quality of the environment, such as that of air and water, gives an indication of how pleasant an environment the Gaywood Valley is to live in. It also means that where environmental quality levels are not as high as they should be, action can be taken to improve them.

- King's Lynn and West Norfolk Borough Council have to monitor the air quality within the borough to assess it in relation to national standards. Nitrogen dioxide (NO₂), which is produced by traffic, is measured at strategic points around King's Lynn. The results from these points are averaged for the year, and where NO₂ levels exceed the national standard, measures are put in place to reduce them.
- The water quality of the Gaywood River is monitored by the Environment Agency and assessed in relation to standards set by the Water Framework Directive. The river can then be classified as (from best to worst): 'High', 'Good', 'Moderate', 'Poor', or 'Bad'.



Number of points with annual average NO ₂ levels <i>above</i> the National Air Quality	11
Objectives limit in 2010.	
Number of points with annual average NO ₂ levels <i>below</i> the National Air Quality	17
Objectives limit in 2010.	
Water Framework Directive overall ecological status of the Gaywood River	Good

To learn more about the environmental quality of the Gaywood Valley and how it is monitored, you can download the full report 11</a

GETTING OUT IN THE VALLEY

There are lots of opportunities for getting out and enjoying the Gaywood Valley. You may not realise it, but there are almost **50km** of public footpaths within the Valley, along with **12km** of bridleways, **8.4km** of cycleways and **7.4km** of restricted byways (restricted byways allow access on foot, horseback, cycling or any other non-mechanical vehicle).

- Explore the Peddars Way, a long-distance trail which follows the route of an old Roman Road that runs from Knettishall in Suffolk to Holme on the North Norfolk coast. A 3km section of this path crosses the eastern end of the Gaywood Valley, near Great and Little Massingham.
- Check out the Norfolk County Council Health, Heritage and Biodiversity walks in and around King's Lynn. Including circular walks around South Quay & West Lynn, Reffley Wood and Leziate & Ashwicken, the booklet can be downloaded and printed from http://www.countrysideaccess.norfolk.gov.uk/walk.aspx?id=84.
- Try out the walks starting from the villages of Roydon, Pott Row, Grimston and Congham. New circular walks boards (such as the one below) have been installed to help you explore these villages, their wildlife and their history.



- Most people are only willing to travel so far to visit greenspaces. Natural England
 has drawn up a list of recommended maximum distances that people should have
 to travel from their home to accessible greenspaces of various sizes.
- Much of the urban area of the Gaywood Valley falls within the recommended distance from the larger greenspace sites (though not the smaller ones). However it is also the case that areas where fewer households own a car (generally in urban King's Lynn) are located further away from the larger greenspace sites, making accessibility difficult.



Total length of public footpaths in the Gaywood Valley	50km
Total length of bridleways in the Gaywood Valley	12km
Total length of cycleways in the Gaywood Valley	8.4km
Total length of restricted byways in the Gaywood Valley	7.4km
% of urban areas within 300m of accessible greenspace of over 2ha	44.9%
% of urban areas within 2km of accessible greenspace of over 20ha	69.1%
% of urban areas within 5km of accessible greenspace of over 100ha	100%
% of urban areas within 10km of accessible greenspace of over 500ha	91.4%

To discover more about getting out in the Gaywood Valley, you can download the full report _____

GETTING INVOLVED

If you want to do more than simply get outside and explore the Gaywood Valley, there are ways that you can become more involved, such as by joining a community conservation group, or recording the wildlife you encounter and make a positive contribution to species and habitat conservation.



Local conservation groups such as the Reffley Wood Volunteer Group and Hardings Pits Community Association welcome volunteers to their regular work days. No experience is necessary and tools are generally provided. They also often hold other activities such as walks, talks and family activities.

Recording wildlife is a great way to get out and experience nature, as well as making a positive contribution to conservation.



Norfolk Biodiversity Information Service collects, manages and provides wildlife records for the whole county. Most of the records collected come from volunteer recorders, and are used in planning decisions, research and conservation work.

For a record to be useful to us, we need you to tell us WHAT you saw, WHEN you saw it, WHERE you saw it (preferably with a grid reference) and WHO saw it.

You can submit your records to NBIS online at www.nbis.org.uk/AllSpeciesSurvey or email them to nbis@norfolk.gov.uk

Number of people attending activities run by Reffley Wood Volunteer Group in 2011 **719**Number of people attending activities at Plantation Wood in 2011 **509**

If you'd like to find out more about getting involved in the Gaywood Valley environment, you can download the full report