KNOWING YOUR PLACE

Wildlife in Shingle Street

Jeremy Mynott

Shingle Street PUBLISHING

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Barthorp's Creek
RIVER ORE
Orford Ness
North Weir Point
The Sluice
Oxley Dairy
The Beacons
Coastguard Cottages
SHINGLE STREET
Martello Tower
The Battery

Tidal water
Surface water
Intertidal zone
Land
Wooded areas
Road
Building
SSSI boundary

0 metres 200

A SPECIAL PLACE

What defines a place? Is it the geography and landscape, and the way they have affected the history of habitation? Or is it mainly the inhabitants themselves and their stories? Perhaps it depends on who we think of as the inhabitants.

Shingle Street is a tiny hamlet perched precariously, as the name suggests, between land and sea. There are just twenty-nine dwellings and a shifting population of some sixty adults and children – but that's only the population of *Homo sapiens*. We are surrounded here by a much greater number of other life forms – over 1,300 of them – which also give this place its identity and make it special. The reason why Shingle Street is classified as a 'Site of Special Scientific Interest' and is part of an 'Area of Outstanding Natural Beauty' has nothing to do with the beauty or interest of its human residents, alas. It's all down to the wildlife, and this booklet is intended to be both an introduction to and a celebration of this larger local community.

Aerial view of Shingle Street looking north to Orford Ness and the mouth of the River Ore. The Martello tower is visible at the bottom and Oxley Dairy centre left. (photo: Mike Page).

Naturalists have been visiting Shingle Street for years and we recently commissioned a report to systematize their records and conduct a more comprehensive 'biodiversity survey' of the area – a record, as best we could manage, of all the wildlife here: birds, mammals, flowers, butterflies and moths, grasshoppers and crickets, snails, spiders, molluscs, crustaceans ... the lot.

Common blue (photo: Margaret Holland).

The idea for the survey arose when we were thinking about the best ways of protecting Shingle Street from the various risks it faces and were trying to define what it is that makes this wonderful stretch of Suffolk coastline such a significant part of our local and national heritage. The full technical report can be studied on our website at www.shinglestreetsurvey.org.uk, which also has an excellent archive of images of the more striking species recorded and some articles on the birds and flowers in particular.

The present booklet draws heavily on this resource and tries to make the main results more readily available to a larger general readership of residents, visitors and interested organisations. There are check-lists at the end of the booklet for those who want to compare their own records with the survey tallies and these give the full scientific names of all the species involved.

One of the local survey teams, led by Toby Abrehart. (photo: Jeremy Mynott).

Quite apart from any practical or political benefit there is in having compiled this register of the natural wealth of the area, we believe it has been worth doing for its own sake. Britain's wildlife is currently threatened as never before. In the last fifty years we have lost over half of it, mostly through our own agency. That is a staggering statistic, and should be a deeply shocking one. Here, by way of example, are the headline figures for the decline of some much-loved species of UK breeding birds, all deeply embedded in our national culture and all with their own history in Shingle Street: skylarks down nationally by 61%, cuckoos and curlews by 62%, lapwing by 64%, corn bunting by 90%, grey partridge by 91% and turtle dove by 96% (so now almost extinct); and the figures for flowers, butterflies, moths and other insects are as bad or worse.

Above: corn bunting on a song perch. There is a small colony along the sea walls to the south of Shingle Street.. (photo: Jeremy Mynott). Below: curlew, a regular passage bird and winter visitor, now on the red list of nationally endangered birds. (photo: Margaret Holland).

Local inventories of the sort attempted here are a first step in advertising this crisis and raising public consciousness about its significance. 'Let us not underrate the value of a fact', said the great American naturalist, Henry David Thoreau, commenting on a similar survey in his own day ('The Natural History of Massachusetts', 1842), 'it will one day flower in a truth'. The Shingle Street initiative is a tiny contribution towards such larger purposes.

HOMES AND HABITATS

Ecology is the study of creatures in their 'home surroundings' – the interactions between organisms and their environment. One reason why Shingle Street has historically supported such a good diversity and abundance of wildlife is that it includes in a relatively small area a range of interrelated – if constantly evolving, and in some cases threatened – environments. Each of these has its own special features and they combine to make a rich mosaic of habitats. Here are some of the principal ones, followed by sections on the main wildlife communities that depend on them.

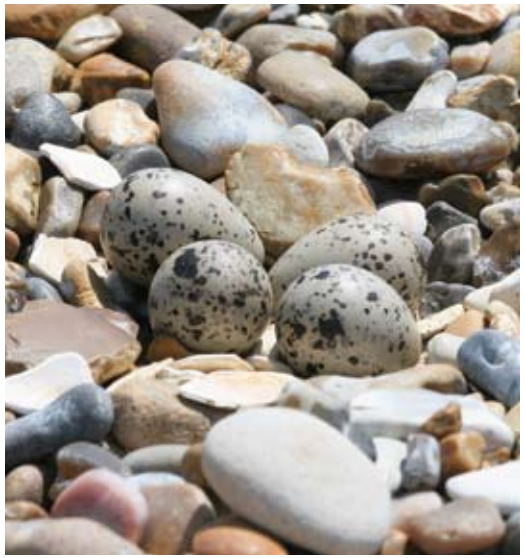
Shingle banks

Shingle Street is probably best known for the bare and vegetated shingle banks from which the place gets its name. There is a long shingle bank extending from opposite North Weir Point (the tip of Orford Ness) south towards Bawdsey and comprising a series of well-marked storm ridges with intervening furrows, whose ages progressively increase with their distance from the sea. In recent years shingle has accumulated in front of the hamlet itself through processes of 'long-shore drift' (though the exact dynamics of this locally are still not fully understood or predictable) and new spits have been formed, with reefs emerging offshore.

This is a harsh and shifting environment, subject also to some human disturbance,

Above: Shell Line leading from the high-water mark to the flagpole of the house of the Coast Guard Captain. (photo: Heike Lowenstein). Right: little tern and chick. (photo: Margaret Holland).

but one that supports a number of specialised plant communities which have evolved various ingenious tactics for finding fresh water and retaining it against the desiccating effects of sun, wind and salt spray. These plants tend to have deep taproots to reach fresh water and their leaves are often pale grey-green (so reflective), waxy or hairy; some lie prostrate, while others have hunched profiles to reduce moisture loss. Birds like little terns and ringed plovers regularly attempt to breed on the shingle banks too, with varying degrees of success, and camouflage their eggs and young to conceal them in this strange, pebbled stonescape.



Ringed plover's eggs on the shingle (photo: Margaret Holland).

Back from the shoreline, the shingle becomes progressively more vegetated and eventually grades into mature shingle grasslands that are colonised by a number of rare vetches and clovers.

Saline lagoons

Within and behind these shingle banks saline lagoons are periodically formed, separated from the sea either partially or completely. The 'percolation lagoons' that are refreshed at high tides tend to have healthier ecosystems than the more isolated ones, which eventually stagnate. Both may be ephemeral but they have in the past supported a number of unusual anemones and other invertebrates, as well as having their own vegetation communities like spiral tasselweed. A colony of the rare extended sedge *Carex extensa* (for which this is the only Suffolk site) grows round the northern lagoons.

Dykes, drains and ditches

The survey area is bounded and intersected by water courses that support various aquatic communities. The only freshwater channel (maintained by the Inland Drainage Board) is on the western edge of the area and otters were discovered here. This IDB channel is fed from the dykes in the agricultural land and discharges through a sluice at the northern edge of the site into Barthorp's Creek. The other channels are all brackish to some degree and have limited flora, but they contain a number of interesting aquatic beetles and other invertebrates. Birds, too, use this habitat both for feeding and for nesting in the bordering phragmites reed and sea club rush.

Top: saline lagoon (photo: Jason Horncastle).
Middle: Suffolk's only colony of Carex extensa (photo: Jeremy Mynott).
Bottom: Phragmites reed along a dyke (photo: Catherine Lindsay-Davies).

Saltmarsh

There are important areas of saltmarsh in different stages of erosion and development. One of the richest is adjacent to Barthorp's Creek and is ablaze in summer with drifts of sea lavender and thrift. The small saltmarsh pools in these areas also contain some very interesting invertebrate communities, and a good variety of wading birds feed in the adjacent mudflats.

Top left: sea lavender on the saltmarsh (photo: Laurie Forsyth).
Above left: rough grassland looking north to the Martello tower (photo: Catherine Lindsay-Davies).
Above right: short-eared owl hunting (photo: Bill Baston).

Grasslands

Stretches of acid grasslands grow either side of the one road leading through Shingle Street west of the houses. The dominant plant species here are red fescue and sheep's fescue. These areas and the rough grassland south of the Martello tower are important habitats for reptiles like common lizards and also for small mammals, which in turn attract hunting raptors like barn and short-eared owls. The larger areas of grazing pastures and hayfields cover some 82 hectares but are predominantly 'improved' agricultural lands, technically 'mesotrophic grasslands', which are poor in botanical terms, though in season they provide feeding areas for curlew and lapwing flocks and sometimes grazing areas for geese.

Woodland scrub

Willow warbler in the hand, a regular passage migrant. (photo: Jeremy Mynott).

There are patches of woodland scrub, mainly blackthorn and hawthorn, along the roadside verges and the twin banks leading back from the sea to the Sluice. These and the thickets of brambles around them provide important feeding, breeding and refuge sites for a whole chain of life from insects, butterflies and moths, to small mammals and birds, though some recent clearances to introduce sheep have degraded this habitat to some extent.

There are other small trees and bushes in the allotment section and, more especially, in the adjoining private garden whose dense vegetation regularly attracts an extraordinary variety of migrant birds, as well as the occasional outright vagrant. The 'Bird Ringing Report' on the website analyses the birds trapped and ringed here over a ten year period.

Open areas

Greenland wheatear, a long-distance migrant from Africa to Greenland and the far north (photo: James Kennerley).

There are then various open areas, like the two car park sites where disturbance and trampling has its effect on sensitive vegetation, though even here there can be welcome surprises in what can seem the most unpromising habitats. Along the concrete track to the north of the site, for example, bulbous meadow grass was recorded growing in the cracks in the concrete, along with several rare trefoils, in particular suffocated clover; and in the 'foreign' soil imported to repair a sea-wall breach in the Great Flood of 1953 and dumped to the side of the track, a small colony of bee orchids flourishes in most years, along with field scabious, knapweed and hoary plantain. These tracks to the north and south and the vegetated areas adjoining them are also a good locations for migrant wheatears and other passerines like finches, larks and pipits.

LANDSCAPES AND SOUNDSCAPES

These habitats can all be experienced and described in other ways too – through different seasons, times of day and weathers, each of which expresses different aspects of the landscape and its wildlife. And beyond these cyclical visual variations, there are the other dimensions of sound and smell, which complement the visual landscape. The soundscape in particular is distinctive and revealing, since many birds are more easily identified at a distance by sound than sight. Against the familiar background noise of waves and shifting shingle there are usually birds in the air calling – gulls, terns, waders or wildfowl; in spring and summer there is a tremendous dawn chorus in the bushes and reed-beds; and over the grasslands the songs of the Shingle Street skylarks are a joyful if poignant reminder of what we have already lost in many other parts of Britain.

Those under sixty, whose ears have not yet lost the higher frequencies, may also enjoy the cheerful chirruping of our crickets and grasshoppers along the sea walls, including the strange mating calls of the Roesel's bush cricket, sounding like a buzzing overhead electricity cable. One observer with keen hearing even identified some harvest mice deep in the reedbeds just from their calls. So, it pays to listen as well as look.

Above left: skylark, still common in Shingle Street but declining fast nationally (photo: Margaret Holland).
Left: Roesel's bush-cricket (photo: Toby Abrehart).

WHO LIVES HERE?

Here, then, are the major groupings of the wildlife so far recorded in Shingle Street.

