

Water of the Lincolnshire Wolds

AREAS OF INTEREST

These suggested sites illustrate some points of interest, most of which are easily accessible and

can be visited without special permission. Please follow the countryside code, park your car considerately, stay to waymarked paths, do not disturb wildlife or pollute watercourses.

1 Barrow Blow Wells

This reserve is a Site of Special Scientific Interest (SSSI), owned and managed by Lincolnshire Wildlife Trust and consists of reedmarsh and woodland with two blow wells. These are natural artesian springs where water under pressure escapes from the chalk through the overlying boulder clay. The larger of the two wells forms a pool full of clear water in which grows a mass of the pale-green, common water-starwort. Around the wells are marsh with reed sweet-grass whilst the wood may once have been an old osier bed and there is an area of wet pasture. The Barrow Beck flows along the northern boundary where kingfishers and sedge warblers may be seen.

2 Claxby Springs



This small site lies beside the road in the village of Claxby St Andrew, near Willoughby. Burlands Beck rises from a chalk cliff and forms a shallow pool of clear, cold water held in place by a dam. Freshwater shrimps and caddis larvae abound, and the little flatworm *Crenobia alpina*, a rare species found in the cool headwaters of streams, lives under the stones. There are many birds to be seen here, including grey wagtail and occasionally dipper in winter.

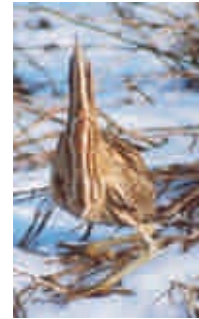
3 Tetney Blow Wells

This SSSI, owned by Anglian Water and managed by Lincolnshire Wildlife Trust, consists of four large blow wells with damp woodland, meadow and old water-cress beds that have been colonised by marsh vegetation and reedbeds. The wells are reed-fringed and have prolific growths of starwort and Canadian pondweed.



4 Far Ings National Nature Reserve

The chain of flooded clay pits and extensive reedbeds along the Humber Bank from west of Barton-upon-Humber to New Holland is a legacy of the brick and tile industry and, more recently, of cement making. The Far Ings National Nature Reserve is part owned and managed by the Lincolnshire Wildlife Trust. It comprises the open water of Ness Lake, Westfield Lakes and Pursuit Pit, large areas of reedbed, recently made 'scrapes' with shallow water, grassland, hedgerow, scrub and estuarine saltmarsh. The Barton and Barrow clay pits are among the few breeding sites in Lincolnshire for bearded tits, which often form conspicuous flocks in late summer. Bitterns have returned to breed in recent years and this area is now the second most important site nationally for this species.



5 Covenham Reservoir

The south-east corner of the reservoir is managed for wildlife conservation by agreement between Lincolnshire Wildlife Trust, Anglian Water and the Covenham Water Sports Association. The reservoir is artificially embanked for its entire length, with steeply shelving sides and no marginal vegetation. Nevertheless, it attracts large numbers of wintering wildfowl and other aquatic and waterside birds.

