Grasshoppers

and allied insects of Norfolk

Norfolk & Norwich Naturalists' Society

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Bibliography

This presentation is based on:

RICHMOND D.I. (2001)
Grasshoppers and Allied Insects of Norfolk,
Norfolk & Norwich Naturalists' Society Occasional Publication no. 7.

For a full description of all British species see:

MARSHALL J.A. and HAES E.C.M. (1988)
Grasshoppers and allied insects of Gt Britain and Ireland
Harley Books

TED BENTON (2012)
Grasshoppers & Crickets
Collins New Naturalist Library no 120

Revision date 1.9.2025

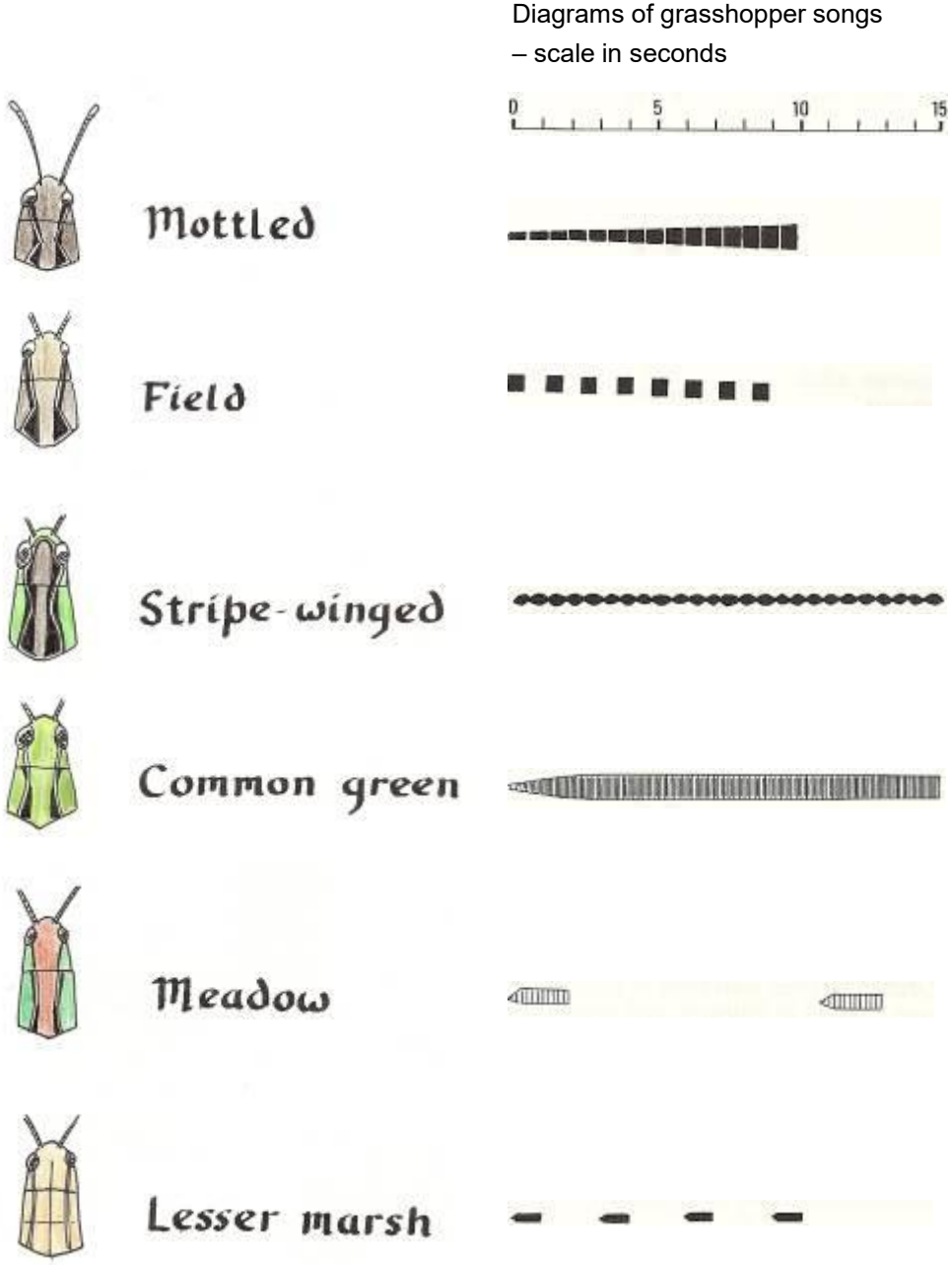
1) Grasshoppers

Most people will be familiar with the grasshoppers, which are recognised by their extended back legs and audible stridulations, which are made by rubbing the hind legs against raised veins on the forewings. Most species are fully winged and capable of short flights. All species have short antennae.