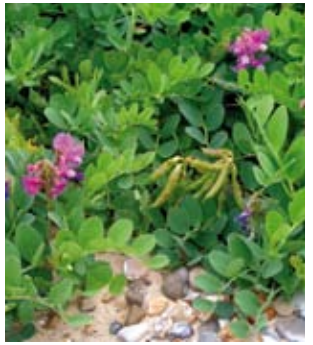
Flowering plants

Many of the 314 species of flowering plants listed at the end of the booklet are specialists, finely adapted to the extreme environments here. The shingle banks support nationally important communities of sea kale, which in May gives an amazing, bridal display of foaming white flower-heads all the way along the shore from Shingle Street to Bawdsey East Lane. Other important shingle specialists include orache (nearest the tideline), sea-pea, sea beet and yellow-horned poppy (all in flourishing populations).

Orache, a pioneer plant of the shingle ridges nearest to the sea (photo: Laurie Forsyth).

Hoary mullein.
Left: in winter mist (photo: Catherine Lindsay-Davies).
Right: in flower (photo: Laurie Forsyth).

Behind the houses, in the grasslands grazed by rabbits and compacted by human foot-traffic, rare coastal specialities like yellow vetch, hoary cinquefoil and a number of tiny trefoils occur in significant numbers, unseen by most visitors.



More evident, indeed spectacular, are the displays of such locally common species such as sea lavender, thrift, sea campion, biting stonecrop, golden samphire and viper's bugloss, which combine in summer to offer a glorious palette of red, pink, white, yellow, purple and blue. Red and white valerian flourishes everywhere in

Top, from left: sea pea, yellow horned poppy (photos: Laurie Forsyth); naturalists at work: Peter Marren inspecting a rare clover and Michael McCarthy supervising (photo: Jeremy Mynott).
Above left: sea campion and sea kale. (photo: Bob Gibbons).
Above right:: sea beet (photo: Laurie Forsyth).

rough ground round the houses, as do the dramatic stands of the hoary mullein, a species native to East Anglia in its wild form and unmistakeable with its yellow branching candelabras.

In later summer there are also swathes of common ragwort, reminding us that a 'weed' is a cultural not a botanical classification. Sporadic efforts are made to eradicate it because the juices from its leaves can be poisonous to some livestock. But the attempt is hopeless: each plant can produce about ten thousand airborne seeds, there are tens of thousands of plants on the stretch of land between Shingle Street and Bawdsey, and the prevailing wind is from the west … Anyway, opinions differ. The poet John Clare celebrated its 'splendid hues' of russet, yellow and gold and naturalists would note that ragwort sustains a rich insect population, including the hordes of striped black-and-yellow caterpillars of the cinnabar moth, which annually strip its leaves and so provide a measure of natural control.

The Ragwort

Ragwort, thou humble flower with tattered leaves
I love to see thee come & litter gold,
What time the summer binds her russet sheaves;
Decking rude spots in beauties manifold,
That without thee were dreary to behold,
Sunburnt and bare-- the meadow bank, the baulk
That leads a wagon-way through mellow fields,
Rich with the tints that harvest's plenty yields,
Browns of all hues; and everywhere I walk
Thy waste of shining blossoms richly shields
The sun tanned sward in splendid hues that burn
So bright & glaring that the very light
Of the rich sunshine doth to paleness turn
& seems but very shadows in thy sight.

John Clare (1793-1864)

Lichens and mosses

There have also been twenty-eight species of lichen and thirty-six species of mosses recorded at Shingle Street, of which the yellow crisp-moss is an exclusively maritime species, with Shingle Street one of its main Suffolk sites.

Birds

Because of its location on the east coast Shingle Street attracts a large number of migrant birds – and birdwatchers, so the birds are very well documented and an impressive total of 222 species has been recorded here over the years. That number includes many regular passage migrants in spring and (more especially) autumn, as warblers, flycatchers, redstarts, pipits, wheatears and other passerines move in large numbers to and from their breeding grounds further north (in Britain) or east (in Europe). Caught up in these movements are some scarcer but still annual migrants like wrynecks, firecrests and ring ouzels, together with a few real rarities, which over the years have included lesser grey shrike (a southern European

Top right: lesser grey shrike, a rarity from southern Europe. Centre: wryneck, a small woodpecker, which is a scarce annual migrant from Europe, usually in early autumn (photos: James Kennerley). Snow bunting: winter visitors along the shingle banks (photo: Bill Baston).

This page, above: pied flycatcher on passage (photo: James Kennerley).
Below: barn owl, a local resident (photo: Margaret Holland).

Facing page, top: juvenile cuckoo (photo: James Kennerley).
Centre: kingfisher at the Sluice (photo: Bill Baston).
Bottom: little owl, a local resident (photo: Margaret Holland).

species, which favoured someone's washing-line as a hunting-perch for a few days in July 2006) and Radde's, dusky and yellow-browed warblers (all of which come from Siberia).

There are also regular winter visitors like short-eared owls and hen harriers, which hunt for voles over the rough pastures; small flocks of snow buntings forage on the shingle ridges; curlew and lapwing on the fields and saltmarsh (both now red-listed species); and winter thrushes (fieldfares and redwings) feed on the berried bushes on the banks and sea-walls.

Many important species breed here, or very near here: stonechats, yellow wagtails, barn and little owl, several reed-bed species including reed, sedge,

Cetti's and sometimes grasshopper warblers; we still have corn bunting and cuckoo breeding, both of which are declining fast nationally, and occasionally little terns (though these are very vulnerable to human disturbance); but sadly we have now lost grey partridge, turtle dove, tree sparrow and spotted flycatcher – a dire indication of the pace and direction of change in bird populations generally. On a more positive note, however, avocets bred successfully in the lagoons to the south in 2015 and marsh harriers bred once recently.

There are articles on the website describing in more detail the typical arrival dates of the common migrants, a summary of ringing records over a ten year period and the local status of over 200 bird species in Shingle Street.

Mammals

Twenty-three species of terrestrial mammals have been recorded in Shingle Street. A team of residents joined in the organised survey of small mammals in 2015 and conducted live trapping under instruction. This revealed surprisingly large numbers of pygmy shrew in the reedbeds, and the presence of harvest mice, as well as the more predictable occurrence of the commoner mouse and vole species in the rough grasslands.

Several other mammal species present are of conservation significance. Water voles have been recorded and there are a small number of active burrows on the edge of a dyke near the main IDB drain. Brown hare is happily common in Shingle Street and can be seen in all the open fields, with a maximum of

This page, above: pygmy shrew (photo: Jeremy Mynott).
Below: badger (photo: Margaret Holland).

Facing page, top left: harvest mouse.
Top right: brown hare, still common here.
Bottom: otter, a welcome discovery (all photos: Margaret Holland).

seven seen together in March 2010. Badgers, too, are now common, with at least three active sets in the area; but herein lies a conservation dilemma, since badgers are almost certainly responsible for the scarcity here of the hedgehog, which they predate. Should we control the numbers of one protected species to support the other, and if so would that be on sentimental or ecological grounds?

The most exciting mammal discovery, perhaps, was that otters were regularly using the area and a pair was seen playing in the IDB drain in April 2015. An artificial holt was installed nearby, though that had to be redesigned after badgers promptly occupied it. We shall watch this space eagerly.

Marine mammals

Above: stranded fin whale (photo: Catherine Lindsay-Davies). Below: grey seal on spit, with some unwelcome attachments (photo: Jason Horncastle).

All marine mammals are protected species so every record is of significance. Grey seals feed regularly in the mouth of the Ore and they can often be seen hauled out on the emergent shingle banks and spits, where in 2014 numbers built up over the summer to a maximum of about twenty. Common seals are more occasionally seen offshore, though eleven were recorded on 5 March 2013. There is only one reported record of harbour porpoise, but they are frequently seen off Orford Ness and it can be assumed that they pass off Shingle Street too.

The most spectacular, if distressing, record of a cetacean, was of the twenty-foot, juvenile fin whale *Balaenoptera physalus* that became stranded and died on the beach on 30 September 2012. This is an endangered species, distinguished by its prominent dorsal fin (hence the common name) and its frequent spouting (hence the scientific one – *physalus* comes from the Greek meaning 'blowing'). Its slender, streamlined shape gives it great speed through the water (hence its third designation, the nickname 'greyhound of the sea').

Reptiles and amphibians

Above: adder. Below: painted lady, a continental migrant, sometimes in spectacular numbers (both photos: Margaret Holland).

There are relatively few reports of reptiles in the area. A survey was conducted by a team of residents in 2015, who placed a large number of 'reptile mats' in promising locations to offer these cold-blooded creatures shelter and warmth; but these yielded mainly records just of common lizards, which are not infrequently seen around (and sometimes in) the houses. Adder, grass snake and slow-worm were all recorded, but only as single sightings and these may be under-reported, or perhaps just less well represented in the area than expected.

It is surprising, too, how few records there are for common frog and common toad, given the extensive amount of apparently suitable habitat. Increased salinity in the dykes and drains may be a factor here, but it is also possible they have been thought too 'common' to be worth reporting in the past. Some more small garden ponds might revive their fortunes and attract a few newts too.

Butterflies

Britain has just fifty-nine different species of butterfly and twenty-six of them have been recorded at Shingle Street. Butterflies are among the most conspicuous and widely loved groups of all our wildlife but they have suffered a precipitous decline in the post-war years. Three species have become extinct in Britain, several more are critically endangered, and it is estimated that in the last forty years nearly three quarters of butterfly species have declined or disappeared over much of the country. These are even worse figures than the comparable ones for plants and birds.

Seven of the species recorded at Shingle Street are of special conservation concern. The delicate holly blue occurs most years but probably isn't always distinguished from the common blue (as its name suggests, a regular annual presence). The small heath can be found in good numbers from May onwards, flitting about in the short turf grasslands behind the houses; while the larger and cryptically camouflaged grayling is best seen nectaring on buddleia and other flowers later in the summer, though graylings close their wings immediately on settling so can be hard to pick up when at rest; and we are fortunate to have a small if fluctuating colony of the scarce wall brown. The beautiful clouded yellow, which is a continental migrant in most years, is

Above: wall brown (photo: Margaret Holland). Below: clouded yellow, a continental migrant and local breeder (photo: Toby Abrehart).

also now breeding locally and can often be seen on the sea walls between Shingle Street and Bawdsey in late summer.

There are then two very rare species that have been recorded here just once: the charismatic swallowtail breeds in just a few places in Norfolk, but occurs every few years in Suffolk as a continental migrant (recorded here in 2000), as does the large tortoiseshell (2007). A much commoner, annual migrant is the attractive painted lady, which in some years arrives in huge numbers, most spectacularly so in summer 2009 when an estimated ten million reached the UK and they poured through Shingle Street in streams from across the sea.

Left: elephant hawkmoth (photo: Jeremy Mynott). Right: hummingbird hawkmoth (photo: Toby Abrehart).

Moths

Moths are generally less well known (and less admired) than our lovely day-flying butterflies, but they are actually far more numerous and can be equally beautiful, often with extraordinarily subtle markings. Thanks to regular moth-trapping over the years by local naturalist Nick Mason and others, 379 species of moths have been recorded here, the most diverse group of any in this survey. Many of these are nationally rare species, some so much so that they only have scientific names in Latin; but other unusual ones rejoice in such splendid English titles as beaded chestnut, dusky brocade, garden tiger, latticed heath, marbled clover, ground lackey, white-mantled wainscot, powdered quaker and feathered gothic. More regular visitors include species in the

charismatic hawk-moth family (sphingidae), such as the poplar, elephant and eyed hawkmoths.

Many of the less common ones are continental migrants, attracted to Shingle Street by it location on the East coast, as are many of our migrant birds and butterflies. An exotic-looking but regular migrant is another hawkmoth, the unmistakeable hummingbird hawkmoth, quite often seen round the gardens by day in summer, feeding on viper's bugloss, buddleia and red valerian; this species is regarded in some folklores as a harbinger of good news, and a small party was seen flying over the English Channel from France to England on D-Day in 1944!

