A WILDLIFE STRATEGY FOR KELSALE-CUM-CARLTON:

The KCC Biodiversity Action Plan

'Biodiversity makes up the living landscape around us and maintains our natural 'life support system' of water, air, food and natural resources. It includes all living species and the natural systems that support them.'*

***adapted from Suffolk Biodiversity Information Service 2024**

The Parish of Kelsale-cum-Carlton

At around 14 sq.Km (3,620 acres), Kelsale-cum-Carlton is one of the larger Suffolk parishes. It was formed by the amalgamation of the parishes of Kelsale and Carlton in 1885.

Predominantly under arable cultivation, its gently undulating countryside is typical of the mid-Suffolk claylands.

The population is recorded as 990 (2011 Census) and there are 499 dwellings (eastsuffolk.gov.uk).

Chapter 1 Introduction and context

The 2023 State of Nature Report emphasised how nature continues to decline in the UK. One in six species and 43% of UK bird species are thought to be at risk of extinction.

The British Isles is now notorious as one of the ten least biodiverse nations in the world. Coupled with pressures from an increasing human population, there has never been a more critical time to assess our natural capital at a local level and devise methods to preserve and enhance it.

Some of these threats are beyond the scope of a local biodiversity action plan and we can only hope to lend support to international and national initiatives at a local level.

Overriding threats that impact all habitats and species everywhere:

1. Climate Change

   It is now almost universally accepted that global temperatures are rising due to human activity.

With the highest global temperature ever recorded in 2023, sparking unprecedented storms, floods and wildfires coupled with the highest ever recorded January temperature and wettest February on record in 2024, the warnings of imminent climate emergency have never been more pronounced.

Worldwide attempts to limit this rise before an irrevocable tipping point is reached are so far proving inadequate. If climate change is not halted the effects on biodiversity will ultimately be devastating.

2. Intensive agriculture

The environmentally destructive effects of intensive, especially arable, agriculture are well known. Issues including habitat loss, land and water pollution by chemicals, pesticides and effluent, loss of soil structure and fertility, all impact negatively on biodiversity.

3. Road Traffic

In southern Britain virtually nowhere is less than 500 metres from a road (Donald, 2023).

Roads and traffic have been shown to have severe negative effects on biodiversity in a variety of ways, including acting as physical barriers to dispersal of species, generating noise and light pollution affecting the behaviour of sensitive species, and as sources of pollution from exhaust emissions and particulates from tyres, brakes and road surfaces. Some of these have also been shown to have adverse effects on human physical and mental health.

Donald, P.F. 2023 *Traffication. How cars destroy nature & what we can do about it*. London: Pelagic Publishing.

Whilst these global issues may seem beyond the scope of a local biodiversity action plan, we can only attempt, at a local level, to support and contribute to initiatives to combat these threats as best we can.

Biodiversity Action Plans

All parishes in Suffolk are encouraged to develop their own biodiversity action plan as a key element of their wider ranging Neighbourhood Plan.

A biodiversity action plan (BAP)seeks to identify the habitats and species present in an area, lists the threats to their continued survival and identifies targeted actions to counter these threats as well as identifying opportunities for biodiversity gains.

BAPs already exist at national and county levels, this is the first BAP specific to Kelsale-cum-Carlton.

Chapter 2 Geology, geomorphology, soils, landscape of Kelsale-cum-Carlton

Geology literally underlies biodiversity in that the deposits of past geological epochs directly affect the natural habitats that have developed at the surface. In the densely populated east these natural habitats have been much modified by human activity.

Essentially a flat landscape with few hills and valleys, KCC owes its current topography to the ice ages.

Geology

Much of the Parish is underlain by glacial deposits which were laid down after the retreat of the glaciers at the end of the Anglian glaciation (425,000 years B.P.). They comprise stiff clays with fragments of chalk, flint and other rocks including fossils, some transported from as far afield as Yorkshire. This is known as Chalky Boulder Clay.

Chalky boulder clay

Other post glacial deposits of sands and gravels are derived from rivers such as the Fromus and its tributaries which were historically much larger than now.

Landscape

Although often regarded as flat, the countryside of the Parish is undulating and does have some steep hills e.g. Lowes Hill. The river terraces of the ancient River Fromus can still be made out in Low Road.

Soils

The boulder clay, although fertile, has a tendency to be very wet in winter or dry and cracked in summer and over much of its area is under intensive arable farming.

In the past, sands, gravels and clay have been quarried for various activities such as building and road mending, but none are now actively exploited.

Chapter 3 Designated Sites in Kelsale-cum-Carlton

There are no sites that enjoy any statutory form of legal protection, but the following sites and designations are recognised under planning guidance.

Lonely Wood An ancient woodland designated as a County Wildlife Site. Privately owned but currently unmanaged.

Kelsale Morio Meadow A species rich, ancient, lowland meadow designated as a County Wildlife Site. Privately owned and managed.

Sandy Stiltball Roadside Nature Reserve, An elm hedgerow bordering Kelsale Recreation Ground. Owned and managed by the Parish Council.

Carlton Roadside Nature Reserve A short section of verge designated for its chalky boulder clay flora.

Tiggins Lane Roadside Nature Reserve A section of Tiggins Lane designated for its flora and fauna.

In addition, some woodland as well as individual trees in Clayfields and within the village Conservation Area are protected by Tree Preservation Orders (TPO's).

Chapter 4: Section 1, Habitats

Section 1

Biodiversity action plans at a national and county level already exist.The following Suffolk Biodiversity Action Plan habitats are present in Kelsale-cum-Carlton:

Arable Field Margins, Hedgerows, Lowland Meadows, Lowland Mixed Deciduous Woodlands, Open Mosaic (mixed habitats), Ponds, Reedbeds, Rivers and Streams, Traditional Orchards

We have added additional habitats that we consider significant at a local level:

Built environment and developments, Established gardens, Linear features, Notable trees, Public open spaces,Sand, Gravel and Clay Pits (disused), Scrubland.

In section 2 we list some of the significant species that are known from our habitat surveys of the Parish, including:

Protected, Nationally Notable or otherwise locally significant species:

Mammals, Birds, Reptiles and Amphibians, Fish, Insects, Other invertebrates, Fungi, Mosses, liverworts and ferns, Flowering plants and Invasive species of animal and plant.

Suffolk Habitats: Arable field margins

Definition: These are linear, edge habitats around the perimeter of arable fields. They are often adjacent to hedgerows. Some are deliberately maintained to promote biodiversity.

Over 70% of the land in Britain is farmed, in Kelsale-cum-Carlton this percentage is probably even higher and the majority of local farmland is under an intensive arable regime, inimical to wildlife. There is some livestock rearing, mainly sheep cattle and poultry.

Arable farmland can have a seriously negative impact on biodiversity

Introduction of the Environmental Land Management Scheme (ELMS) should in theory make it easier to make gains for biodiversity, but progress thus far has been slow.

Arable field margins are one area where it is possible to encourage biodiversity without impacting adversely on farming operations and food production. Indeed, appropriate management of this habitat can make positive benefits to agriculture, reducing the need to use pesticides, for example.