Grasshoppers overwinter as eggs laid in loose earth. The larvae hatch in early spring, passing through four nymphal instars before reaching maturity in June or July.

Grasshopper species show substantial variations in colour form and in size and are best identified by a combination of song and the markings on the pronotum (the saddle shaped protective casing to the thorax). The side keels of the pronotum vary from being strongly inflexed (as in Mottled Grasshopper) to almost parallel (as in Meadow and Lesser Marsh Grasshoppers).

In this presentation the species will be treated in decreasing order of the angularity of the markings on the pronotum (see key opposite).



Mottled Grasshopper

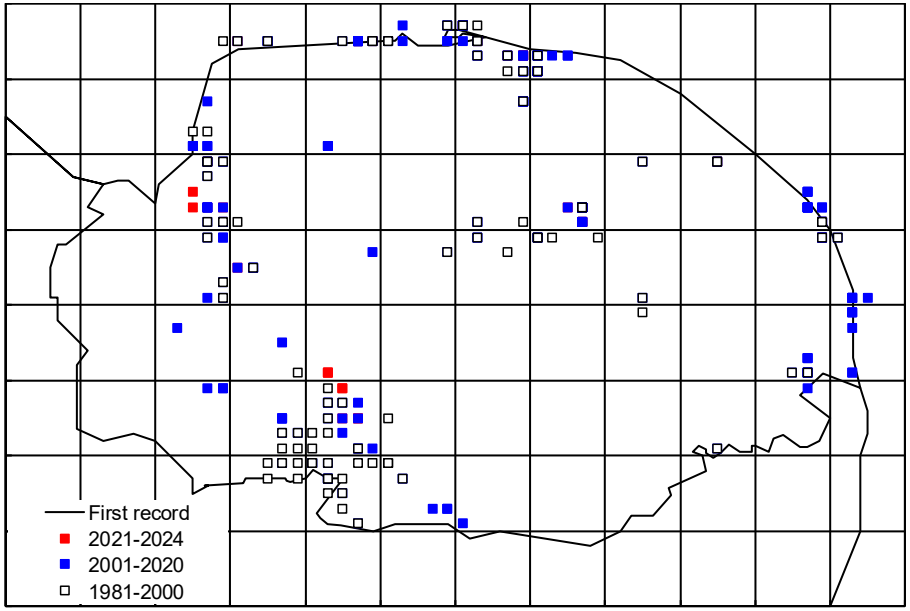
Myrmeleotettix maculata (Thunberg)

A small grasshopper with strongly inflexed side keels to the pronotum. It occurs in many colour forms often with a broken patterning of greens, greys and browns and sometimes with elements of red on its dorsal surface.

Its song is a series of about twenty buzzing chirps, rising in intensity and becoming longer and louder towards the end.

It occurs on sandy and heathland sites throughout Norfolk. It is most common in the Brecks and in the dune systems along the north Norfolk coast. It also occurs on remnant heathland north-west of Norwich and in west Norfok.

21st century records probably reflect increased recording effort rather than range expansion.



Note: several species have expanded their range in the 21st century. In order to illustrate this, sites known since the 20th century are shown as open squares, sites first discovered in the first 20 years of the 21st century are shown in blue, and the latest discoveries are shown in red.
Time bandings may vary between species to best reflect the pace of range expansion.

Field Grasshopper

Chorthippus brunneus (Thunberg)

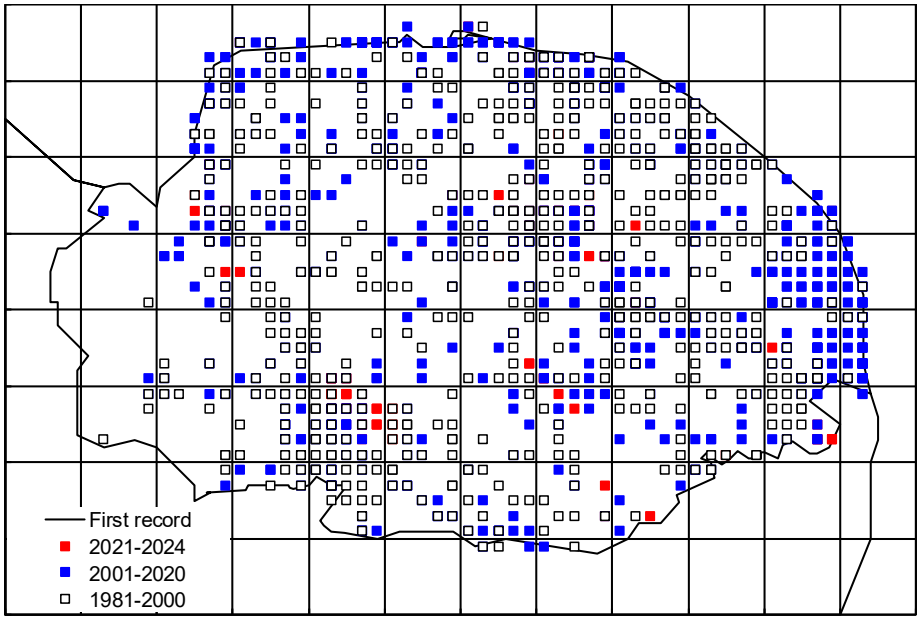
This is a large grasshopper occurring in many colour forms. It can be green, brown or even maroon. Females are significantly larger than males. The most reliable identification features are the song and the strongly inflexed side keels to the pronotum.