Grasshoppers

Nine species of grasshopper have so far been recorded here, though there are no doubt more. Roesel's bush cricket is common on the sea walls and in the longer grasslands, and the much rarer grey bush cricket was also recorded in the sea kale on the beach, just east of the coastguard's cottages – this species can be found around the Orford lighthouse and may well be more widely present in Shingle Street too.

Other records of note include the slender ground hopper, found in a damp patch near the tennis courts, and two species of cone-heads – the short-winged and the long-winged – the former in the saltmarsh and the latter on the upper tide-line and along the sea walls, together with the lesser marsh grasshopper.

The scientific name for this order of insects, which has only thirty species in the British Isles, is *Orthoptera*, meaning 'stiff-winged', though some entomologists would prefer to call them *Saltatoria* ('jumpers'), which is more descriptive and accords more happily with their public perception too.

Dragonflies

This is a well-studied group here and fifteen of Britain's forty resident species have been recorded since 1989. The group includes both 'true dragonflies' and the smaller damselflies, all of which are harmless to humans, feeding mainly on mosquitoes and small flies over the dykes and pools. They have exceptionally keen sight for this purpose, aided by their huge compound eyes, which may have up to 30,000 facets and are sensitive to the slightest movement of their prey. The order as a whole is called *Odonata*, meaning 'toothed', which reflects their carnivorous diet.

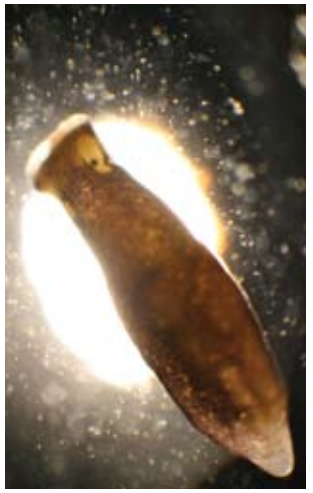
The more unusual ones noted here include the small red-eyed damselfly (first recorded in Suffolk in 2001), the banded demoiselle and the hairy dragonfly; more regular are the common darter and the blue-tailed damselfly, while there was one astonishing historical record of 2210 migrant hawkers on 15 August 2006, a phenomenal influx.

Facing page: grey bush cricket on sea kale leaf (photo: Toby Abrehart).
This page, left: Blue-tailed damselfly.
Right: common darter (photos: Toby Abrehart).

Molluscs

Molluscs comprise a huge and very varied division of invertebrate animals, found on land, in freshwater and in the sea (where they constitute about a quarter of all marine organisms). The name comes ultimately from the Greek meaning 'soft things' and the group includes such different creatures as snails, slugs, oysters, mussels, scallops and octopuses.

Fifty-eight molluscs have been recorded in Shingle Street (about a third of the Suffolk total), including twenty-six species noted in a special terrestrial mollusc survey conducted in 2015. This focussed on one species of great conservation importance, the narrow-mouthed whorl snail *Vertigo angustior*. This tiny (2mm high) species is an instructive lesson in the relativity of the concept of 'rarity'. It is on various Red Data lists of highly vulnerable species and was only first recorded in Shingle Street in 2003, making this an important southern extension of its known range at the time. But in a systematic sampling of suitable sea-wall habitats covering 5000m^2 they were found to have a density of 800m^2, giving a guesstimate of over 4 million present on 23 July 2015, the highest anywhere in Suffolk in 2015, which will in turn be the highest in the UK that year.



Left: narrow-mouthed whorl snail.
Centre: the sea slug, Limapontia depressa, a Suffolk rarity.
Right: lagoon cockle
(photos: Toby Abrehart).

Various rare coastal lagoon species were also recorded, including the two-toothed white snail, the mouse-eared snail and, in the course of a botanical survey of some saltmarsh pools, the second-ever Suffolk record of the sea slug *Limapontia depressa* – a reminder that naturalists often find one remarkable thing when looking for another.

Spiders

Spiders are in one sense familiar as a class and well known to most people, exciting a whole spectrum of responses from extreme fear (arachnophobia) to simple wonderment at their silk-spinning and architectural skills. They accordingly have an ambiguous cultural status as symbols both of creativity and danger. What is generally less well known is their sheer ubiquity and variety. They span the globe, occurring in every continent except Antarctica, and it may be a surprise for residents of Shingle Street to learn that they share the place with fifty-nine different species of these eight-legged arthropods (that is, invertebrates with jointed segments), none of them remotely dangerous to humans. Only two of those recorded locally are of particular conservation concern, however: the splendidly named whelk shell jumper (rare on the East coast) and a shingle specialist rare enough only to have a Latin name, *Trichoncus affinis*, and only distinguishable from closely related spiders in the same genus by a close inspection of its genitalia – so there's a challenge.

Spiders are arachnids, a large class of eight-legged arthropods that differ from insects in having no antennae. Other kinds of arachnids recorded here are harvestmen (which include the familiar daddy-long-legs) and false scorpions, but both these groups need more investigation.

Aquatic invertebrates

One group of invertebrates that was fully studied in 2015 were the aquatic invertebrates in the dykes and lagoons, which included many species of conservation concern. Among these were forty-eight kinds of aquatic beetle (including the grandly named *Hygrotus parallelogrammus*, a small black and yellow water beetle, and several other notable species); two bivalves (a freshwater clam *Musculium lacustre* and the duck mussel, the latter being found in some numbers on the banks, probably predated by otters or herons); and several gastropods (including a tiny water snail *Hydrobia neglecta*, found in huge quantities in a saline lagoon). All these are fully documented in the major survey report and are an indication of the rich diversity and welcome surprises that can be revealed by systematic study.

SUMMARY

Here are the overall statistics from this rapid overview (in descending numerical order not taxonomic sequence):

Species recorded in Shingle Street, 1953-2015

Moths 379
Flowering plants 314
Birds 222
Spiders 59
Molluscs 58
Beetles 48
Mosses 36
True bugs (Hemiptera) 32
Lichens 28
Butterflies 26
Mammals, terrestrial 23
Dragonflies and damselflies 15
Crustaceans 15
Bees, ants, wasps (Hymenoptera) 15
Grasshoppers and crickets 9
Mammals, marine 4
Reptiles 4
True flies (Diptera) 4
Leech 3
Algae 2
Amphibians 2
Harvestmen 2
Others 5
Grand total 1,305 (plus one hominid)

Little tern in flight (photo: Margaret Holland).

Work still to do

This roll call is impressive for such a small hamlet, but it is still a very incomplete picture, with many gaps that for reasons of time or expertise have yet to receive proper attention. Terrestrial beetles are a case in point. This group is so numerous worldwide that the famous evolutionary biologist J.B.S. Haldane was moved to remark, when asked what could be inferred about the mind of the Creator from the works of His Creation, that God displayed 'an inordinate fondness for beetles'. There are some 4,000 beetle species in Britain and many of them are around us here, but no one has yet recorded them.

That is probably the largest gap in this inventory of species, but there are others, too. Bats, bugs, bees, algae and fungi in particular would all merit further study. The overall species count here could easily be over 2,000, if these gaps were all filled. Please help with this if you can and register your records on the website. More importantly, please consider establishing similar surveys of your own local patch. If we could establish a network of such studies in coastal Suffolk we might have a string of precious beads with which to attract much greater attention and support.

Why does all this matter?

Numbers alone are just indicators, however. All these species have their interest and importance but, to paraphrase George Orwell, not all species are equal. The one that is 'more equal than others' here is the hominid at the end of the table.

Scientists now believe that we may be facing another 'great extinction' in the long history of the planet, and one caused for the first time not by external factors but by the behaviour of just one dominant species, a puny but inventive creature calling itself *Homo sapiens*. We may have entered a new geological age, dubbed the Anthropocene, where this one species has evolved to the point that it is master of the planet, with the power of life and death over all its other inhabitants, indeed a power sufficient to destroy the planet itself if used unwisely. But despite our eponym, *sapientia* is in short supply as we progressively degrade and destroy swathes of natural habitat for 'development'; pollute the atmosphere, the land and the oceans; and accelerate global warming to the point of red alert. The logical but ironic conclusion is that the only species capable of understanding all this will also be the one to have caused it. Surveys like the present one are tiny cries of protest, hoping to inspire a sense of wonder and respect for the local inhabitants with whom we share the natural world.

Common names are given first, followed by the scientific names. In a few cases where there is, sadly, no recognized common name in English either a more generic descriptive English name has been adopted and is given in lower-case (e.g. water beetle) or the Latin name alone is listed. Species in square brackets are either subspecies (e.g. blue-headed wagtail) or probably not genuinely wild species (e.g. wood duck).

TERRESTRIAL MAMMALS	
Badger	*Meles meles*
Hedgehog	*Erinaceus europaeus*
Common shrew	*Sorex araneus*
Pygmy shrew	*Sorex minutus*
Mole	*Talpa europea*
Pipistrelle bat	*Pipistrellus pipistrellus*
Red fox	*Vulpes vulpes*
Stoat	*Mustela erminea*
Weasel	*Mustela nivalis*
Otter	*Lutra lutra*
Roe deer	*Capreolus capreolus*
Muntjac	*Muntiacus reevesi*
Chinese water deer	*Hydropotes inermis*
Grey squirrel	*Sciurus carolinensis*
Bank vole	*Myodes glareolus*
Water vole	*Arvicola amphibius*
Field vole	*Microtus agrestis*
Harvest mouse	*Micromys minutus*
Wood mouse	*Apodemus sylvaticus*
House mouse	*Mus musculus*
Brown rat	*Rattus norvegicus*
Rabbit	*Oryctolagus cuniculus*
Brown hare	*Lepus europaeus*

MARINE MAMMALS	
Fin whale	*Balaenoptera physalus*
Grey seal	*Halichoerus grypus*
Common seal	*Phoca vitulina*
Harbour/common porpoise	*Phocoena phocoena*

BIRDS	
Red-throated diver	*Gavia stellata*
Black- throated diver	*Gavia arctica*
Great northern diver	*Gavia immer*
Little grebe	*Tachybatus ruficollis*
Great crested grebe	*Podiceps cristatus*
Red-necked grebe	*Podiceps grisegena*
Slavonian grebe	*Podiceps auritus*
Fulmar	*Fulmarus glacialis*
Gannet	*Morus bassanus*
Sooty shearwater	*Puffinus griseus*
Manx shearwater	*Puffinus puffinus*
Cormorant	*Phalacrocorax carbo*
Shag	*Phalacrocorax aristotelis*
Grey heron	*Ardea cinerea*
Purple heron	*Ardea purpurea*
Little egret	*Egretta garzetta*
Spoonbill	*Platalea leucorodia*
Glossy ibis	*Plegadis falcinellus*
[Sacred ibis]	*[Threskiornis aethiopicus]*
Mute swan	*Cygnus olor*
Whooper swan	*Cygnus cygnus*
Bewick's swan	*Cygnus columbianus*
Pink-footed goose	*Anser brachyrhynchus*
White- fronted goose	*Anser albifrons*
Bean goose	*Anser fabalis*
Greylag goose	*Anser anser*
Canada goose	*Branta canadensis*
Barnacle goose	*Branta leucopsis*
Dark-bellied brent goose	*Branta bernicla*
Pale-bellied brent goose	*Branta hrota*
[Ruddy shelduck]	*[Tadorna ferrugina]*
Egyptian goose	*Alopochen aegyptiacus*
Shelduck	*Tadorna tadorna*
Wigeon	*Anas penelope*
Gadwall	*Anas strepera*
Teal	*Anas crecca*
Garganey	*Anas querquedula*
Mallard	*Anas platyrhynchos*
[Wood duck]	*[Aix sponsa]*
Shoveler	*Anas clypeata*
Pochard	*Aythya ferina*
Tufted duck	*Aythya fuligula*
Scaup	*Aythya marila*
[Red-crested pochard]	*[Netta rufina]*
Common scoter	*Melanitta nigra*
Velvet scoter	*Melainitta fusca*
Long-tailed duck	*Clangula hyemalis*
Goldeneye	*Bucephala clangula*
Eider	*Somateria mollissima*
Red-breasted merganser	*Mergus serrator*
Ruddy duck	*Oxyura jamaicensis*
Honey buzzard	*Pernis apivorus*
Common buzzard	*Buteo buteo*
Rough-legged buzzard	*Buteo lagopus*
Red kite	*Milvus milvus*
Marsh harrier	*Circus aeruginosus*
Hen harrier	*Circus cyaneus*
Montagu's harrier	*Circus pygargus*