With perhaps 85% of the Parish under arable cultivation, arable field margins could represent a considerable resource for biodiversity. Unfortunately, they are often of little biodiversity value due to their exposure to fertilisers and pesticides used on the crops in this intensive system. They are often cut at suboptimal times and support a poor flora of coarse grasses and herbs. Intensive agriculture has eliminated most of the cornfield weeds widespread in the C19th and early C20th centuries.

Exceptions are Maple Farm, Nonsuch Farm and Peak Hill Farm which are farmed along more environmental lines benefitting biodiversity.

Threats:

- Lack of field margins resulting in ploughing to the edge of fields
- Irregular cutting regimes of existing margins
- Exposure to fertilisers and pesticides
- Damage to soil structure by heavy machinery and deep ploughing
- Poor or non-existent management of hedges and ditches

Actions:

- Liaise with farmers and landowners to promote biodiversity net gain under the ELMS scheme.
- Promote good management of headlands, including ponds and hedgerows
- Monitor flora and fauna

Target: Create 500m of new arable margin habitat over 5 years

Associated species:

Brown Hare (*Lepus europaeus*), Turtle Dove (*Streptopelia turtur*), other farmland birds, arable wildflowers, invertebrates including pollinators.

Suffolk Habitats : Hedgerows

Definition: linear features of trees and shrubs maintained as boundaries. These may either be planted or represent remnants of former woodland. Many Parish hedgerows are rich in shrub and tree species and contain herbaceous species that are indicators of ancient woodland. They contain a significant proportion of the overall tree cover of the Parish.

In addition, hedgerows are important as green corridors for movement of wildlife (discussed further under Linear habitats below).

Hedgerow Data in KCC :calculated from suffolkbis.org.uk GIS parish data sets derived from Norfolk County Council data based on Environment Agency Lidar data accessed 18.2.2024

Percentage of hedgerows under tree canopy = 3-4 %

Percentage of non-woodland tree cover which is hedge = 40-60%

Percentage of boundary hedge which is gaps = 30-50 %

Percentage of field boundary length which is treed = 45-60%

Percentage of tree canopy cover which is hedge trees = 20-30%

Many miles of hedgerow remain in Kelsale-cum-Carlton, although many have been lost especially in the second half of the C20th due to changes in farming practice and Dutch Elm disease.

The richer a hedge is in woody species, the more ancient it is likely to be. One of the oldest surviving is at Simpson's Fromus Reserve (Bowdrey and Dickerson, 2023).

A local survey, carried out in 2009 found that a high proportion of the surviving hedgerows in KCC contained over 8 woody species suggesting that they are some antiquity.

Wide, tall hedges (l.) are important for nesting birds such as the critically endangered Turtle Dove, whereas thin gappy hedges (rt.) support little biodiversity.

Hedges were once managed by traditional techniques such as layering in order to provide a stock-proof barrier. With the transition to arable farming hedges are not valued, shredded by mechanical cutters, often damaging trees and shrubs and cutting off flowers, fruits and berries and destroying nesting opportunities for birds, depending on the timing of cut. Hedge laying has recently been reinstated at Maple Farm.

Gaps in hedges, sometimes the result of the loss of elm, can present barriers to dispersal of some species.

Old layered hedge, Tiggins Lane and newly layered in 2022, Maple Farm

Many hedges are now in a poor state with gaps and leggy growth, often with little width.

Modern day hedging and ditching in progress 2024- result: a narrow, gappy hedge with low wildlife potential and no field margins

Threats:

- Grubbing up and removal
- Inappropriate management
- Lack of maintenance
- Disease such as Ash Dieback, Sudden Oak Decline etc.

Actions:

- Monitor and record existing hedges
- Identify important hedgerows acting as wildlife corridors
- Encourage appropriate management of existing hedges
- Encourage traditional techniques such as layering
- Encourage and facilitate planting of new hedges and gapping up of existing hedges with appropriate woody species
- Where possible retain standing and other dead wood in hedges where this does not compromise safety.

Associated species:

Turtle Dove, Sandy Sandy Stiltball fungus, invertebrates, native flora

Suffolk Habitats : Lowland Meadows

Definition: Long-established areas dominated by a close sward of grasses and wildflowers and usually subjected to a regular and appropriate cutting regime.

Conservation designations: Kelsale Morio Meadow is a County Wildlife Site

Green-winged orchids and Cowslips at Kelsale Morio Meadow

Species rich meadows that have been managed traditionally and have not been subjected to 'improvement' by fertilisers or herbicides.

Since WWII such traditionally managed meadows have suffered a massive decline nationally, estimated to be in the region of 97 %. Reasons include agricultural intensification, building and lack of management leading to scrub invasion.

In KCC only a handful of such meadows survive, amounting to only 0.2% of the total land area of the Parish. All are in private ownership.

By definition, ancient meadows cannot be created, but advances in habitat creation mean that new flower-rich meadows can be recreated on suitable sites, using locally sourced seed. or plug plants.

Associated species:

Orchid species, Adder's Tongue Fern, Pepper Saxifrage, Cowslip, invertebrates

Examples:

Bell and Half Gull Meadow (1 acre), Kelsale Morio Meadow (3.1 acres), Walnuts Meadow (0.8 acres) Rosemary Lane: a meadow heavily grazed by horses. Not surveyed but has ox eye daisy and black knapweed, suggesting it is of conservation value.

Other Grassland

Many acres of grassland exist in the Parish, but these have been subjected to complete or partial 'improvement' by being treated with herbicides to eliminate most wild flowers. These are termed 'improved' or 'semi-improved' grasslands.

East and North Greens were former extensive open grassland areas but were enclosed in the C19th century and taken into private ownership.

Current uses of improved grasslands include extensive lawns, grazing paddocks, football pitches etc., where a short sward maintained by intensive mowing or grazing.

The fashion for rewilding or wilding such areas, particularly in gardens, appears not to have caught on to a high degree in the Parish with many of the larger houses maintaining very short grasslands, which are not biodiverse and contribute by their management to emissions.

Indeed, two grass fields on Main Road have been ploughed up in 2023/4. Part of the recreation ground, set aside to encourage and enhance its flora, is now much reduced, apparently to promote ease of use by football spectators.

Threats:

- Inappropriate changes to management
- Lack of management
- Improvement by fertilisers, weed killers etc.
- Agricultural activities
- Development
- Excessive grazing pressure

Actions:

- Encourage continued traditional management of existing meadows
- Seek statutory protection for surviving meadows
- Identify and protect any additional qualifying areas in the Parish
- Seek to establish new meadows where appropriate
- Investigate the possibility of using hay from existing meadows to seed new meadows
- Enhance existing grassland, where appropriate, by introducing native flora