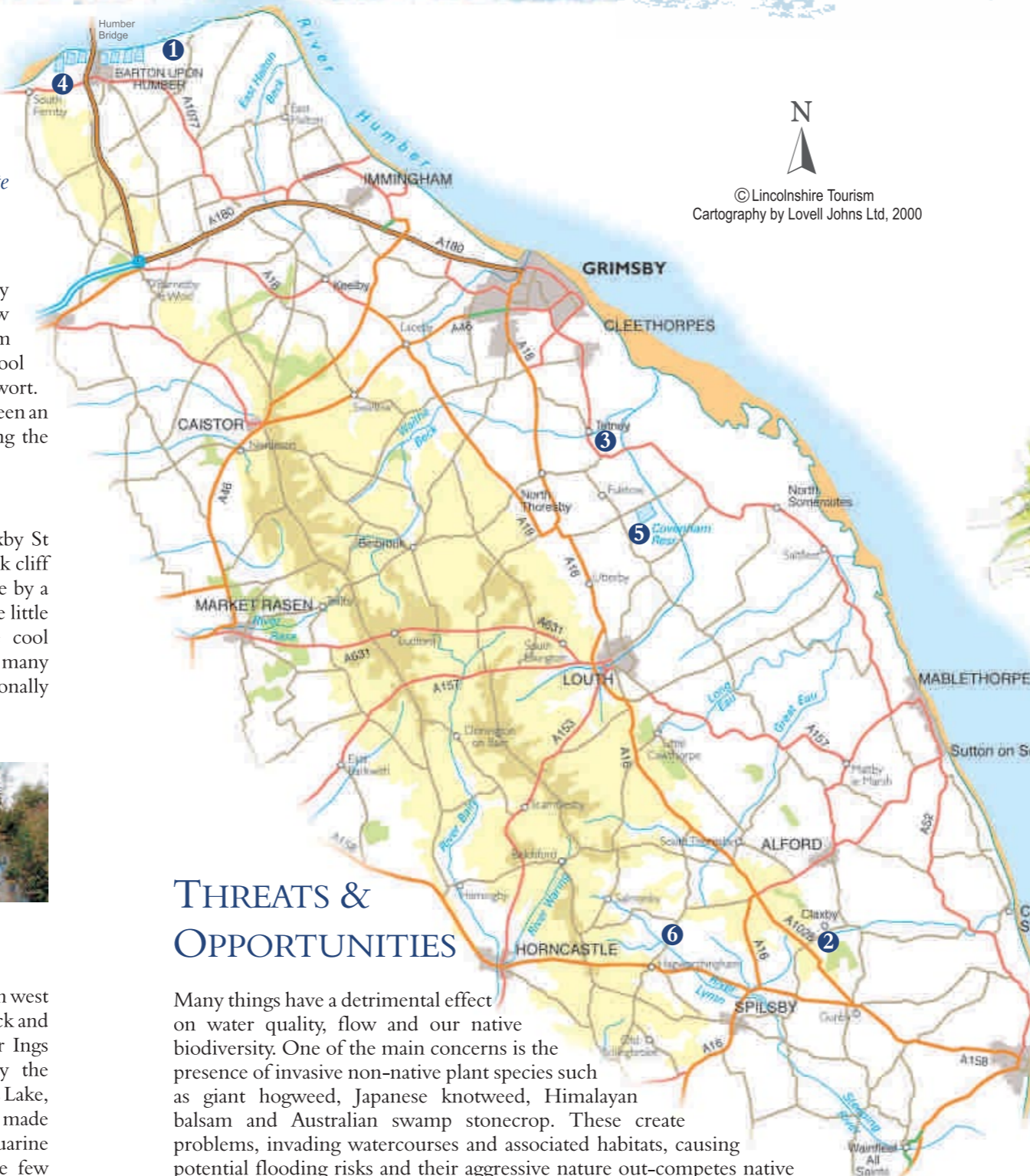
6 Stockwith Mill

This water-mill near Hagworthingham is believed to date from before the start of the seventeenth century and whilst the giant undershot water wheel still works, the last time it generated electricity was in 1960.

This is an excellent location to explore the River Lymn and some of its tributaries that inspired the nineteenth century poet Alfred, Lord Tennyson. From the Mill, with its Tennyson Exhibition, tea room and craft shop, walks of differing lengths lead you through the countryside, past well established man-made ponds and lakes providing important wildlife habitats. For opening times, please contact 01507 588221.



- 1 A running tap uses a lot of water ...
 - use a bowl for washing vegetables and dishes
 - don't leave the tap running whilst brushing your teeth
 - for a cold drink, fill a covered jug and put it in the fridge instead of running the tap
- 2 Fix dripping taps.
- 3 Have a shower instead of a bath, but remember a power shower can use twice as much water as a bath.
- 4 Wait until you have a full load before doing your washing, or use the half load button on your machine. The same goes for the dishwasher.
- 5 If you need to purchase a new water using appliance, check to see how water efficient it is first.