Sparrowhawk	*Accipiter nisus*
Osprey	*Pandion haliaetus*
Kestrel	*Falco tinnunculus*
Peregrine	*Falco peregrinus*
Merlin	*Falco columbarius*
Hobby	*Falco subbuteo*
Red-legged partridge	*Alectoris rufa*
Grey partridge	*Perdix perdix*
Quail	*Coturnix coturnix*
Pheasant	*Phasianus colchicus*
Water rail	*Rallus aquaticus*
Moorhen	*Gallinula chloropus*
Coot	*Fulica atra*
Oystercatcher	*Haemotopus ostralegus*
Avocet	*Recurvirostra avosetta*
Ringed plover	*Charadrius hiaticula*
Little ringed plover	*Charadrius dubius*
Golden plover	*Pluvialis apricaria*
Grey plover	*Pluvialis squatarola*
Lapwing	*Vanellus vanellus*
Knot	*Calidris canutus*
Dunlin	*Calidris alpina*
Little stint	*Calidris minuta*
Sanderling	*Calidris alba*
Common snipe	*Gallinago gallinago*
Jack snipe	*Lymnocryptes minimus*
Woodcock	*Scolopax rusticola*
Black-tailed godwit	*Limosa limosa*
Bar-tailed godwit	*Limosa lapponica*
Ruff	*Philomachus pugnax*
Whimbrel	*Numenius phaeopus*
Curlew	*Numenius arquata*
Redshank	*Tringa erythropus*
Greenshank	*Tringa nebularia*
Green sandpiper	*Tringa ochropus*
Wood sandpiper	*Tringa glareola*
Common sandpiper	*Actitis hypoleucos*
Turnstone	*Arenaria interpres*
Great skua	*Stercorarius skua*
Arctic skua	*Stercorarius parasiticus*
Long-tailed skua	*Stercorarius longicaudus*
Mediterranean gull	*Larus melanocephalus*
Little gull	*Larus minutus*
Black-headed gull	*Chroicocephalus ridibundus*
Common gull	*Larus canus*
Lesser black-backed gull	*Larus fuscus*
Herring gull	*Larus argentatus*
Great black-backed gull	*Larus marinus*
Sandwich tern	*Sterna sandvicensis*
Common tern	*Sterna hirundo*
Arctic tern	*Sterna paradisaea*
Little tern	*Sterna albifrons*
Black tern	*Chlidonias niger*
Guillemot	*Uria aalge*
Razorbill	*Alca torda*
Little auk	*Alle alle*
Stock dove	*Columba oenas*
Feral pigeon	*Columba livia*
Wood pigeon	*Columba palumbus*
Turtle dove	*Streptopelia turtur*
Collared dove	*Streptopelia decaocto*
Ring-necked parakeet	*Psittacula krameri*
Cuckoo	*Cuculus canorus*
Barn owl	*Tyto alba*
Little owl	*Athene noctua*
Tawny owl	*Strix aluco*
Short-eared owl	*Asio flammeus*
Long-eared owl	*Asio otus*
Nightjar	*Caprimulgus europaeus*
Swift	*Apus apus*
European bee-eater	*Merops apiaster*
Hoopoe	*Upupa epops*
Kingfisher	*Alcedo atthis*
Wryneck	*Jynx torquilla*
Green woodpecker	*Picus viridis*
Great spotted woodpecker	*Dendrocopos major*
Skylark	*Alauda arvensis*
Shore lark	*Eremophila alpestris*
Sand martin	*Riparia riparia*
Swallow	*Hirundo rustica*
House martin	*Delichon urbica*
Richard's pipit	*Anthus richardi*
Meadow pipit	*Anthus pratensis*
Tree pipit	*Anthus trivialis*
Rock pipit	*Anthus petrosus*
Water pipit	*Anthus spinoletta*
Yellow wagtail	*Motacilla flava*
[Blue-headed wagtail]	*[Motacilla f. flava]*
Grey wagtail	*Motacilla cinerea*
Pied wagtail	*Motacilla alba*
[White wagtail]	*[Motacilla a. alba]*
Waxwing	*Bombycilla garrulous*
Wren	*Troglodytes troglodytes*
Dunnock	*Prunella modularis*
Robin	*Erithacus rubecula*
Nightingale	*Luscinia megarhynchos*
Bluethroat	*Luscinia svecica*
Common redstart	*Phoenicurus phoenicurus*
Black redstart	*Phoenicurus ochruros*
Whinchat	*Saxicola rubetra*
Stonechat	*Saxicola torquata*
Northern wheatear	*Oenanthe oenanthe*
[Greenland wheatear]	*[Oenanthe o. leucorhoa]*
Pied wheatear	*Oenanthe pleschanka*
Ring ouzel	*Turdus torquata*
Blackbird	*Turdus merula*
Song thrush	*Turdus philomelos*
Fieldfare	*Turdus pilaris*
Redwing	*Turdus iliacus*
Mistle thrush	*Turdus viscivorus*

Cetti's warbler	*Cettia cetti*
Grasshopper warbler	*Locustella naevia*
Sedge warbler	*Acrocephalus schoenobaenus*
Reed warbler	*Acrocephalus scirpaceus*
Lesser whitethroat	*Sylvia curruca*
Common whitethroat	*Sylvia communis*
Barred warbler	*Sylvia nisoria*
Dartford warbler	*Sylvia undata*
Icterine warbler	*Hippolais icterina*
Garden warbler	*Sylvia borin*
Blackcap	*Sylvia atricapilla*
Chiffchaff	*Phylloscopus collybita*
Willow warbler	*Phylloscopus trochilus*
Yellow- browed warbler	*Phylloscopus inornatus*
Radde's warbler	*Phylloscopus schwarzi*
Dusky warbler	*Phylloscopus fuscatus*
Goldcrest	*Regulus regulus*
Firecrest	*Regulus ignicapillus*
Spotted flycatcher	*Muscicapa striata*
Red-breasted flycatcher	*Ficedula parva*
Pied flycatcher	*Ficedula hypoleuca*
Bearded tit	*Panurus biarmicus*
Long -tailed tit	*Aegithalos caudatus*
Blue tit	*Parus caeruleus*
Great tit	*Parus major*
Coal tit	*Parus ater*
Red-backed shrike	*Lanius collurio*
Lesser grey shrike	*Lanius minor*
Great grey shrike	*Lanius excubitor*
Magpie	*Pica pica*
Jay	*Garrulus glandiarius*
Jackdaw	*Corvus monedula*
Rook	*Corvus frugilegus*
Carrion crow	*Corvus corone*
Raven	*Corvus corax*
Starling	*Sturnus vulgaris*
House sparrow	*Passer domesticus*
Tree sparrow	*Passer montanus*
Chaffinch	*Fringilla coelebs*
Brambling	*Fringilla montifringilla*
Greenfinch	*Carduelis chloris*
Bullfinch	*Pyrrhula pyrrhula*
Goldfinch	*Carduelis carduelis*
Siskin	*Carduelis spinus*
Linnet	*Carduelis cannabis*
Twite	*Carduellis flavirostris*
Common crossbill	*Loxia curvirostra*
Lesser redpoll	*Carduelis cabaret*
Common redpoll	*Carduelis flammea*
Snow bunting	*Plectophenax nivalis*
Lapland bunting	*Calcarius lapponicus*
Reed bunting	*Emberiza schoeniclus*
Yellowhammer	*Emberiza citrinella*
Corn bunting	*Milaria calandra*

REPTILES

Common lizard	*Zootoca vivipara*
Slow-worm	*Anguis fragilis*
Adder	*Vipera berus*
Grass snake	*Natrix natrix*

AMPHIBIANS

Common frog	*Rana temporaria*
Common toad	*Bufo bufo*

BUTTERFLIES

Small skipper	*Thymelicus sylvestris*
Essex skipper	*Thymelicus lineola*
Large skipper	*Ochlodes sylvanus*
Swallowtail	*Papilio machaon*
Clouded yellow	*Colias croceus*
Large white	*Pieris brassicae*
Small white	*Pieris rapae*
Green-veined white	*Pieris napi*
Orange-tip	*Anthocharis cardamines*
Small copper	*Lycaena phlaeas*
Brown argus	*Aricia agestis*
Common blue	*Polyommatus icarus*
Holly blue	*Celastrina argiolus*
Red admiral	*Vanessa atalanta*
Painted lady	*Vanessa cardui*
Small tortoiseshell	*Aglais urticae*
Large tortoiseshell	*Nymphalis polychloros*
Peacock	*Inachis io*
Comma	*Polygonia c-album*
Speckled wood	*Pararge aegeria*
Grayling	*Hipparchia semele*
Gatekeeper	*Pyronia tithonus*
Meadow brown	*Maniola jurtina*
Wall	*Lasiommata megera*
Ringlet	*Aphantopus hyperantus*
Small heath	*Coenonympha pamphilus*

MOTHS

Ghost moth	*Hepialus humuli*
Common swift	*Hepialus lupulinus*
Leopard moth	*Zeuzera pyrina*
White-headed monopis	*Monopis monachella*
Nettle-tap moth	*Anthophila fabriciana*
Bird-cherry ermine	*Yponomeuta evonymella*
Hawthorn ermel	*Paraswammerdamia nebulella*
Diamond-back moth	*Plutella xylostella*
Little dwarf	*Elachista canapennella*
Swan-feather dwarf	*Elachista argentella*
Golden-brown tubic	*Batia unitella*
Common flat-body	*Agonopterix heracliana*
Ruddy flat-body	*Agonopterix subpropinquella*
Brindled flat-body	*Agonopterix arenella*