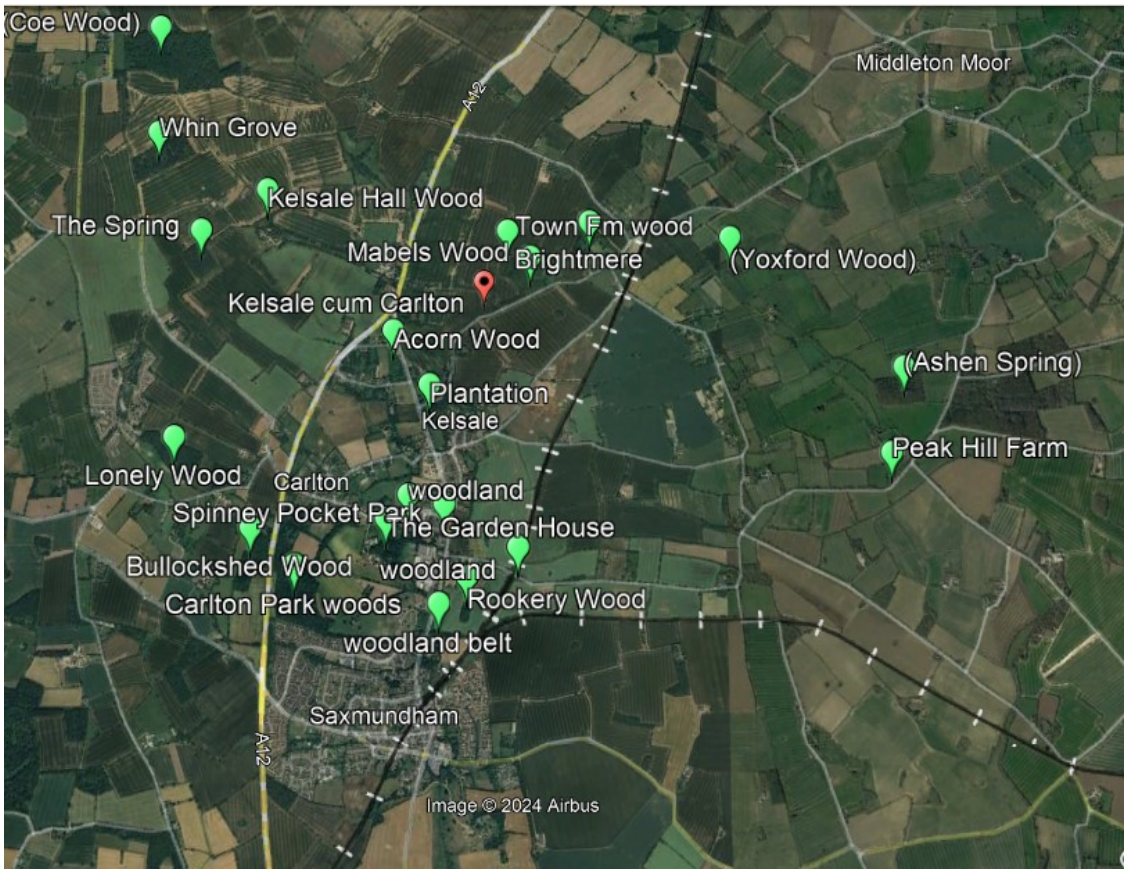
Targets:

- All meadows fully protected by 2025
- Suitable management in place by 2025
- Create 3 new meadows on suitable sites in the next 5 years

See also HABITATS: Roadside verges, Open Mosaic, Gardens and species

Suffolk Habitats : Lowland Mixed Deciduous Woodland

Woodlands of all types are a scarce habitat in Kelsale-cum-Carlton and this has been the case at least since the C19th. (see tythe map)



Lowland deciduous woodland (Sites in brackets on parish border) Google Earth 2023

TREE DATA for KCC : calculated from suffolkbis.org.uk GIS parish data sets derived from Norfolk County Council data based on Environment Agency Lidar data accessed 18.2.2024

Tree Canopy Cover as a % of land area = 10-15%

Broadleaved Woodland tree cover = 5-10%

Conifer Woodland tree cover = 0-1%

Non-woodland tree cover = 6-9%

Scrub tree cover = 0.1-0.5%

Ancient Woodlands

Defined as wooded areas which have been under continuous tree cover since at least 1600 AD.

Designations: Lonely Wood County Wildlife Site is the only ancient woodland of any size and this is much reduced in area and not currently managed.

A small patch of probably ancient woodland exists at the entrance to Peak Hill Farm, just on the Parish boundary.

Coe Wood County Wildlife Site borders the northern parish boundary but is entirely situated in Sibton Parish

Somersham Wood (20 acres) lay to the east of Tiggins Lane and was grubbed up pre C19th (Bowdrey, 2022)

Bowdrey, J. 2022 Somersham Wood: Kelsale-cum-Carlton's lost woodland. Suffolk Natural History **58,** 27-35.

Secondary Woodlands

These are woodlands that have arisen on previously unwooded sites either by deliberate planting or natural colonisation of vegetation. Their ground flora lacks ancient woodland indicator species but they still provide valuable habitat for wildlife.

Some of these were formerly meadowland or orchards and have since reverted to woodland.

It has not been possible to survey most of these woodlands as they are privately owned and some are used for shooting.

Main Secondary Woodlands in KCC

Bullockshead (Bullockshed) Wood: bisected by the A12 bypass

Not surveyed. Buzzard (*Buteo buteo*) and invertebrate records seen from adjacent public F.P..

Carlton Park: Oak Ground, Ash Ground and Gardener's Belt

Largely unmanaged and criss-crossed by unofficial footpaths, some woodland species including ramsons (*Allium ursinum*) and spurge laurel (*Daphne laureola*), woodland birds including treecreeper (*Cercia familiaris*), badger (*Meles meles*), deadwood invertebrates and several woodland ponds support the largest colony of common frog (*Rana temporaria*) known in the Parish.

Clayhills Road opp. Oak Tree Farm

Not surveyed

The Garden Wood, Kelsale Hall

Not surveyed

Rookery Wood: Rookery Farm. Protected by TPO

Not surveyed. An eastern extension of the wood was grubbed up. Apparently otherwise unmanaged.

The Spring, west of Kelsale Hall

Not surveyed

Whin Grove, north-west of Kelsale Hall: Formerly orchards?

Not surveyed but roe (*Capreolus capreolus*), fallow (*Dama dama*) observed together with possible nesting buzzard (*Buteo buteo*) .

Woodland at Town Farm: Formerly pasture, used for shooting.

This was formerly pasture. A brief survey found a large pond polluted by farm waste and some veteran oaks (*Quercus robur*).

In addition there are several small plantations in the Parish.

Plantations

Corner of Tiggins Lane and Main Road. C19th

Mabel's Wood, Tiggins Lane late C20th

Whales Mouth Meadow late C20th? Mainly deciduous plantation .

Linear strips of wooded land

Carlton Road: TPO

Clayhills Road: West of the railway. TPO

Kelsale Hall: by FP10 south of the hall

Main Road: south of Rookery Wood. TPO

Threats

- Clear felling and grubbing up
- lack of active management
- tree pathogens and pests

Targets

- obtain permission from landowners for biodiversity surveys of woodland
- identify a suitable site for a community woodland comprising native trees and shrubs and flora
- encourage woodland management
- encourage retention of deadwood

Key species:

Badger, Buzzard, Tawny Owl , woodland indicator plant species, trees and shrubs

Suffolk Habitats : HABITATS: Open Mosaic

Tiggins Meadow

This term covers areas where there is a mix of habitat features occurring on site, often in close proximity. These may include hedgerows, ponds, streams, woodland and other natural features.

Examples

Tiggins Meadow, Simpson's Fromus Reserve, Park Gate Farm, churchyards, Carlton Meres site

Suffolk Habitats : HABITATS: Reedbeds

There are no naturally occurring reedbeds in KCC but a small man-made reedbed is established at Carlton Meres (TM366648) for the treatment of wastewater.