THREATS & OPPORTUNITIES

Many things have a detrimental effect on water quality, flow and our native biodiversity. One of the main concerns is the presence of invasive non-native plant species such as giant hogweed, Japanese knotweed, Himalayan balsam and Australian swamp stonecrop. These create problems, invading watercourses and associated habitats, causing potential flooding risks and their aggressive nature out-competes native wildlife. Planting or allowing Japanese knotweed and giant hogweed to grow in the wild is an offence but these species are now widespread and their control is in the hands of the landowner. Remember, never introduce plants or release animals in the wild as this can upset the natural balance of the countryside.

As many ponds have been lost in the countryside, garden ponds are now very important to the survival of wetland wildlife and are a great way to attract wildlife into your garden. All animals require water at some stage of their life, like dragonflies and frogs who spend part of their lives in it and birds who need it for drinking and bathing. Even the globally rare great crested newt can live in garden ponds. If you are putting in a new pond, think carefully about where to site it - a warm sunny area is better than under dense shade and trees. A varied shape to a pond is vital - ensure that it has sloping sides for drinking animals and areas of deep water to prevent freezing during the winter and to provide cooler refuge areas during the summer. The best way to stock your wildlife pond is to introduce silt from a nearby established one. Many species of invertebrates and amphibians will arrive naturally but don't introduce fish as these will quickly strip your pond of eggs and larva.

For further advice please contact:

Invasive weeds in or near fresh water
Environment Agency - 03708 506 506

Gardening for wildlife
Lincolnshire Wildlife Trust - 01507 526667

Stream management and conservation advice
Lincolnshire Chalk Streams Project - 01507 609740



beWaterWise

How you can help protect, conserve and enhance water.

These top ten tips can help reduce the amount of water you use around the home:

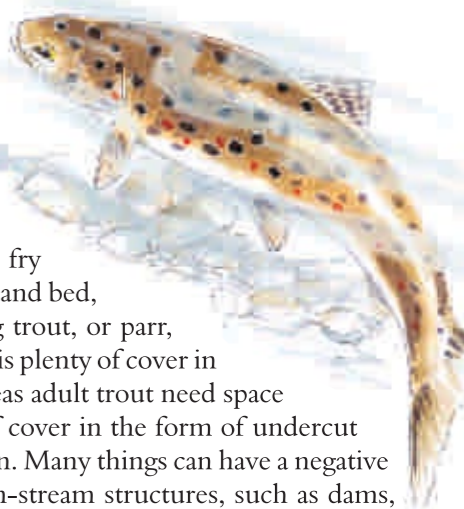
WILDLIFE OF WATER

The otter is one of Britain's most recognisable but reclusive mammals which suffered great decline in the 1950s. Luckily numbers of otters are now on the increase and whilst surveys suggest they are to be found throughout the county, there is still a great deal that can be done to help protect the species and enhance their habitat. Their food, such as eels, is susceptible to pollution whilst otters themselves suffer from road deaths, drowning in eel traps and are affected by excessive disturbance from development and recreational activities.

The water vole, affectionately known as 'Ratty' from the classic book 'Wind in the Willows', is unfortunately not as common today as it once was. The water vole makes its home in river banks, is a competent swimmer, a vegetarian and can be found throughout different water courses, from small ditches to the largest stretches of major rivers. They can also be found in and near urban settings as they are more adaptable than their predators, such as mink. However, they are at most risk from the fragmentation of their habitats and bank management, such as straightening of watercourses.



Wild brown trout need clean, silt-free gravel with a constant flow of cool, well oxygenated and unpolluted water for reproduction, which is why chalk streams provide an ideal habitat. For several months after hatching in the spring, wild trout fry need plant cover on the river edges and bed, away from strong currents. Young trout, or parr, need riffles and runs, where there is plenty of cover in the form of weed or rocks, whereas adult trout need space and deeper water, with plenty of cover in the form of undercut banks and overhanging vegetation. Many things can have a negative impact on their habitat needs: in-stream structures, such as dams, weirs, sluices and culverts; damage by excessive erosion and poaching by livestock. Drainage, dredging works and excessive abstraction can lead to reduced flows, causing a negative change to the ecology of the river.