Parsnip flat-body	*Depressaria pastinacella*
Saltern groundling	*Scrobipalpa instabilella*
Viper's bugloss moth	*Ethmia bipunctella*
Dingy dowd	*Blastobasis lignea*
London dowd	*Blastobasis decolorella*
Shy cosmet moth	*Limnaecia phragmitella*
Orange crest	*Helcystogramma rufescens*
Saltmarsh plume	*Agdistis bennetii*
Hook-marked straw Moth	*Agapeta hamana*
Burdock conch	*Aethes rubigana*
Little conch	*Cochylis dubitana*
White-bodied conch	*Cochylis hybridella*
Black-headed conch	*Cochylis atricapitana*
Long-winged shade	*Cnephasia longana*
Dark fruit-tree tortrix	*Pandemis heparana*
Large fruit-tree tortrix	*Archips podana*
Norfolk tortrix	*Archips betulana*
Timothy tortrix	*Aphelia paleana*
Cyclamen tortrix	*Clepsis spectrana*
Privet tortrix	*Clepsis consimilana*
Light brown apple moth	*Epiphyas postvittana*
Orange pine tortrix	*Lozotaeniodes formosanus*
Red-barred tortrix	*Ditula angustiorana*
Omnivorous leaf-tier	*Cnephasia longana*
Gorse crest	*Brachmia blandella*
Maple button	*Acleris forsskaleana*
Large saltmarsh conch	*Phalonidia affinitana*
Garden rose tortrix	*Acleris variegana*
Lakes marble	*Celypha rufana*
Common marble	*Celypha lacunana*
Birch marble	*Apotomis betuletana*
Saltern marble	*Bactra robustana*
Teasel marble	*Endothenia gentianaeana*
Blotched marble	*Endothenia quadrimaculana*
Smoky-barred marble	*Lobesia abscisana*
Marbled orchard tortrix	*Hedya nubiferana*
Roseate marble	*Celypha rosaceana*
Bud moth	*Spilonota ocellana*
Poplar shoot-borer	*Gypsonoma aceriana*
White-cloaked shoot	*Gypsonoma sociana*
Yellow-faced bell	*Epiblema cynosbatella*
Summer rose bell	*Epiblema roborana*
White-foot bell	*Epiblema foenella*
Bramble shoot moth	*Epiblema uddmanniana*
Maritime bell	*Eucosma lacteana*
Marbled bell	*Eucosma campoliliana*
Bright bell	*Eucosma hohenwartiana*
Hoary bell	*Eucosma cana*
Two-coloured bell	*Eucosma obumbratana*
Lemon bell	*Thiodia citrana*
Marbled piercer	*Cydia splendana*
Codling moth	*Cydia pomonella*
Narrow-winged grey	*Eudonia angustea*
Wainscot veneer	*Chilo phragmitella*
Bulrush veneer	*Calamotropha paludella*
Garden grass-veneer	*Chrysoteuchia culmella*
Wood grass-veneer	*Crambus silvella*
Inlaid grass-veneer	*Crambus pascuella*
Hook-streaked grass-veneer	*Crambus lathoniellus*
Yellow satin veneer	*Crambus perlella*
Pale-streak grass-veneer	*Agriphila selasella*
Pearl veneer	*Agriphila straminella*
Common grass-veneer	*Agriphila tristella*
Barred grass-veneer	*Agriphila inquinatella*
Elbow-striped grass-veneer	*Agriphila geniculea*
Chequered grass-veneer	*Catoptria falsella*
Waste grass-veneer	*Pediasia contaminella*
Hook-tipped grass-veneer	*Platytes alpinella*
Giant water-veneer	*Schoenobius gigantella*
Large grey	*Scoparia subfusca*
Meadow grey	*Scoparia pyralella*
Common grey	*Scoparia ambigualis*
Marsh grey	*Eudonia pallida*
Small grey	*Eudonia mercurella*
Water veneer	*Acentria ephemerella*
Ringed china-mark	*Parapoynx stratiotata*
Garden pebble	*Evergestis forficalis*
Marbled yellow pearl	*Evergestis extimalis*
Starry pearl	*Cynaeda dentalis*
Straw-barred pearl	*Pyrausta despicata*
European corn-borer	*Ostrinia nubilalis*
Pale straw pearl	*Udea lutealis*
Small magpie	*Anania hortulata*
Twin-spot honey	*Aphomia zelleri*
Golden pearl	*Anania verbascalis*
Long-winged pearl	*Perinephela lancealis*
Elderberry pearl	*Phlyctaenia coronata*
Fenland pearl	*Phlyctaenia perlucidalis*
Olive pearl	*Udea olivalis*
Rusty dot pearl	*Udea ferrugalis*
Rush veneer	*Nomophila noctuella*
Mother of pearl	*Pleuroptya ruralis*
Gold triangle	*Hypsopygia costalis*
Long-legged tabby	*Synaphe punctalis*
Rosy tabby	*Endotricha flammealis*
Silver-edged knot-horn	*Pima boisduvaliella*
Thicket knot-horn	*Acrobasis suavella*
Grey knot-horn	*Acrobasis advenella*
Ermine knot-horn	*Phycitodes binaevella*
Beautiful knot-horn	*Pempelia formosa*
Willow knot-horn	*Sciota adelphella*
Silver-edged knot-horn	*Pima boisduvaliella*
New pine knot-horn	*Dioryctria sylvestrella*
Thistle ermine	*Myelois circumvoluta*
Hoary knot-horn	*Gymnancyla canella*
Twin-barred knot-horn	*Homoeosoma sinuella*
Triangle plume	*Platyptilia gonodactyla*
Crescent plume	*Marasmarcha lunaedactyla*
Common plume	*Emmelina monodactyla*
Six-spot burnet	*Zygaena filipendulae*

Hornet moth	*Sesia apiformis*
Ground lackey	*Malacosoma castrensis*
Oak eggar	*Lasiocampa quercus*
Fox moth	*Macrothylacia rubi*
Drinker	*Philudoria potatoria*
Emperor moth	*Saturnia pavonia*
Oak hook-tip	*Drepana binaria*
Pebble hook-tip	*Drepana falcataria*
Chinese character	*Cilix glaucata*
Buff arches	*Habrosyne pyritoides*
Figure of eighty	*Tethea ocularis*
Common emerald	*Hemithea aestivaria*
Blood-vein	*Timandra griseata*
Tawny wave	*Scopula rubiginata*
Mullein wave	*Scopula marginepunctata*
Small blood-vein	*Scopula imitaria*
Rosy wave	*Scopula emutaria*
Lesser cream wave	*Scopula immutata*
Smoky wave	*Scopula ternata*
Least carpet	*Idaea vulpinaria*
Silky wave	*Idaea dilutaria*
Dwarf cream wave	*Idaea fuscovenosa*
Small dusty wave	*Idaea seriata*
Single-dotted wave	*Idaea dimidiata*
Satin wave	*Idaea subsericeata*
Riband wave	*Idaea aversata*
Plain wave	*Idaea straminata*
Flame carpet	*Xanthorhoe designata*
Red twin-spot carpet	*Xanthorhoe spadicearia*
Silver-ground carpet	*Xanthorhoe montanata*
Garden carpet	*Xanthorhoe fluctuata*
Shaded broad-bar	*Scotopteryx chenopodiata*
Common carpet	*Epirrhoe alternata*
Yellow shell	*Camptogramma bilineata*
Mallow	*Larentia clavaria*
Dark spinach	*Pelurga comitata*
Purple bar	*Cosmorhoe ocellata*
Chevron	*Eulithis testata*
Barred straw	*Eulithis pyraliata*
Common marbled carpet	*Chloroclysta truncata*
Barred yellow	*Cidaria fulvata*
Pine carpet	*Thera firmata*
Green carpet	*Colostygia pectinataria*
July highflyer	*Hydriomena furcata*
Dark umber	*Philereme transversata*
Sharp-angled carpet	*Euphyia unangulata*
Rivulet	*Perizoma affinitata*
Sandy carpet	*Perizoma flavofasciata*
Mottled pug	*Eupithecia exiguata*
Lime-speck pug	*Eupithecia centaureata*
Triple-spotted pug	*Eupithecia trisignaria*
Common pug	*Eupithecia vulgata*
White-spotted pug	*Eupithecia tripunctaria*
Grey pug	*Eupithecia subfuscata*
Tawny Speckled pug	*Eupithecia icterata*
Bordered pug	*Eupithecia succenturiata*
Shaded pug	*Eupithecia subumbrata*
Yarrow pug	*Eupithecia millefoliata*
Plain pug	*Eupithecia simpliciata*
Narrow-winged pug	*Eupithecia nanata*
V-pug	*Chloroclystis v-ata*
Green pug	*Chloroclystis rectangulata*
Double-striped pug	*Gymnoscelis rufifasciata*
Treble-bar	*Aplocera plagiata*
Yellow-barred brindle	*Acasis viretata*
Clouded border	*Lomaspilis marginata*
Sharp-angled peacock	*Macaria alternata*
Tawny-barred angle	*Macaria liturata*
Latticed heath	*Chiasmia clathrata*
Brimstone moth	*Opisthograptis luteolata*
Bordered beauty	*Epione repandaria*
Canary-shouldered thorn	*Ennomos alniaria*
Early thorn	*Selenia dentaria*
Scalloped oak	*Crocallis elinguaria*
Swallow-tailed moth	*Ourapteryx sambucaria*
Brindled beauty	*Lycia hirtaria*
Peppered moth	*Biston betularia*
Willow beauty	*Peribatodes rhomboidaria*
Common white wave	*Cabera pusaria*
Common wave	*Cabera exanthemata*
Clouded silver	*Lomographa temerata*
Light emerald	*Campaea margaritata*
Barred red	*Hylaea fasciaria*
Yellow belle	*Semisaspilates ochrearia*
Convolvulus hawk-moth	*Agrius convolvuli*
Privet hawk-moth	*Sphinx ligustri*
Pine hawk-moth	*Hyloicus pinastri*
Lime hawk-moth	*Mimas tiliae*
Eyed hawk-moth	*Smerinthus ocellata*
Poplar hawk-moth	*Laothoe populi*
Humming-bird hawk-moth	*Macroglossum stellatarum*
Elephant hawk-moth	*Deilephila elpenor*
Small elephant hawk-moth	*Deilephila porcellus*
Sallow kitten	*Furcula furcula*
Poplar kitten	*Furcula bifida*
Iron prominent	*Notodonta dromedarius*
Pebble prominent	*Notodonta ziczac*
Lesser swallow prominent	*Pheosia gnoma*
Swallow prominent	*Pheosia tremula*
Coxcomb prominent	*Ptilodon capucina*
Pale prominent	*Pterostoma palpina*
Chocolate-tip	*Clostera curtula*
Buff-tip	*Phalera bucephala*
Vapourer	*Orgyia antiqua*
Brown-tail	*Euproctis chrysorrhoea*
Yellow-tail	*Euproctis similis*
White satin moth	*Leucoma salicis*
Round-winged muslin	*Thumatha senex*
Dingy footman	*Eilema griseola*
Pigmy footman	*Eilema pygmaeola*

Pigmy footman *[Ssp Pygmaeola]*	*Eilema pygmaeola pygmaeola*
Scarce footman	*Eilema complana*
Buff footman	*Eilema deplana*
Common footman	*Eilema lurideola*
Four-spotted footman	*Lithosia quadra*
Garden tiger	*Arctia caja*
Cream-spot tiger	*Arctia villica*
White ermine	*Spilosoma lubricipeda*
Buff ermine	*Spilosoma luteum*
Water ermine	*Spilosoma urticae*
Muslin moth	*Diaphora mendica*
Ruby tiger	*Phragmatobia fuliginosa*
Cinnabar	*Tyria jacobaeae*
Kent black arches	*Meganola albula*
Short-cloaked moth	*Nola cucullatella*
White-line dart	*Euxoa tritici*
Archer's dart	*Agrotis vestigialis*
Turnip moth	*Agrotis segetum*
Heart and club	*Agrotis clavis*
Heart and dart	*Agrotis exclamationis*
Dark sword grass	*Agrotis ipsilon*
Shuttle-shaped dart	*Agrotis puta*
Flame	*Axylia putris*
Flame shoulder	*Ochropleura plecta*
Large yellow underwing	*Noctua pronuba*
Lunar yellow underwing	*Noctua orbona*
Lesser yellow underwing	*Noctua comes*
Broad-bordered yellow underwing	*Noctua fimbriata*
Langmaid's yellow underwing	*Noctua janthina*
Lesser broad-bordered yellow underwing	*Noctua janthe*
Least yellow underwing	*Noctua interjecta*
Double dart	*Graphiphora augur*
Autumnal rustic	*Eugnorisma glareosa*
True lover's knot	*Lycophotia porphyrea*
Pearly underwing	*Peridroma saucia*
Small square spot	*Diarsia rubi*
Setaceous Hebrew character	*Xestia c-nigrum*
Double square-spot	*Xestia triangulum*
Square-spotted clay	*Xestia rhomboidea*
Square-spot rustic	*Xestia xanthographa*
Gothic	*Naenia typica*
Red chestnut	*Cerastis rubricosa*
Nutmeg	*Discestra trifolii*
Shears	*Hada plebeja*
White colon	*Sideridis albicolon*
Cabbage moth	*Mamestra brassicae*
Dot moth	*Melanchra persicariae*
Broom moth	*Melanchra pisi*
Light brocade	*Lacanobia w-latinum*
Dog's tooth	*Lacanobia suasa*
Bright-line brown-eye	*Lacanobia oleracea*
Broad-barred white	*Hecatera bicolorata*
Campion	*Hadena rivularis*
Tawny shears	*Hadena perplexa*
Lychnis	*Hadena bicruris*
Antler moth	*Cerapteryx graminis*
Hedge rustic	*Tholera cespitis*
Feathered gothic	*Tholera decimalis*
Pine beauty	*Panolis flammea*
Powdered quaker	*Orthosia gracilis*
Common quaker	*Orthosia cerasi*
Hebrew character	*Orthosia gothica*
Brown-line bright-eye	*Mythimna conigera*
Clay	*Mythimna ferrago*
White-point	*Mythimna albipuncta*
Striped wainscot	*Mythimna pudorina*
Southern wainscot	*Mythimna straminea*
Smoky wainscot	*Mythimna impura*
Common wainscot	*Mythimna pallens*
Mathew's wainscot	*Mythimna favicolor*
L-album wainscot	*Mythimna l-album*
Shoulder-striped wainscot	*Mythimna comma*
Star-wort	*Cucullia asteris*
Mullein	*Shargacucullia verbasci*
Feathered brindle	*Aporophyla australis*
Deep-brown dart	*Aporophyla lutulenta*
Black rustic	*Aporophyla nigra*
Green-brindled crescent	*Allophyes oxyacanthae*
Merveille-du-jour	*Dichonia aprilina*
Feathered ranunculus	*Polymixis lichenea*
Brick	*Agrochola circellaris*
Red-line quaker	*Agrochola lota*
Brown-spot pinion	*Agrochola litura*
Beaded chestnut	*Agrochola lychnidis*
Lunar underwing	*Omphaloscelis lunosa*
Barred sallow	*Xanthia aurago*
Poplar grey	*Acronicta megacephala*
Grey dagger	*Acronicta psi*
Knot grass	*Acronicta rumicis*
Reed dagger	*Simyra albovenosa*
Marbled beauty	*Cryphia domestica*
Marbled green	*Cryphia muralis*
Copper underwing	*Amphipyra pyramidea*
Mouse moth	*Amphipyra tragopogonis*
Bird's wing	*Dypterygia scabriuscula*
Brown rustic	*Rusina ferruginea*
Straw underwing	*Thalpophila matura*
Small angle shades	*Euplexia lucipara*
Angle shades	*Phlogophora meticulosa*
Lesser-spotted pinion	*Cosmia affinis*
Dun-bar	*Cosmia trapezina*
Dark arches	*Apamea monoglypha*
Light arches	*Apamea lithoxylaea*
Crescent striped	*Apamea oblonga*
Dusky brocade	*Apamea remissa*
Rustic shoulder-knot	*Apamea sordens*