Suffolk Habitats : Ponds and lakes

Ponds are smaller bodies of water, either permanent or temporary and in our area, usually man-made in origin. They have a variety of origins, for watering livestock and other agricultural uses for marl or other mineral extraction.

Lakes are larger bodies of permanent water and may also serve as reservoirs.

'definition of a lake'? The only lakes in the Parish are currently at Carlton Meres and are used for fishing. They do attract some wildfowl but lack fringing vegetation for the most part.

Fishing lakes are being developed on former scrub land at Curlew Green and on former improved grassland at North Green. Densities of fish stocks are unlikely to be beneficial for aquatic life.

Pond data

The Tithe Map for Kelsale-cum-Carlton, surveyed in 1839, shows 231 bodies of water interpreted as ponds, compared to 132 shown on the recent edition of the 1:25,00 Ordnance Survey Map, a loss of 43%.

Many ponds have disappeared since the C19th due to changes in agriculture from livestock to arable and the provision of piped water for livestock. Of the surviving ponds, many are in poor ecological condition due to lack of management since their original purpose has become redundant.

These ponds are often shaded, surrounded by trees and scrub, full of leaves and dead wood and isolated in the middle of now arable fields. Many are dry for large parts of the year. Others are polluted by run-off from roads, farm effluent including spoiled grain, or insecticide and herbicide sprays, as well as inorganic fertiliser which can lead to algal blooms. The infilling of ponds still unfortunately occurs today, but there are also encouraging signs of pond restoration and creation in the Parish.

Fig. Pond over 184 years old infilled with builder's rubble 2020

There are still some biodiverse ponds remaining, for example the round pond on Simpson's Fromus Reserve, excavated in the 1800s .

Ponds are capable of being restored by careful reduction of bankside vegetation and removal of silt. This is best done in a phased way to allow flora and fauna to adjust to the new conditions.

Examples

A pond near East Green which was dug out in late 2022 in connection with land drainage, by summer 2023 the seed bank had given rise to aquatic and marginal vegetation later resulting in colonisation by invertebrates.

Several ponds at Maple Farm have been restored to the benefit of amphibians and invertebrates.

Ghost ponds are ponds, identified from older maps, that have since been infilled. By re-excavating them the buried seed bank is reactivated and the pond restored to life.

Example

A former pond at Nonsuch Farm, located from old maps and re-excavated as part of a regenerative farming project, has regained some of its former flora from the c 50 year old buried seed bank.

Colonisation by animal life takes longer to achieve as this must come from suitable habitat in the surrounding area.

Several new ponds have recently been created. Some of these are to encourage wildlife to colonise, whilst others are for fishing. The presence of fish is, however, often inimical to the establishment of wildlife such as amphibians and invertebrates.

Once created, ponds need continued management to prevent them silting up and becoming too shaded.

Example

New ponds to encourage wildlife, including Great-crested Newts have been created at Nonsuch Farm. Whilst these will take longer for wildlife to colonise, it is hoped they will eventually support a wide range of aquatic plant and animal life.

Temporary ponds

These are areas where water accumulates during periods of high rainfall but the water does not persist. They can be home to some specialist plant and invertebrate species.

Temporary pool beside Tiggins Lane

Associated species:

A variety of native aquatic vegetation

Great-crested Newt (*Triturus cristatus*), Common Toad (*Bufo bufo*),

Odonata (Dragon and Damselflies), water beetles, freshwater molluscs

Threats:

- Lack of management
- Isolation in a hostile landscape
- Lack of connectivity to the wider countryside
- Pollution by road runoff, oil etc
- Eutrophication
- Abstraction and/or drought lowering the water table
- Silting and hydrosere succession
- Infilling
- Stocking with fish for angling
- Release of unwanted pet fish, such as goldfish and disposal of invasive alien water plants such as New Zealand Stonecrop (*Crassula helmsii*)
- Climate change

Targets:

- Survey more ponds
- Encourage restoration of the best surviving ponds identified above
- Create or re-excavate 20 new ponds in the next ten years

- Link existing ponds to the wider countryside
- Encourage the creation of buffer zones around ponds

Suffolk Habitats : Rivers and streams

Definition: Linear, flowing bodies of water either permanent or seasonal.

River Fromus

The principal river in the Parish is the River Fromus, a tributary of the River Alde arising in Sibton. Known in the village centre as 'the Gull', for much of the year the riverbed is dry, although there may be some water retained in residual pools and possibly beneath the riverbed sediment. In times of high rainfall, the river runs in spate and in the past has led to flooding in the village centre.

The only substantial semi-natural section is in Simpson's Fromus Reserve where meanders, pools and riffles occur, creating a more biodiverse ecosystem with aquatic vegetation and animal life including protected species such as water vole.

As the river is prone to drying up, the only frequent water plant along much of its length is the aquatic moss *Fontinalis antipyretica* which can withstand prolonged periods of dehydration.

As well as contributing to flooding, agricultural run-off contains organic chemicals as evidenced by the development of foam on the water.

Threats:

- Pollution from road runoff, agricultural fertilisers and pesticide sprays etc. In 2024 pollution by suspected fuel oil was reported in Gull Stream at Carlton.
- Straightening and canalisation
- Water abstraction
- Climate change

Targets:

- Seek to allow a more dynamic water course where appropriate by restoring meanders and other natural features
- Reduce the steepness of the riverbanks in appropriate places
- establish and tackle levels of abstraction and pollution
- Investigate the feasibility of introducing beavers, proven natural ecosystem engineers

Gull Stream

Although a smaller water course than the River Fromus, the Gull Stream retains water for most of the year. It arises in the vicinity of Carlton Meres and runs alongside the Lonely Wood County Wildlife site, then through farmland before passing under the A12, through Carlton Park before passing under Main Road to join the River Fromus.

Threats:

- Pollution from road runoff, agricultural sprays and domestic sewage
- Water abstraction
- Alien plants such as Policeman's Helmets or Indian Balsam (*Impatiens glandulifera*)

- Climate change
- lack of management including of streamside trees

Key species:

Water vole and otter, Water cricket and other aquatic invertebrates, riparian flora including willows

Suffolk Habitats : Traditional Orchards

Abandoned orchard at Carlton

Traditional orchards are valuable both for the preservation of local fruit tree cultivars and for their specialised biodiversity.

Many of the orchards shown on earlier editions of the Ordnance Survey maps have been grubbed up as fruit growing became unprofitable. Most recently, part of the land now included in the Nonsuch Farm regenerative farming project was a former plum orchard.

One orchard was bisected by the A12 bypass, half having been abandoned to scrub and the remainder used as a campsite. Other fragments survive as odd groups of trees e.g. land off Carlton Road and at Parkgate Farm..

Sadly, there are no quality traditional orchards now surviving in Kelsale-cum-Carlton. To address the loss of orchards, some parishes have created community orchards where local people can pick seasonal fruits.

In 2023 planting of fruit trees commenced at the regenerative farming project at Nonsuch Farm.