The song consists of loud brisk chirps, buzzing rather than shrill, and often delivered alternately by two interacting males. The song is heard from July and the insect can survive until November.

Field grasshopper is widely distributed throughout Norfolk, except for the Fens and Broads. It is tolerant of a wide range of habitats and can be found on heaths, commons, cleared forestry, roadside verges, waste ground and gardens.

It favours south facing banks which provide warm micro-climates. It is less tolerant of longer swards where the sun does not penetrate to ground level.

21st century records in the east of the county reflect intensive field work by local recorders in 2011.



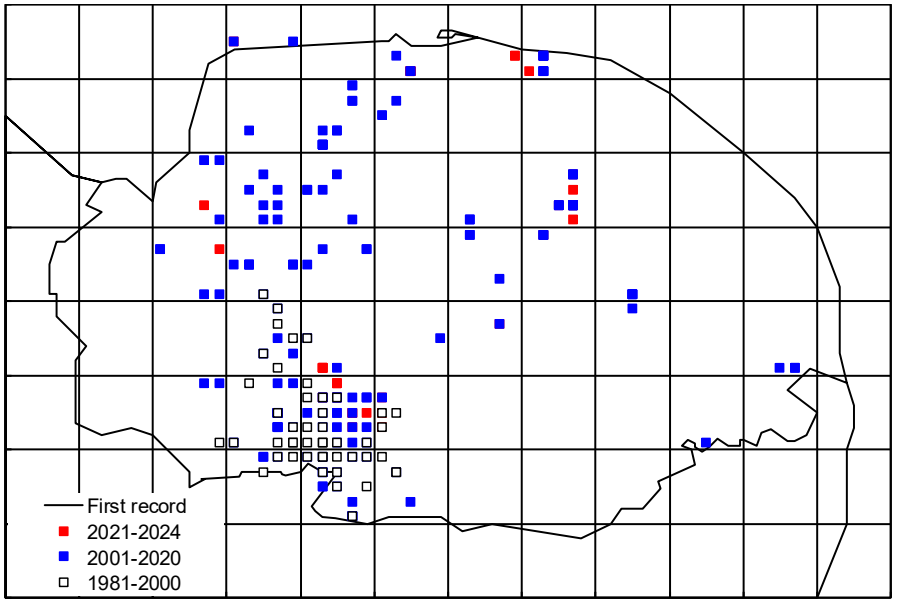
Stripe-winged Grasshopper

Stenobothrus lineatus (Panzer)

Mature adults are green with orange on the legs and abdomen. The side keels of the pronotum are moderately incurved in an hour glass shape. There is a prominent white stigma (comma-like mark) on the forewing. The “stripe-wing” of the name relates to the pattern of venation on the forewing and not to any prominently visible field mark.

The song is a wheezy, undulating metallic sound lasting 10-25 seconds. It is delivered with unusually slow leg movements, one leg rising in advance of the other like a very slow cyclist. There is also a longer, courtship song like the “tick-tock” of a clock. All songs are very quiet and are best heard with a bat detector.

The traditional strongholds of this insect are the chalk grasslands around the brecks, which were originally researched by RM Payne in 1959. The species has been expanding its range at a national level in recent years and this is reflected in the rapid colonisation of NW Norfolk in the early 21st century and in a scatter of records across heathland sites in mid-Norfolk stretching down to Waveney Forest in the East of the county.