Marbled minor	*Oligia strigilis*
Tawny marbled minor	*Oligia latruncula*
Middle-barred minor	*Oligia fasciuncula*
Cloaked minor	*Mesoligia furuncula*
Rosy minor	*Mesoligia literosa*
Common rustic	*Mesapamea secalis*
Dusky sallow	*Eremobia ochroleuca*
Flounced rustic	*Luperina testacea*
Sandhill rustic	*Luperina nickerlii*
Saltern ear	*Amphipoea fucosa*
Ear moth	*Amphipoea oculea*
Rosy rustic	*Hydraecia micacea*
Frosted orange	*Gortyna flavago*
Twin-spotted wainscot	*Archanara geminipuncta*
Webb's wainscot	*Archanara sparganii*
Large wainscot	*Rhizedra lutosa*
Fen wainscot	*Arenostola phragmitidis*
Treble lines	*Charanyca trigrammica*
Uncertain	*Hoplodrina alsines*
Rustic	*Hoplodrina blanda*
Vine's rustic	*Hoplodrina ambigua*
Small mottled willow	*Spodoptera exigua*
Mottled rustic	*Caradrina morpheus*
Pale mottled willow	*Paradrina clavipalpis*
Bordered sallow	*Pyrrhia umbra*
Scarce bordered straw	*Heliothis armigera*
Marbled clover	*Heliothis viriplaca*
Cream-bordered green pea	*Earias clorana*
Scarce silver lines	*Bena bicolorana*
Slender burnished brass	*Thysanoplusia orichalcea*
Burnished brass	*Diachrysia chrysitis*
Gold spot	*Plusia festucae*
Silver Y	*Autographa gamma*
Dark spectacle	*Abrostola triplasia*
Spectacle	*Abrosta tripartita*
Red underwing	*Catocala nupta*
Mother Shipton	*Callistege mi*
Straw dot	*Rivula sericealis*
Snout	*Hypena proboscidalis*
Dotted fan-foot	*Macrochilo cribrumalis*

DRAGONFLIES (ODONATA)

Banded desmoiselle	*Calopteryx splendens*
Large red damselfly	*Pyrrhosoma nymphula*
Blue-tailed damselfly	*Ischnura elegans*
Common blue damselfly	*Enallagma cyathigerum*
Azure damselfly	*Coenagrion puella*
Small red-eyed damselfly	*Erythromma viridulum*
Hairy dragonfly	*Brachytron pratense*
Southern hawker	*Aeshna cyanea*
Brown hawker	*Aeshna grandis*
Migrant hawker	*Aeshna mixta*
Emperor dragonfly	*Anax imperator*
Four-spotted chaser	*Libellula quadrimaculata*
Black-tailed skimmer	*Orthetrum cancellatum*
Common darter	*Sympetrum striolatum*
Ruddy darter	*Sympetrum sanguineum*

GRASSHOPPERS (ORTHOPTERA)

Oak bush-cricket	*Meconema thalassinum*
Dark bush-cricket	*Pholidoptera griseoaptera*
Roesel's bush-cricket	*Metrioptera roeselii*
Grey bush cricket	*Platycleis albopunctata*
Long-winged conehead	*Conocephalus discolor*
Short-winged conehead	*Conocephalus dorsalis*
Field grasshopper	*Chorthippus brunneus*
Slender groundhopper	*Tetrix susbulata*
Lesser marsh grasshopper	*Chorthippus albomarginatus*

BONY FISH (ACTINOPTERYGII)

Three-spined stickleback	*Gasterosteus aculeatus*
Nine spine stickleback	*Pungitius pungitius*

MOLLUSCS

Garden snail	*Cornu aspersum*
Moss chrysalis snail	*Pupilla (Pupilla) muscorum*
Mouse-eared snail	*Myosotella myosotis*
Striped snail	*Cernuella (Cernuella) virgata*
Wrinkled snail	*Candidula intersecta*
Common whorl snail	*Vertigo pygmaea*
Striated whorl snail	*Vertigo substriata*
Narrow-mouthed whorl snail	*Vertigo angustior*
Wall whorl snail	*Vertigo pusilla*
Dwarf Snail	*Punctum pygmaeum*
Moss chrysalis snail	*Pupilla muscorum*
Two-toothed door snail	*Clausilia bidentata*
Two-toothed white snail	*Leucophytia bidentata*
Brown-lipped snail	*Cepaea nemoralis*
White-lipped snail	*Cepaea hortensis*
Dun sentinel	*Assiminea grayana*
Common periwinkle	*Littorina littorea*
Rough periwinkle	*Littorina saxatilis*
Pointed cingula	*Onoba aculeus*
Semi-ribbed spire-shell	*Onoba semicostata*
Laver spire-shell	*Peringia ulvae*
Lagoon cockle	*Cerastoderma glaucum*
fragile saltwater clam	*Abra tenuis*
Smooth glass snail	*Aegopinella nitidula*
Clear glass snail	*Aegopinella pura*
Pellucid glass snail	*Vitrina pellucida*
Alder's tawny glass snail	*Euconulus alderi*
Slippery snail	*Cochlicopa lubrica*
Ribbed grass snail	*Vallonia costata*
Eccentric vallonia	*Vallonia excentrica*
Common chrysalis snail	*Lauria cylindracea*
Garlic snail	*Oxychilus alliarius*
Crystal snail	*Vitrea crystallina*
Wrinkled snail	*Candidula intersecta*
Rotund disc	*Discus rotundatus*

Kentish snail	*Monacha cantiana*
New Zealand mudsnail	*Potamopyrgus antipodarum*
Sea slug	*Limapontia depressa*
Wandering pond snail	*Radix balthica*
Lake orb mussel	*Musculium lacustre*
Ram's horn snail	*Planorbis planorbis*
Whirlpool ramshorn	*Anisus vortex*
Twisted ramshorn	*Bathyomphalus contortus*
Nautilus ramshorn	*Armiger crista*
Flat valve snail	*Valvata cristata*
Faucet snail	*Bithynia tentaculata*
Leach's bithynia	*Bithynia leachii*
European fingernail clam	*Sphaerium corneum*
Common bladder snail	*Physa fontinalis*
Acute bladder snail	*Physella acuta*
Spire snail	*Hydrobia ventrosa*
Mud snail	*Hydrobia neglecta*
Marsh pond snail	*Stagnicola fuscus*
Dwarf pond snail	*Galba trancatuluta*
Great pond snail	*Lymnaea stagnalis*
European valve snail	*Valvata piscinalis*
Duck mussel	*Anodonta anatina*
	Trichia striolatum

CRUSTACEANS

Ant woodlouse	*Platyarthrus hoffmannseggii*
Common pill woodlouse	*Armadillidium vulgare*
Common pygmy woodlouse	*Trichoniscus pusillus*
Common rough woodlouse	*Porcellio scaber*
Common shiny woodlouse	*Oniscus asellus*
Common striped wood-louse	*Philoscia muscorum*
Common ridgeback	*Haplophthalmus mengii*
Coastal red-eye	*Trichoniscoides saeroeensis*
Water louse	*Asellus aquaticus*
Seed shrimp	*Ostracoda sp.*
Common prawn	*Palaemon serratus*
	Crangonyx pseudogracilis
	Gammarus duebeni
	Gammarus pulex
	Gammarus zaddachi

SPIDERS (ARANEAE)

Common fox spider	*Alopecosa pulverulenta*
Lace-webbed spider	*Amaurobius fenestralis*
Black lace-weaver spider	*Amaurobius ferox*
	Arctosa leopardus
Wasp spider	*Argiope bruennichi*
Water spider	*Argyroneta aquatica*
	Bathyphantes gracilis
	Centromerita bicolor
	Clubiona neglecta
	Cnephalocotes obscurus
	Crustulina guttata
	Diplostyla concolor
	Drassodes lapidosus
Woodlouse spider	*Dysdera crocata*
	Erigone arctica
	Erigone atra
	Erigone longipalpis
pirate spider	*Ero furcata*
	Euophrys frontalis
Sea-shore spider	*Halorates reprobus*
	Harpactea hombergi
	Heliophanus cupreus
Furrow orb spider	*Larinioides cornutus*
	Linyphia triangularis
	Lophomma punctatum
	Meioneta affinis
	Meioneta rurestris
	Metellina segmentata
	Metopobactrus prominulus
	Oedothorax fuscus
	Ozyptila simplex
	Pachygnatha clercki
	Pachygnatha degeeri
	Parapelecopsis nemoralis
wolf spider	*Pardosa agrestis purbeckensis*
Shore wolf spider	*Pardosa agricola*
	Pardosa nigriceps
	Pardosa pullata
	Pelecopsis parallela
	Peponocranium ludicrum
	Phaeocedus braccatus
Pirate wolf spider	*Pirata piraticus*
Whelk-shell Jumper	*Pseudeuophrys obsoleta*
	Sitticus inexpectus
Small jumping spider	*Talavera aequipes*
	Tapinopa longidens
	Tenuiphantes flavipes
	Tenuiphantes mengei
	Tenuiphantes tenuis
	Trichoncus affinis
Rustic wolf spider	*Trochosa ruricola*
Dune wolf spider	*Xerolycosa miniata*
	Xysticus cristatus
	Xysticus kochi
	Zelotes apricorum
	Zelotes electus
	Zelotes latreillei
	Zelotes subterraneus

HARVESTMEN (OPILIONES)

	Phalangium opilio
	Opilio saxatalis

TRUE BUGS (HEMIPTERA)