Crenobia alpina is a flatworm, and looks rather like a small blob of jelly to the untrained eye! Reliant on very cold, but stable water temperatures, these tiny invertebrates thrive in the cold springs and flushes in the Lincolnshire Wolds. Like many species of flatworm they have a complex life cycle, but this can take place within the confines of a single spring.



The species is found in cold calcium-rich water bodies in southern and eastern England as well as alpine streams and cold water lakes at altitude throughout continental Europe.

Water-crowfoot is an aquatic member of the buttercup family, and a number of water-crowfoot species are particularly suited to chalk streams and rivers, including the rare stream water-crowfoot. They often grow in clumps anchored to the bottom of fast and moderate flowing water, and produce vivid white and yellow flowers in late spring and early summer. The presence of water-crowfoot is a strong indication of good water quality and provides cover for spawning fish and invertebrates.



- 6 A garden sprinkler can use a lot of water ...
 - check the weather forecast first - it may rain tomorrow
 - use a watering can instead - it is also more accurate
 - water at dusk so less water evaporates
- 7 Collect rainwater in water butts and buckets and then re-use it in the garden.
- 8 As demand for water is greatest between 5.30pm and 8pm, leave the garden and washing until later.
- 9 Use a bucket and sponge to clean your car instead of a hosepipe or car wash.
- 10 Think about having a free water meter fitted. By measuring how much water you use it is easier to reduce your consumption and you could save money.



In recent times, the demand for water has increased, with household usage continually rising and modern industries using vast quantities in engineering, power generation and irrigation. In the Wolds and surrounding area, water is extracted from the chalk aquifer, which acts like a huge sponge, holding water for hundreds of years and filtering it until it reaches impervious underlying rock. The water then leaves the chalk naturally through springs and streams, or is extracted for use. Regular winter rainfall is needed to recharge the aquifer to keep the chalk streams flowing throughout the year.

Later, man exerted a much stronger influence over water in the area, straightening watercourses, piping supplies and building canals. Streams were diverted to watermills, enabling the natural force of water to be harnessed. They powered threshing and grinding machines to produce corn and pulp materials for the paper making industry. Few mills remain intact now, with most demolished or converted into private homes after the machinery was sold or used in the war effort.

Man has utilised this precious resource for thousands of years, from the first settlements by springs and streams to extraction for use in industry today. Visible from aerial photographs, the remains of many prehistoric, Roman and medieval settlements can be found close to spring lines, streams and rivers. The proximity of fresh water was essential, not only for drinking but also for livestock, crops, fish ponds and for defence, such as moats. Many settlements no longer exist but can sometimes be seen as 'lumps and bumps' in grass fields.

WATER & MAN'S INFLUENCE

WONDERS of the WOLDS

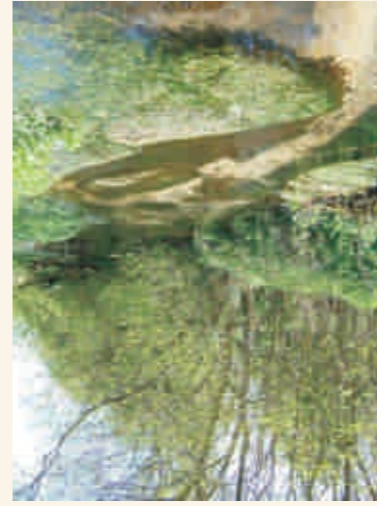
Water of the Lincolnshire Wolds



Produced by the Lincolnshire Wolds Countryside Service and the Lincolnshire Chalk Streams Project

Landscapes for life LINCOLNSHIRE WOLDS One of the AONB Family .org.uk

Chalk stream



At many chalk stream locations landowners and farmers, with assistance from environmental schemes and angling groups, have improved damaged habitats. This has included reducing livestock numbers and erecting bankside fencing. There is good evidence that a diverse habitat within river systems is more efficient at counter-acting effects of pollution.

Chalk streams are internationally rare habitats which support some of our most threatened plants and animals. Chalk streams are characterised by clear water and gravel beds, typically with a stable flow and temperature. They contribute to the beauty and diversity of the Wolds landscape and if you visit a chalk streams, watch out for the darting blue of a kingfisher, the splash of a water vole or the signs of otters. The wild brown trout may be glimpsed amongst the water-crowfoot.