Targets:

- Encourage planting of new privately owned orchards using local varieties
- Create a Parish Community Orchard
- Encourage the planting of local varieties in gardens and other suitable places

Additional Kelsale-cum-Carlton BAP Habitats

KCC Habitats: Built environment and developments

The parish has already accommodated one substantial housing development at Artillery Meadow and it is likely that further developments are inevitable over time.

More recently, the development of infrastructure supporting Sizewell C and offshore power generation will further impact local habitats.

Threats:

- Siting of development on, or near, land of high biodiversity interest
- Disruption of wildlife corridors
- Pollution and disturbance

- Increased traffic

Actions:

- All new developments to demonstrate Biodiversity Net Gain
- Ensure comprehensive environmental survey of potential development sites is carried out professionally at the appropriate time of year
- Ensure creation of high quality compensatory habitat for any permitted developments
- Preserve as far as practical, existing features such as hedges, ponds, grassland.
- Ensure wildlife-friendly features are incorporated into new developments,
- Work with developers to enhance biodiversity

KCC Habitats : Established Gardens

Many larger and some smaller gardens in the parish provide valuable habitat for biodiversity and some are actively managed for wildlife by their owners. Unfortunately, many more are managed in a way that does not benefit biodiversity and is in many cases actually detrimental to the environment. Acres of close-mown grass support few species and their maintenance has a high carbon footprint.

Threats:

- Lack of protection for established biodiversity when properties are sold
- Fragmentation of larger gardens for development
- Unsympathetic management

Actions:

- Encourage and advise on wildlife-friendly gardening
- Promote initiatives such as 'No Mow May'

Key species: Common Frog, Great Crested newt, hedgehog, garden birds

KCC Habitats : Linear Features other than hedges

These comprise a variety of man-made landscape features such as roadside verges, railway lines, footpaths and tracks, spongs etc..

Wildlife Corridors

Continuity of habitat along such linear features can provide valuable corridors along which wildlife can disperse as well as live, but can also form serious barriers to dispersal. Enhancing such corridors and filling gaps can greatly improve continuity of habitat both within KCC and linking to adjoining parishes.

Roadsides

Designations: Three roadside verges are designated as Roadside Nature Reserves: Main Road Kelsale for the Sandy Stiltball fungus, and Tiggins Lane and Carlton for their flora.

The A12 cuts the Parish in half and as such is a barrier to dispersal of wildlife. No provision is made for safe crossing of this busy road by wildlife or humans, as is evidenced by the number of deer, foxes, badgers and other animals that are seen dead on the roadside as a result of traffic collisions.

A Roadside Nature Reserve has been established beside Main Road, Kelsale to protect the rare Sandy Stiltball fungus.. However, main roads are, by enlarge, hostile to biodiversity. Apart from collisions with wild animals, verges are kept mown short for safety reasons and are subjected to salt spray and rubbish thrown or falling from vehicles.

Under a Suffolk County Council scheme 'Pardon our Weeds' some verges have been left to benefit pollinators. Some of these do not have a very rich flora and thus attract criticism from some quarters.

Minor roads including Quiet Lanes are more conducive to biodiversity, often having flower rich verges and hedgerows. Part of Tiggins Lane and a short stretch of verge at Carlton are designated as Roadside Nature Reserves and managed appropriately on account of their flora.

Because of their undisturbed nature, minor roads are sometimes subject to fly tipping as well damage to their verges by traffic, farm vehicles and hedge cutting machinery.

Threats:

- Lack of management leading to scrub invasion
- Damage by vehicles
- Nutrient enrichment due to leaving of arisings after cutting
- Dumping of material from ditch clearing
- Fly tipping

Actions:

- Identify additional verges of importance
- Designate more protected verges
- Ensure uncut pollinator verges are suitable
- Remove arisings from sensitive verges after cutting
- Cut at optimum time for seed set
- Erect posts or other barriers to prevent vehicles leaving the carriageway in sensitive areas

Public Footpaths

The network of public footpaths can pass through areas rich in biodiversity and are often the only way that the public can access the countryside on foot. Unfortunately, some are poorly marked or not reinstated following ploughing.

Leaning, damaged waymark and ploughed up footpath

Threats

- Unofficial realignment or closure of paths by landowners
- Lack of maintenance restricting or limiting access
- Poor or missing signage discouraging use

Actions

- Appoint a Parish footpath officer
- Report any access problems to East Suffolk Council
- Develop a series of self-guided local footpath leaflets to promote footpaths

Railway Line

The East Suffolk Railway line represents a major habitat and wildlife corridor, linking habitats within KCC and also to neighbouring parishes. Apart from level crossings and stations, it constitutes a virtually unbroken linear feature with grassland, scrub and woodland existing on the trackside. The lack of public access means it is also relatively undisturbed, with wildlife soon adapting to the occasional passing of trains.

Having been in existence since the 1830's there is potential for some scarce species to be found here, but access for survey is not possible.

On the negative side, the spread of ash dieback disease and fear of falling timber, has led to most ash trees, including healthy examples, being felled along the line.

 A mosaic of habitats trackside

Key species: reptiles, small mammals, invertebrates, flora.

Spongs

These are narrow, elongated pieces of land bordered by hedges and standard trees. They may have semi-natural grassland between the hedgerows.

Examples

Between Parkgate Farm and Simpson's Fromus Reserve and at White House Farm, North Green.

Fig. Spong at North Green Farm

Threats:

- Disruption of linear habitat continuity.
- grubbing out of trees and shrubs
- lack of, or inappropriate management

Actions:

- Identify and survey wildlife corridors

- Monitor linear features to ensure continuity
- Encourage ‘gapping up’ where necessary

KCC Habitats : Veteran trees

These are examples of trees that are significant on account of their great size or age, cultural significance or scarcity. They are being recorded and notable examples notified to the Woodland Trust’s Ancient Tree Survey. The largest tree known in the Parish is a pedunculate oak (*Quercus robur*) on private land at Rubblestone Farm.

Kelsale -cum-Carlton’s largest tree

Threats

- Felling and removal
- Inappropriate pruning
- Scrub invasion

Actions

- Continue identifying, measuring and mapping significant trees
- Compile an inventory of notable trees
- Seek protection for vulnerable trees through TPO’s if required

Examples

The Rubblestone Farm oak, KCC’s largest tree, veteran Sweet Chestnuts at Carlton Park and a large Pear at North Green.

Deadwood

Many old trees have dead and dying limbs or heart rot and even after death, trees represent a considerable resource for invertebrates and other wildlife. Standing dead wood is particularly valuable but fallen boughs and trunks are also useful.


Standing trunk retained Felled and logged: but later removed


Smaller material stacked

Threats:

- Over-tidiness leading to clearing of dead wood.
- Burning or chipping of cut material
- Removal for firewood

Actions:

- Encourage retention of standing dead wood where this does not create safety issues.
- If a dead tree presents safety concerns leave large sections to discourage removal for firewood (see above) or reasons of tidiness.
- Smaller logs and branches can be stacked to provide useful habitat

Key species: dead wood (saproxylic) invertebrates, fungi, bats and hole nesting birds

KCC Habitats : Sand, gravel and clay pits

A large number of pits formerly existed in the parish, all those surviving are now disused.

Anecdotal evidence of nesting sand martins in a village centre sand pit emphasises the biodiversity potential of abandoned mineral workings, but the reality is that their value declines as they become overgrown after the cessation of mineral extraction.