Lesser water boatman	*Corixa punctata*
Water boatman	*Sigara selecta*
Water boatman	*Sigara stagnalis*
Water boatman	*Sigara falleni*
Water boatman	*Corixa panzeri*
Water boatman	*Sigara lateralis*
Water boatman	*Paracorixa concinna*
Water boatman	*Corixa affinis*
Water boatman	*Callicorixa praeusta*
Mottled backswimmer	*Notonecta maculata*
Common backswimmer	*Notonecta glauca*
Pygmy backswimmer	*Plea minutissima*
Common pondskater	*Gerris lacustris*
Toothed pondskater	*Gerris odontogaster*
	Gerris lateralis
	Gerris thoracicus
Spined shieldbug	*Picromerus bidens*
Water spring-tail	*Sminthurides aquaticus*
Saucer bug	*Ilyocoris cimicoides*
Common shore-bug	*Saldula saltatoria*
Small water cricket	*Microvelia reticulata*
Sandhopper	*Talitrus saltator*
Pondweed bug	*Mesovelia furcata*
Velvet water-bug	*Hebrus ruficeps*
Waterlouse	*Asellus aquaticus*
Water scorpion	*Nepa cinerea*
Water measurer	*Hydrometra stagnorum*
Water stick insect	*Ranatra linearis*
longhorn caddisfly	*Mystacides longicornis*
saltmarsh caddis	*Limnephilus affinis*
yellow-faced water boatman	*Cymatia coleoptrata*
	Chorosoma schillingi

AQUATIC BEETLES

water beetle	*Agabus bipustulatus*
water beetle	*Agabus conspersus*
water beetle	*Agabus nebulosus*
water beetle	*Agabus sturmii*
water scavenger beetle	*Anacaena bipustulata*
water scavenger beetle	*Anacaena globulus*
water scavenger beetle	*Anacaena limbata*
water beetle	*Berosus (Enoplurus) fulvus*
water beetle	*Cercyon (Cercyon) littoralis*
dark diving beetle	*Colymbetes fuscus*
water boatman	*Cymatia coleoptrata*
water scavenger beetle	*Cymbiodyta marginellus*
diving beetle	*Dytiscus circumcinctus*
water beetle	*Enochrus bicolour*
water beetle	*Enochrus fuscipennis*
water beetle	*Enochrus halophilus*
water beetle	*Enochrus quadripunctatus*
diving beetle	*Graptodytes pictus*
whirligig beetle	*Gyrinus caspius*
whirligig beetle	*Gyrinus natator*
whirligig beetle	*Gyrinus substriatus*
crawling water beetle	*Haliplus lineatocollis*
crawling water beetle	*Haliplus ruficollis*
water scavenger beetle	*Helochares lividus*
water scavenger beetle	*Helophorus alternans*
water scavenger beetle	*Helophorus brevipalpis*
water scavenger beetle	*Hydrobius fuscipes*
water scavenger beetle	*Hydrochus brevis*
water beetle	*Hydroporus angustatus*
water beetle	*Hydroporus incognitus*
water beetle	*Hydroporus memnonius*
water beetle	*Hydroporus palustris*
water beetle	*Hygrotus (Coelambus) parallelogrammus*
water beetle	*Hygrotus impressopunctatus*
water beetle	*Hygrotus inaequalis*
diving beetle	*Hyphydrus ovatus*
diving beetle	*Ilybius ater*
diving beetle	*Ilybius quadriguttatus*
water scavenger beetle	*Laccobius striatulus*
water beetle	*Noterus clavicornis*
water beetle	*Ochthebius (Homalochthebius) minimus*
water beetle	*Ochthebius (Ochthebius) marinus*
water beetle	*Ochthebius (Ochthebius) viridis*
water beetle	*Ochthebius bicolon*
water beetle	*Ochthebius marinus*
crawling water beetle	*Peltodytes caesus*
diving beetle	*Rhantus frontalis*
diving beetle	*Rhantus grapii*

LEECHES

	Polycelis nigra
	Glossiphonia complanata
	Erpobdella testacea

HOVERFLIES (DIPTERA)

Marmalade hoverfly	*Episyrphus balteatus*
Migrant hoverfly	*Eupeodes corollae*
Pied hoverfly	*Scaeva pyrastri*
Hoverfly	*Eupeodes latifasciatus*

ANTS, BEES AND WASPS (HYMENOPTERA)

Turf ant	*Tetramorium caespitum*
Black garden ant	*Lasius niger*
Yellow meadow ant	*Lasius flavus*
Common red ant	*Myrmica rubra*
Indolent ant	*Ponera coarctata*
sand ant	*Myrmica sabuleti*
Common wasp	*Vespa vulgaris*
Honey bee	*Apis mellifera*
White-tailed bumble bee	*Bombus (Bombus) lucorum*
Buff-tailed bumble bee	*Bombus (Bombus) terrestris*

Common carder bee	*Bombus (Thoracobombus) pascuorum*
Large red-tailed bumble bee	*Bombus (Melanobombus) lapidarius*
Early bumble bee	*bombus (Pyrobombus) pratorum*
Vestal cuckoo bee	*Bombus (Psithyrus) vestalis*
Ichneumon wasp	*Ichneumon sp.*

MILLIPEDE

Blunt-tailed snake millipede	*Cylindroiulus punctatus*

FALSE SCORPION (PSEUDOSCORPIONES)

Common cthonid	*Chthonius (cthonius) ischnocheles*

EARWIG (DERMAPTERA)

Common earwig	*Forficula auricularia*

WORMS

Earthworm	*Oligocheata sp.*

FLOWERING PLANTS

Yarrow	*Achillea millefolium*
Monkshood	*Aconitum napellus*
Velvet bent	*Agrostis canina*
Creeping bent	*Agrostis stolonifera*
Marsh foxtail	*Alopecurus geniculatus*
Bur chervil	*Anthriscus caucalis*
Cow Parsley	*Anthriscus sylvestris*
Parsel piert	*Aphanes arvensis*
Slender parsley piert	*Aphanes australis*
Wild celery	*Apium graveolens*
Fool's water cress	*Apium nodiflorum*
Lesser burdock	*Arctium minus*
Thyme-leaved sandwort	*Arenaria serpyllifolia*
Slender sandwort	*Arenaria serpyllifolia Leptoclados*
Thrift	*Armeria maritima*
Sea wormwood	*Artemisia maritima*
Mugwort	*Artemisia vulgaris*
Sea aster	*Aster tripolium*
Babington's orache	*Atriplex glabriuscula*
Grass-leaved orache	*Atriplex littoralis*
Common orache	*Atriplex patula*
Sea purslane	*Atriplex portulacoides*
Spear-leaved orache	*Atriplex prostrata*
Black horehound	*Ballota nigra*
Daisy	*Bellis perennis*
Lesser water parsnip	*Berula erecta*
Sea beet	*Beta vulgaris maritima*
Hedge ragwort	*Brachyglottis repanda*
Black mustard	*Brassica nigra*
Greater quaking grass	*Briza maxima*
Soft brome	*Bromus hordeaceus*
Pot marigold	*Calendula officinalis*
Common water starwort	*Callitriche stagnalis*
Hedge bindweed	*Calystegia sepium*
Musk thistle	*Carduus nutans*
Slender thistle	*Carduus tenuiflorus*
Sea fern grass	*Catapodium marinum*
Fern grass	*Catapodium rigidum*
Common knapweed	*Centaurea nigra*
Red Valerian	*Centranthus ruber*
Sea mouse ear	*Cerastium diffusum*
Common mouse ear	*Cerastium fontanum*
Sticky mouse ear	*Cerastium glomeratum*
Little mouse ear	*Cerastium semidecandrum*
Snow-in-summer	*Cerastium tomentosum*
Rigid hornwort	*Ceratophyllum demersum*
Rough chervil	*Chaerophyllum temulum*
Greater celandine	*Chelidonium majus*
Creeping thistle	*Cirsium arvense*
Spear thistle	*Cirsium vulgare*
Spring beauty	*Claytonia perfoliata*
English scurvygrass	*Cochlearia anglica*
Danish scurvygrass	*Cochlearia danica*
Common scurygrass	*Cochlearia officinalis*
Hemlock	*Conium maculatum*
Field bindweed	*Convolvulus arvensis*
Sea kale	*Crambe maritima*
Smooth hawk's beard	*Crepis capillaris*
Beaked hawk's beard	*Crepis vesicaria*
Rock samphire	*Crithmum maritimum*
Wild carrot	*Daucus carota*
Foxglove	*Digitalis purpurea*
Wild teasel	*Dipsacus fullonum*
Viper's bugloss	*Echium vulgare*
Canadian pondweed	*Elodea canadensis*
Rosebay willowherb	*Epilobium angustifolium*
Great willowherb	*Epilobium hirsutum*
Common horsetail	*Equisetum arvense*
Common storksbill	*Erodium cicutarium*
Common whitlowgrass	*Erophila verna*
Common cudweed	*Filago vulgaris*
Fennel	*Foeniculum vulgare*
Giant fennel	*Ferula communis*
Cleavers	*Galium aparine*
Lady's bedstraw	*Galium verum*
Cut-leaved cranesbill	*Geranium dissectum*
Doves-foot cranesbill	*Geranium molle*
Small-flowered cranesbill	*Geranium pusillum*
Herb Robert	*Geranium robertianum*
Round-leaved cranesbill	*Geranium rotundifolium*
Yellow horned poppy	*Glaucium flavum*
Sea milkwort	*Glaux maritima*
Ground ivy	*Glechoma hederacea*
Curry plant	*Helichrysum italicum*
Hogweed	*Heracleum sphondylium*
Sea sandwort	*Honckenya peploides*
Smooth catsear	*Hypochaeris glabra*