Springs occur either on the edge of the chalk, where it meets the clay or where water rises through the chalk along structural weaknesses in the overlying boulder clay. Blow-wells or artesian springs, such as those at Tenney, occur where water is constantly supplied through natural pressure and requires no mechanical pumping.

Chalk spring



As the name suggests, these springs originate from the chalk aquifer that forms the higher parts of the Lincolnshire Wolds. Permanent chalk springs are nationally important as they produce clear mineral rich waters which are relatively warm, ice-free in winter and cool, oxygen-rich throughout the summer. At the head of the streams, in wooded areas, the pure, cool spring water provides ideal conditions for rare plants, mosses and invertebrate communities.

CHALK SPRINGS & STREAMS

THE LINCOLNSHIRE WOLDS

The Lincolnshire Wolds is a nationally important and cherished landscape. Most of it was designated an Area of Outstanding Natural Beauty (AONB) in 1973. Covering an area of 558 square kilometres or 216 square miles, the AONB contains the highest ground in eastern England between Yorkshire and Kent, rising to over 150m along its western edge. Rolling chalk hills and areas of sandstone and clay underlie this attractive landscape.

The Lincolnshire Wolds has been inhabited since prehistoric times and the appearance of the countryside today has been greatly influenced by past and present agricultural practices.

A Countryside Service helps to protect and enhance the landscape through partnership projects with local landowners, farmers, parish councils, businesses and residents of the Wolds.



Lincolnshire Wolds Countryside Service, Navigation Warehouse, Riverhead Road, Louth, Lincolnshire LN11 0DA 01507 609740 www.lincswolds.org.uk aonb@lincswolds.org.uk @LincsWoldsAONB



If you would like this leaflet in an alternative format please contact us.

PONDS & WETLANDS

INTRODUCTION

The Lincolnshire Wolds has a variety of fresh water within its rolling hillsides and valleys, from the springs that feed our streams and rivers to the natural and man-made ponds, marshes and ditches.

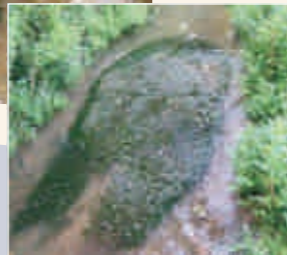
Water is a renewable resource and the amount that is available each year depends upon rainfall. The Lincolnshire Wolds is within the driest area in Britain but water still plays an important role, contributing to valuable wildlife habitats, the location of archaeological and historical settlements and, ultimately, the water we all use in our everyday lives.



Chalk spring



In-stream improvements



Common sedge



Springs, whether permanent or seasonal, have a profound effect on the surrounding soils and the watercourses they supply. They can create wet 'flushes' without obvious spring heads which support typical and rare bog and marshland plants such as ragged robin, water avens, golden saxifrage and birds such as snipe.

Although the Lincolnshire Wolds has a variety of water bodies, many natural ponds have been lost through either being filled in or by mismanagement. The south eastern edge of the Wolds, between Louth and Welton le Marsh, has the greater concentration of ponds as this is where many springs from the chalk aquifer come to the surface. Historically, and certainly before mains water became readily accessible, most villages and many farmsteads would have had their own pond to supply local needs. Many of these would have been constructed by man, utilising rainwater, springs and streams to supply water for pumping to the settlements and even onto the dry chalk farmland for livestock and crops. Old pits, created by gravel and clay extraction for construction and brick manufacture, have been flooded and provide large bodies of water which are excellent for wildlife, especially water fowl.

LINCOLNSHIRE CHALK STREAMS PROJECT

The Lincolnshire Chalk Streams Project brings together a partnership of organisations that are actively working together to conserve and enhance this nationally important resource. The Environment Agency, Lincolnshire Wolds Countryside Service, Natural England, Lincolnshire Wildlife Trust, Anglian Water and the Wild Trout Trust are taking action to ensure that the nature conservation, landscape, community and economic interests are taken into account when working on chalk streams.