With one exception, most old pits are in private ownership.

The old brick pits at Carlton now have a good cover of secondary woodland and the former pit now occupied by the village allotments has developed into a rich wildlife site.

The fate of other pits is less favourable, they have been infilled and landscaped, used for rubbish disposal, both garden waste and building material, built on and used as a car park to illustrate with a few examples.

Threats

- Infilling
- fly tipping
- loss of open areas
- development of rank vegetation

Actions

- Identify all surviving old pits in the Parish and assess their current state
- Demonstrate positive uses for abandoned pits
- Attempt restoration of a former pit to more open habitat
- Encourage and enhance biodiversity in old pits

Key species:

Badger, nesting birds, invertebrates

KELSALE-CUM-CARLTON BIODIVERSITY ACTION PLAN

SECTION 2: Species

The disappearance of once common wild plant and animal species from the wider countryside alerts us to the threats to the biodiversity of our own local area.

There are now more introduced plant species than native ones in the wild (BSBI, 2023), insects have undergone huge declines even on nature reserves, once common birds are now Red Listed and endangered. The list is endless and nature recovery is vital to our own survival. By acting locally we may be able to stem this decline.

Firstly, we need to identify which species exist in our area, where they are to be found, the threats to their survival and the actions required to preserve them.

The plants and animals listed below are just some of those discovered by recent surveys. Some are nationally scarce, others locally threatened, a few common. Most have a very limited distribution in KCC, though they may be more widespread in the wider Suffolk countryside and nationally. Nonetheless, these species are still significant at a local level, characterising the uniqueness of our own area.

Also included are some species which have bucked the downward trend, although this may, in some cases, be due to climate warming or human introduction.

We cannot know how much of our past biodiversity has been lost, but the continued survival of these and other species relies entirely on the preservation and appropriate management of their habitats.

Flowering Plants and Ferns

Ophioglossum vulgatum **L. Adder's Tongue Fern** Native fern

A native fern of damp, acid to chalky soils. Found mainly in meadows and pastures but also in woods, fens, marshes and heaths. Occurs in 94 tetrads in Suffolk (A Flora of Suffolk, 2010) but known only from two sites in KCC, Kelsale Morio Meadow and Dorleys Corner Meadow. The ecology of this species makes it unsuitable for introduction to newly established meadows.

Threats:

- Increase in soil fertility
- Inappropriate management
- lack of management
- Climate change

Actions:

- Encourage the continuation of appropriate management of existing sites
- Seek statutory protection for these sites.
- Survey for further locations for the fern and continue with existing, or introduce appropriate management where located.

Targets:

- All meadows with adder's tongue protected by 2025

Achillea ptarmica **Sneezewort** Native perennial

Favouring wet, acid soils in old pasture, heath and fens the occurrence of sneezewort at its only KCC location on the verge of Tiggins Lane is perhaps unusual. This is the native form of the plant, cultivars with double flowers being more commonly found.

This stretch of verge now enjoys protection as a Roadside Nature Reserve (RNR) enabling the sneezewort to successfully set seed in the past two seasons,

Anemone nemorosa **Wood Anemone** Native perennial

An indicator species of ancient shady woodlands on boulder clay. Frequnt in Lonely Wood County Wildlife Site (CWS) a single plant near the River Fromus, in the Recreation Ground, may be a descendant of plants from the old Somersham Wood which once occupied land to the north-west. Its existence is threatened by over-enthusiastic strimming in the recreation ground.

Inula conyza **Ploughman's Spikenard** Native biennial or perennial

Thinly distributed on exposed chalky, sandy or clay soils. One site only in 2020 in the north of the Parish, where ditch profiling had been carried out.

Lamiastrum galeobdolon **Yellow Archangel** Native Perennial

A plant of moist shady places such as ancient woodlands or hedgerows marking the edges of former woodlands. The latter is the probable origin of a single plant in the hedge of Maple Farm, the only example known in KCC.

A variegated silver garden form is found more widely and can be invasive, for example as beside the footpath from St. Mary and St. Peters church to Tiggins Lane.

Misopates orontium **Weasel's Snout or Lesser Snapdragon** Archaeophyte

Weasel's Snout

Probably introduced before 1000 AD this annual is found on disturbed land with light soils. Our only site is on the village allotments. Declining nationally, this plant is classed as vulnerable.

Along with Corn Cockle and Cornflower, it is one of many arable plants that were formerly much commoner before modern seed cleaning techniques and herbicides were developed.

Galium verum **Ladies' Bedstraw** Native perennial

Common on light soils throughout Suffolk our only colony is at Carlton churchyard, where appropriate sandy soil conditions are found and mowing has been reduced to preserve it. Part of the colony is imminently under threat from shading by adjacent oak trees. For this species, suitable soil type is the limiting factor in its distribution locally.

Knautia arvensis **Field Scabious** Native perennial

Preferring well-drained neutral to chalky soils, this attractive flower was once found commonly in grassland by roadsides, footpaths etc and is able to compete to some extent with the rank grasses that increasingly occur in such habitats. Nonetheless, there are only three surviving patches of the plant in KCC. One is protected on the verge of Tiggins Lane RNR, one beside a footpath at Nonsuch Farm and one at the edge of an arable field entrance where it is often damaged by farm machinery or mown off. Plants from these sites have been propagated and planted at other sites as an insurance for these wild colonies.

Trifolium fragiferum **Strawberry Clover** Native Perennial

At inland localities such as in KCC, strawberry clover is found on moist clay soils, mainly in old meadows and pastures on the boulder clay.

The edge of the car park outside St. Mary and St. Peters church is the only known site in KCC. At this site being driven over by vehicles and mowing of the grass at inappropriate times are the principal threats.

Orchids

Several species of orchid occur in the Parish. As well as being found in meadows and verges, the bee, common-spotted and lesser marsh orchid are ready colonisers of abandoned agricultural land and can occur in their hundreds at such sites. In contrast, the much scarcer early purple orchid is an indicator of high quality habitats.

Fungi

The Sandy Stiltball (*Battarea phalloides*) is an internationally endangered species found in autumn at the base of elm hedges. A colony in the base of the playing field hedge on Main Road has been given special protection as a Roadside Nature Reserve (RNR) although changes in hedgerow management may still threaten the continual survival of the species at this site.

Fortunately a second site has recently been discovered nearby.

Fruiting bodies of the Sandy Stiltball

Animal Life

Mammals

Over half of Suffolk's 46 recently recorded species of land and freshwater mammal (Bullion, 2009) are still to be found in the Parish but their secretive habits mean they are not often encountered, except perhaps as road casualties.

The Red Squirrel (*Sciuris vulgaris*) was formerly widespread in Suffolk, including in our own area [1], but was lost from the County by 1990 (their niche occupied by the introduced Grey Squirrel (*Sciuris carolinensis*).

Two species likely to colonise the Parish in the near future are the native Polecat (*Mustela putorius*) and the introduced Chinese Water Deer (*Hydropotes inermis*).

Species of conservation concern:

Harvest Mouse (*Micromys minutus*) **UK Biodiversity Action Plan Species**

[1] Cranbrook & Payne, 1965 Trans.Suffolk Naturalists' Society 13(2),82-85;

 Harvest Mouse nest

This attractive, small rodent has undergone a population crash due mainly to changes in farming practices. It still survives at low density in hedge bottoms and reedbeds but is not encountered in arable fields nowadays, due to changes in farming practice.