Common catsear	*Hypochaeris radicata*
Golden samphire	*Inula crithmoides*
Bearded iris	*Iris germanica*
Field scabious	*Knautia arvensis*
Prickly lettuce	*Lactuca serriola*
Greater lettuce	*Lactuca virosa*
White dead nettle	*Lamium album*
Red dead nettle	*Lamium purpureum*
Sea pea	*Lathyrus japonicus*
Grass vetchling	*Lathyrus nissolia*
Meadow vetchling	*Lathyrus pratensis*
Common duckweed	*Lemna minor*
Ivy-leaved duckweed	*Lemna trisulca*
Autumn hawkbit	*Leontodon autumnalis*
Lesser hawkbit	*Leontodon saxatilis*
Field pepperwort	*Lepidium campestre*
Hoary cress	*Lepidium draba*
Dittander	*Lepidium latifolium*
Oxeye daisy	*Leucanthemum vulgare*
Wild privet	*Ligustrum vulgare*
Rock sea-lavender	*Limonium binervosum*
Lax-flowered sea-lavender	*Limonium humile*
Common sea-lavender	*Limonium vulgare*
Purple toadflax	*Linaria purpurea*
Common toadflax	*Linaria vulgaris*
Common birdsfoot trefoil	*Lotus corniculatus*
Narrow-leaved birdsfoot trefoil	*Lotus glaber*
Slender birdsfoot trefoil	*Lotus tenuis*
Tree lupin	*Lupinus arboreus*
Tree mallow	*Lavatera arborea*
Common mallow	*Malva sylvestris*
Pineapple weed	*Matricaria discoidea*
Spotted medick	*Medicago arabica*
Black medick	*Medicago lupulina*
Bur medick	*Medicago minima*
White melilot	*Melilotus albus*
Ribbed melilot	*Melilotus officinalis*
Changing forgetmenot	*Myosotis discolor*
Early forgetmenot	*Myosotis ramosissima*
Mousetail	*Myosurus minimus*
Alternate water milfoil	*Myriophyllum alterniflorum*
Spiked water milfoil	*Myriophyllum spicatum*
Whorled water milfoil	*Myriophyllum verticillatum*
Pheasant's eye	*Narcissus poeticus*
Watercress	*Nasturtium officinale*
Spiny restharrow	*Ononis spinosa*
Bee orchid	*Ophrys apifera*
Star of Bethlehem	*Ornithogalum angustifolium*
Pink sorrel	*Oxalis articulata*
Spreading yellow sorrel	*Oxalis corniculata*
Long-headed poppy	*Papaver dubium*
Common poppy	*Papaver rhoeas*
Opium poppy	*Papaver somniferum*
Pellitory of the wall	*Parietaria judaica*
Green alkanet	*Pentaglottis sempervirens*
Amphibious bistort	*Persicaria amphibia*
Garden parsley	*Petroselinum crispum*
Tansy-leaved phacelia	*Phacelia tanacetifolia*
Small catstail	*Phleum bertolonii*
Bristly oxtongue	*Picris echioides*
Mouse-ear hawkweed	*Pilosella officinarum*
Buck's horn plantain	*Plantago coronopus*
Ribwort plantain	*Plantago lanceolata*
Greater plantain	*Plantago major*
Sea plantain	*Plantago maritima*
Hoary plantain	*Plantago media*
Curled pondweed	*Potamogeton crispus*
Fennel pondweed	*Potamogeton pectinatus*
Silverweed	*Potentilla anserina*
Hoary cinquefoil	*Potentilla argentea*
Creeping cinquefoil	*Potentilla reptans*
Bracken	*Pteridium aquilinum*
Common fleabane	*Pulicaria dysenterica*
Common water crowfoot	*Ranunculus aquatilis*
Bulbous buttercup	*Ranunculus bulbosus*
Creeping buttercup	*Ranunculus repens*
Hairy buttercup	*Ranunculus sardous*
Celery-leaved buttercup	*Ranunculus sceleratus*
Wild mignonette	*Reseda lutea*
Weld	*Reseda luteola*
Sweetbriar	*Rosa rubiginosa*
Bramble	*Rubus fruticosus*
Elm-leaved bramble	*Rubus ulmifolius*
Sheep sorrel	*Rumex acetosella*
Clustered dock	*Rumex conglomeratus*
Curled dock	*Rumex crispus*
Water dock	*Rumex hydrolapathum*
Broad-leaved dock	*Rumex obtusifolius*
Spiral tasselweed	*Ruppia cirrhosa*
Beaked tasselweed	*Ruppia maritima*
Annual pearlwort	*Sagina apetala*
Common glasswort	*Salicornia europaea*
Wild clary	*Salvia verbenaca*
Soapwort	*Saponaria officinalis*
Perennial glasswort	*Sarcocornia perennis*
Meadow saxifrage	*Saxifraga granulata*
Rue-leaved saxifrage	*Saxifraga tridactylites*
Biting stonecrop	*Sedum acre*
White stonecrop	*Sedum album*
English stonecrop	*Sedum anglicum*
Ice-plant	*Sedum spectabile*
Caucasian stonecrop	*Sedum spurium*
Silver ragwort	*Senecio cineraria*
Hoary ragwort	*Senecio erucifolius*
Slender leaved ragwort	*Senecio inaequidens*
Common ragwort	*Senecio jacobaea*
Heath groundsel	*Senecio sylvaticus*
Sticky groundsel	*Senecio viscosus*
Groundsel	*Senecio vulgaris*

Sea wormwood	*Seriphidium maritimum*
Rose campion	*Silene coronaria*
Red campion	*Silene dioica*
Slender leaved ragwort	*Silene inaequidens*
White campion	*Silene latifolia*
Sea campion	*Silene uniflora*
Hedge mustard	*Sisymbrium officinale*
Alexanders	*Smyrnium olusatrum*
Perennial sow-thistle	*Sonchus arvensis*
Prickly sow-thistle	*Sonchus asper*
Smooth sow-thistle	*Sonchus oleraceus*
Lesser sea spurrey	*Spergularia marina*
Common chickweed	*Stellaria media*
Annual seablite	*Suaeda maritima*
Dandelion	*Taraxacum officinale*
Upright hedge parsley	*Torilis japonica*
Goatsbeard	*Tragopogon pratensis*
Haresfoot clover	*Trifolium arvense*
Hop trefoil	*Trifolium campestre*
Lesser trefoil	*Trifolium dubium*
Clustered clover	*Trifolium glomeratum*
Slender trefoil	*Trifolium micranthum*
Birdsfoot clover	*Trifolium ornithopodioides*
Red clover	*Trifolium pratense*
White clover	*Trifolium repens*
Rough clover	*Trifolium scabrum*
Sea clover	*Trifolium squamosum*
Knotted clover	*Trifolium striatum*
Burrowing clover	*Trifolium subterraneum*
Suffocated clover	*Trifolium suffocatum*
Sea arrowgrass	*Triglochin maritima*
Sea mayweed	*Tripleurospermum maritimum*
Lesser bulrush	*Typha angustifolia*
Didier's tulip	*Tulipa gesneriana*
Lesser reedmace	*Typha angustifolia*
Bulrush	*Typha latifolia*
Common nettle	*Urtica dioica*
Common cornsalad	*Valerianella locusta*
Hoary mullein	*Verbascum pulverulentum*
Common mullein	*Verbascum thapsus*
Wall speedwell	*Veronica arvensis*
Pink water speedwell	*Veronica catenata*
Ivy-leaved speedwell	*Veronica hederifolia*
Tufted vetch	*Vicia cracca*
Hairy tare	*Vicia hirsuta*
Spring vetch	*Vicia lathyroides*
Yellow vetch	*Vicia lutea*
Common vetch	*Vicia sativa*
Narrow-leaved vetch	*Vicia sativa nigra*
Smooth tare	*Vicia tetrasperma*
Mountain pansy	*Viola lutea wittrockiana*
Horned pondweed	*Zannichellia palustris*

TREES AND SHRUBS

Red maple	*Acer rubrum*
Italian alder	*Alnus cordata*
Alder	*Alnus glutinosa*
White bryony	*Bryonia dioica*
Hawthorn	*Crataegus monogyna*
Broom	*Cytisus scoparius*
Spanish broom	*Spartium juncum*
Ivy	*Hedera helix*
Crab apple	*Malus sylvestris*
Corsican pine	*Pinus nigra ssp laricio*
Grey poplar	*Populus canescens*
Black flowering cherry	*Prunus cerasifera*
Blackthorn	*Prunus spinosa*
Pear	*Pyrus sp*
Dog rose	*Rosa canina*
Blackberry	*Rubus sp*
Elder	*Sambucus nigra*
Tamarisk	*Tamarix gallica*
Gorse	*Ulex europaeus*
Elm	*Ulmus sp*

GRASSES

Silver hair grass	*Aira caryophyllea*
Early hair grass	*Aira praecox*
Meadow foxtail	*Alopecurus pratensis*
Barren brome	*Anisantha sterilis*
Soft brome	*Bromus hordeaceus*
False oat grass	*Arrhenatherum elatius*
Crested dogstail	*Cynosuros cristatus*
Cocksfoot	*Dactylis glomerata*
Sea couch	*Elytrigia atherica*
Sand couch	*Elytrigia junca*
Common couch	*Elymus repens*
Tall fescue	*Festuca arundinacea*
Sheep's fescue	*Festuca ovina*
Meadow fescue	*Festuca pratensis*
Red fescue	*Festuca rubra*
Slender creeping red fescue	*Festuca rubra litoralis*
Squirrel tail fescue	*Vulpia bromoides*
Yorkshire fog	*Holcus lanatus*
Wall barley	*Hordeum murinum*
Meadow barley	*Hordeum secalinum*
Crested hair grass	*Koeleria macrantha*
Perennial rye	*Grass Lolium perenne*
Curved hard grass	*Parapholis incurva*
Timothy	*Phleum pratense*
Common reed	*Phragmites australis*
Reed canary grass	*Phalaris arundinacea*
Annual meadow grass	*Poa annua*
Smooth meadow grass	*Poa pratensis*
Rough meadow grass	*Poa trivialis*
Bulbous meadow grass	*Poa bulbosa*
Flattened meadow grass	*Poa compressa*
Borrer's saltmarsh grass	*Puccinellia fasciculata*

Common saltmarsh grass	*Puccinellia maritima*
Stiff saltmarsh grass	*Puccinellia rupestris*
Common cord grass	*Spartina anglica*
Yellow oat grass	*Trisetum flavescens*

RUSHES AND SEDGES

Distant sedge	*Carex distans*
Extended sedge	*Carex extensa*
Hairy sedge	*Carex hirta*
False fox sedge	*Carex otrubae*
Greater pond sedge	*Carex riparia*
Hard rush	*Juncus inflexus*
Soft rush	*Juncus effusus*
Saltmarsh rush	*Juncus gerardii*
Sea rush	*Juncus maritimus*
Sea clubrush	*Bolboschoenus maritimus*

LICHENS

Netted shield lichen	*Parmelia sulcata*
Oak moss	*Evernia prunastri*
Common orange lichen	*Xanthoria parietina*
Reindeer moss	*Cladonia portentosa*
	Cladonia chlorophaea
	Cladonia floerkeana
	Cladonia furcata
	Cladonia humilis
	Cladonia ramulosa
	Cladonia rangiformis
	Cladonia cervicornis
	Cladonia coniocraea
	Cladonia fimbriata
	Cladonia arbuscula
	Cladonia squamosa
	Lecanora albescens
	Lecanora dispersa
	Lecanora muralis
	Physcia adscendens
	Micarea erratica
	Caloplaca holocarpa
	Hypogymnia tubulosa
	Pseudevernia furfuracea
	Porpidia soredizodes
	Amandinea punctata
	Cetraria aculeata
	Collema tenax var. ceranoides
	Peltigera canina

MOSSES

Anomalous bristle-moss	*Orthotrichum anomalum*
Bird's-claw beard-moss	*Barbula unguiculata*
Bicoloured bryum	*Bryum bicolor*
Blunt-fruited pottia	*Tortula modica*
Bristly haircap	*Polytrichum piliferum*
Broom fork-moss	*Dicranum scoparium*
Bud-headed groove-moss	*Aulacomnium androgynum*
Capillary thread-moss	*Bryum capillare*
Common cord-moss	*Funaria hygrometrica*
Common feather-moss	*Eurhynchium praelongum*
Creeping feather-moss	*Amblystegium serpens*
Cuspidate earth-moss	*Phascum cuspidatum*
Cylindric beard-moss	*Didymodon insulanus*
Great plait-moss	*Hypnum lacunosum*
Heath star moss	*Campylopus introflexus*
Heim's Pottia	*Hennediella heimii*
Hornschuch's beard-moss	*Pseudocrossidium hornschuchianum*
Cyprus-leaved plait-moss	*Hypnum cupressiforme*
Intermediate screw-moss	*Syntrichia intermedia*
Juniper haircap	*Polytrichum juniperinum*
Lesser bird's-claw beard-moss	*Barbula convoluta*
Megapolitan feather-moss	*Rhynchostegium megapolitanum*
Neat feather-moss	*Scleropodium purum*
Pulvinate dry rock-moss	*Grimmia pulvinata*
Redshank	*Ceratodon purpureus*
Rough-stalked feather-moss	*Brachythecium rutabulum*
Sand-hill screw-moss	*Syntrichia ruraliformis*
Silver-moss	*Bryum argenteum*
Soft-tufted beard-moss	*Didymodon vinealis*
Supine plait-moss	*Hypnum resupinatum*
Thick-point Grimmia	*Schistidium crassipilum*
Tufted thread-moss	*Bryum caespiticium*
Wall screw-moss	*Tortula muralis*
White-tipped bristle-moss	*Orthotrichum diaphanum*
Whitish feather-moss	*Brachythecium albicans*
Yellow crisp-moss	*Tortella flavovirens*

FUNGUS

Alexanders rust	*Puccinia smyrnii*

ALGAE

curved red alga	*Bostrychia scorpioides*
Gut weed	*Enteromorpha intestinalis*

The data in this booklet are largely derived from the Shingle Street Biodiversity Survey, commissioned by Jeremy Mynott on behalf of the residents of Shingle Street from Abrehart Ecology in 2015. For the full report and further background, see www.shinglestreetsurvey.org.uk.

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Cover photos. Front: sea kale (Laurie Forsyth), short-eared owl (Bill Baston), otter and painted lady (Margaret Holland). Back: weasel (Margaret Holland).

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