Bats: All species and their roosts protected under the Wildlife and Countryside Act 1981

The species of these flying mammals that have been recorded in KCC are Natterer's Bat (*Myotis natteri*), Serotine (*Eptesicus serotinus*), Common and Soprano* Pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*) and Brown Long-eared* (*Plecotus auritus*) species marked * are UK Biodiversity Action Plan Species. The common pipistrelle is the most widespread bat in the Parish.

St Marys and St Peters church is a key site for bats.

Hedgehog (*Erinaceus europaeus*) UK Biodiversity Action Plan Species

Hedgehog

Once a familiar garden species, the catastrophic decline of hedgehogs nationally is mirrored locally. Ten years ago evidence from the frequency of road casualties showed that hedgehogs were fairly widespread, at least in more populated areas. Nowadays they are rarely seen and are absent entirely from intensive arable farmland.

Otter (*Lutra lutra*) Protected species

Wildlife and Countryside Act, 1981; Conservation (Natural habitats etc.)Regulations, 1994; Priority species in the UK and Suffolk Biodiversity Action Plans.

Conservation action undertaken by the SWT Otters and rivers project 1999-2002) and Water for Wildlife Project 2002 onwards.

No established population. Only encountered as occasional animals dispersing along rivers such as at Dorley's Corner in . A species that might benefit from more sympathetic management of our rivers.

Badger (*Meles meles*) Protection of Badgers Act, 1992

This protected species is widespread, albeit at low density, but is most often encountered as a road casualty. Details of locations of its underground setts are withheld to protect the species from persecution.

Water Vole (*Arvicola terrestris*) Wildlife and Countryside Act, 1981

Protected under Schedule 5 as amended 1998 and 2008; Priority SpeciesUK and Suffolk Biodiversity Action Plan

Occasional sightings on the River Fromus at Simpson's Fromus Reserve and the Gull Stream. No established populations are known, but the species could benefit from the re-engineering of these watercourses for flood prevention. The water vole is vulnerable to predation by the introduced American Mink (*Mustela vison*), but Suffolk was in 2024 declared free of this pest species.

Brown Hare (*Lepus europaeus*) UK and Suffolk Biodiversity Action Plan

Brown Hare

Adapted to arable habitats, brown hare can sometimes be seen in the fields even quite near to the centre of Kelsale, especially in early spring. Despite being a BAP species, the Ground Game Act of 1880 allows farmers to kill them to protect crops. Hares have declined nationally by 80% during the last century.

Birds

xxx species of bird have historically been recorded in Suffolk but this total includes many species seen only rarely. The exact total of bird species occurring in the Parish is unknown, as is the total that breed successfully, but most species are in decline reflecting trends nationally. Both spring and autumn migrants boost the numbers of resident species each year, but these too are declining.

Birds of conservation concern occurring in Kelsale -cum-Carlton

Turtle Dove (*Streptopelia turtur*) Red List

Turtle dove

The Parish once held above-average numbers of this migratory species but there has been a marked decline recently. Changes in agriculture and persecution on migration are mainly responsible.

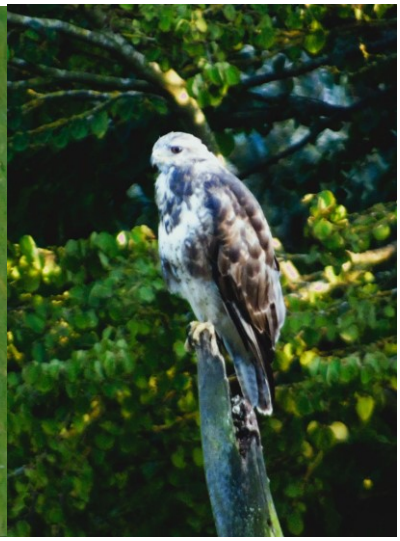
This decline is matched by another migratory species , the Cuckoo (*Cuculus canorum*). Small numbers occur in spring, but there is no suitable habitat occurring nor evidence of breeding in KCC.

House Martins, Swallows and Swifts are associated with human habitation, all are migratory and all have declined in numbers in recent years.

House Martins

House Martins no longer nest in Kelsale village centre but the erection of artificial nest boxes has boosted swift numbers in recent years. These species can be encouraged in new developments and provision of nest sites should be mandatory in such developments.

Once common birds such as the Starling and House Sparrow are now seldom seen and farmland birds such as Yellowhammer (above), Linnet and other finches have declined in line with the situation nationally.Regenerative farming can help reverse this decline as evidenced by the large number of finches seen recently at Nonsuch Farm.



Barn Owl Buzzard

Tawny owls (Amber List)are still heard frequently around Kelsale village and Barn Owls (Amber List) (above) have used artificial nest boxes installed for their use, for example at Tiggins Meadow.

Raptors, however, appear to be doing rather better. Buzzards (*Buteo buteo*) are now a common sight and sound and Kestrels (*Falco tinnunculus*)(Amber List) have successfully nested near the churchyard. Sparrowhawks (*Accipiter nisus*) are sometimes seen around gardens in the Parish. More recently Red Kites (*Milvus milvus*) (above)have been seen over KCC.

Reptiles and Amphibians

Three species of reptile , two species of lizard and one snake have been recorded. There are anecdotal reports of Adder (*Vipera berus*), but lack of suitable, undisturbed habitat in the area makes it likely that these were based on misidentifications. Pheasants have been implicated in the decline of reptiles in the countryside.

Common Lizard (*Zootoca vivipara*)

The scarcest of our local reptiles, the stronghold of common lizards in the Parish seems to be linked to the railway line and its banks and cuttings, with sightings beside level crossings and bridges. There are occasional records at other sites, probably the result of colonisation from these primary sites..

Slow Worm (*Anguis fragilis*)

This legless lizard is widespread and sometimes seen as a road casualty in local lanes. The allotments hold a healthy population of this beneficial and harmless reptile.

Grass snake (top) and slowworms Kelsale Allotments

Grass Snake (*Natrix natrix*)

Our largest native snake, the harmless grass snake, is found occasionally in the Parish, in gardens where it preys on frogs and newts in garden ponds.

Great Crested Newt (*Triturus cristatus*)

This protected newt has been found in most of the larger ponds we have surveyed. Strong populations occur at Maple Farm where pond restoration has been carried out.

Smooth Newt (*Lissotriton vulgaris*)

The commonest amphibian species in our area, found in garden ponds, ditches and other smaller water bodies.

Common Frog (*Rana temporaria*)

Common Frog Mating Common Toads

No longer a common species locally, the frog prefers to breed in smaller, often temporary water bodies and readily colonises garden ponds. Numbers have declined recently and it is rarely able to survive in arable habitats. Carlton Woods holds a good population, as do several village centre garden ponds.

A small colony clings on at one farmland pond but the species is virtually absent from arable farmland.

Common Toad (*Bufo bufo*)

Preferring deeper water there are few known breeding sites in the Parish. Male toads were heard calling at Maple Farm and road casualties nearby suggest a small breeding colony in this area, another possible site near Tiggins Lane remains to be located. Toads disperse widely after spawning and are often killed on roads and lanes as they migrate to and from their breeding areas.

The largest breeding colonies of both the above species seems to have been based around Curlew Green and Dorleys Corner but numbers have decreased severely.

Fishes

The tendency of the River Fromus to run dry means that fish species are generally absent here. Some dead, unidentified fish were found in the dry river bed at Simpson's Fromus Reserve and Three-spined Stickleback (*Gasterosteus aculeatus*) are known further downstream at Saxmundham.

Fish may also be present in the Gull Stream which has a more consistent flow.

Rudd (above) have been found in ponds surveyed at Curlew Green and East Green, and are probably introduced.

Invertebrates

Assessment of the potentially large number of invertebrate species likely to be found in the Parish has scarcely begun, the following list includes the more interesting discoveries thus far, as well as some species of conservation concern.

Orthoptera (Grasshoppers and Crickets)

Around ten commoner species seem to be widespread in suitable areas including a recent colonist, the Southern Oak Bushcricket (*Meconema*) a flightless species introduced by human agency.

Heteroptera (Bugs)

Cinnamon bug (*Corizus hyoscyami*) Firebug (*Pyrrhocoris apterus*)

Several species of shieldbug and leatherbug have been recorded in the Parish, rough grassy areas being favoured by these species. Two strikingly coloured species, the Cinnamon bug (*Corizus hyoscyami*) and the Firebug (*Pyrrhocoris apterus*) are spreading in our area at present.

Lepidoptera (Butterflies and moths)

White Admiral (*Ladoga camilla*) Green Hairstreak (*Callophrys rubi*)

Twenty-six butterfly species have been recorded recently, just over half the British number of species. Some of these, for example the Grayling (*Hipparchia semele*) and the White Admiral (*Ladoga camilla*) are vagrants and not established as breeding species.

Eggs of the Brimstone on Alder Buckthorn Small Heath (*Coenonympha pamphilus*)

The Brimstone (*Gonepteryx rhamni*) is seen more frequently aided by the planting of its caterpillar food plant, Alder Buckthorn.

The Suffolk BAP species the Small Heath (*Coenonympha pamphilus*) has been found at several sites including the allotments, Carlton Meres and Nonsuch Farm.

Both Green (*Callophrys rubi*) and White-letter (*Satyrium w-album*) Hairstreaks are other notable local species recorded recently. The latter may have suffered from the loss of its caterpillar food plant, due to Dutch Elm Disease.

Moths far outnumber butterflies in the number of species occurring and the running of garden moth traps has revealed many species locally, over 200 different species recorded in a small village centre garden so far, for example.

The notable Broad-bordered Bee hawkmoth (*Hemaris fuciformis*) (left) is established in the centre of the village and can sometimes be seen nectaring by day at flowers, in the company of the migrant Hummingbird Hawkmoth (*Macroglossum stellatarum*) (right), the latter is becoming a regular summer visitor from the Continent, perhaps due to climate warming..

The notable Hornet Clearwing (*Sesia apiformis*) has been the subject of a conservation project at Nonsuch Farm recently.

A formerly rare immigrant species, Clancy's Rustic (*Platyperigea kadenii*) (left) and the Red Data Book Toadflax Brocade (*Calophasia lunula*) (right)have both recently become established as breeding species in the Parish.

Amongst the micromoths the stunning and Nationally Notable *Nemophora fasciella* is resident at both the allotments and in a garden in Dennys Lane where its caterpillars feed on dead leaves of horehound.

Nemophora fasciella on Ox-eye daisy

Coleoptera (Beetles)

With over 4000 British species, the study of beetles of the Parish is very much in its infancy. Nonetheless some interesting species have been found in our surveys.

The Glow worm (*Lampyris noctiluca*), although not rare, is an iconic species where the female attracts a mate by emitting a light from her abdomen. A colony has been found near East Green crossing where the lack of light pollution evidently favours this species.

Glowworm female

Glowworm Larva (*Lampyris noctiluca*)

Diaperis boleti, a darkling beetle, was formerly considered a great rarity, but has become more widespread recently. It lives within bracket fungi growing on trees such as ash and has been found at Town Farm and Tiggins Lane in hedgerows.

Hymenoptera (Bees, wasps, ants etc.)

Another large group which will repay further survey work.

Interesting discoveries so far include the former Red Data Book Bee Wolf (*Philanthus triangulum*) a predator of honey bees at Carlton Park and the Red Data Book Five-banded Digger Wasp (*Cerceris quinquefasciata*) at the village allotments.


Five-banded Digger wasp (*Cerceris quinquefasciata*) Bee Wolf (*Philanthus triangulum*)

Two species of solitary bee have been found to be widespread in Kelsale village centre, the Bryony bee (*Andrena florea*) which feeds at flowers of White Bryony and the Ivy bee (*Colletes hederae*) which relies on Ivy blossom and was only discovered in 1993, both species nest colonially in burrows in the ground. Large numbers of the ivy bee can be seen in grassy banks along Low Road and around the village car park in late summer.


Ivy bee at ivy flowers Ivy bee nests, Low Road

A species of parasitic wasp new to Britain was found at Curlew Green, a parasite of a gall wasp *Plagiotrochus quercusilici*s itself a new arrival to these shores.

Other Invertebrates

Invertebrates other than insects have been little studied so far.

Molluscs

The most interesting discovery from our surveys in the world of slugs and snails was the scarce shelled slug *Testacella haliotidea* a burrowing slug that bears a small rudimentary shell at the end of its body. It is not uncommon on the allotments at Kelsale and rather than eating plants it specialises in eating other invertebrates in the soil

Alien Species

These comprise plants and animals deliberately or accidentally introduced by human agency.

It is an offence to deliberately release any animal not native to Britain, but most arise from inadvertent transport amongst horticultural material or as stowaways on vehicles.

Amongst the plants Giant Hogweed (*Heracleum mantegazzianum*) is known from Clayfields. Its sap produces an unpleasant photosensitive skin reaction when touched in sunny weather.

Policeman's Helmet or Himalayan Balsam (*Impatiens glandulifera*) was introduced as a garden plant but it has spread to river banks where its explosive seed pods enable it to colonise and exclude native vegetation. It is known from Gull Stream but has not been found in the Fromus as yet.

Other potentially harmful introduced plants include New Zealand Pigmyweed (*Crassula helmsii*) and Parrots Feather (*Myriophyllum aquaticum*) formerly sold as pond plants; these highly invasive species can invade natural ponds with a negative effect on native flora.

Every effort should be made to eradicate these noxious species.

Unwanted pond or garden plants should never be disposed of into ponds, rivers or the general countryside.

Invertebrates

The Boxworm moth (*Cydalima perspectalis*)is an introduced Asian species that has decimated box hedges in gardens since its accidental introduction. It is now not uncommonly found in local moth traps.

Girdled snail

This small snail is characterised by a white band around its edge, One of the less harmful introduced species it is spread via garden plants and has been found in a Kelsale garden.

Their small size and rapid reproduction make eradication of such invertebrate introductions difficult to achieve once they have become established.

There are doubtless many more species of invertebrate that remain to be discovered.

Jerry Bowdrey for KCC Biodiversity Group Feb. 2024