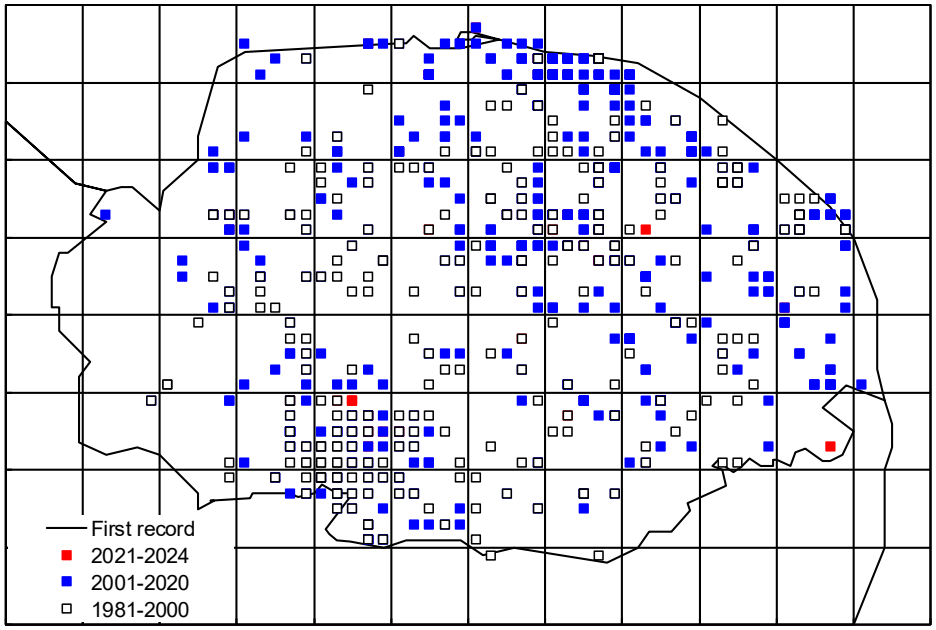
Common Green Grasshopper

Omocestus viridulus (Linnaeus)

Although the usual colour is green, the abdomen and sides of the pronotum may be brown or purple. The side keels of the pronotum are moderately incurved, often with black wedge marks extending to the hind margin.

Common Green Grasshopper has a loud continuous song lasting up to 15 seconds. It is soft in tone but far carrying, rather like the sound of hands being briskly rubbed together. On hot days it can be heard over considerable distances, but in duller weather can be less conspicuous and may be more reliably heard with a bat detector to amplify the sound. The song can be heard from early June or even late May in particularly favourable years.

The insect is abundant on old commons, brecks and unimproved grassland and can also be found in woodland rides and on roadside verges throughout Norfolk. It is less common on the north Norfolk coast and on the high ground of west Norfolk, and is mainly absent from the Fens.



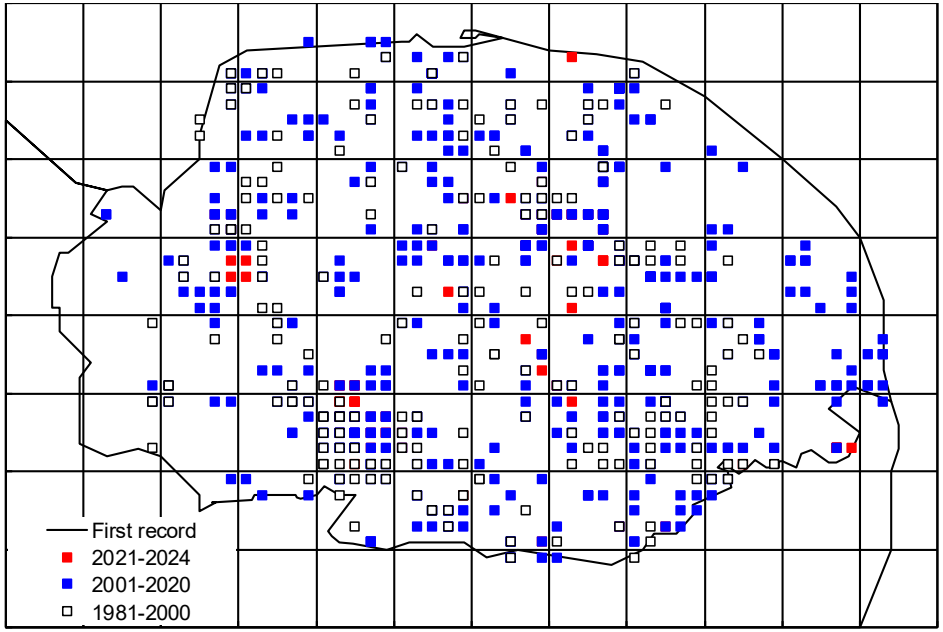
Meadow Grasshopper

Pseudochorthippus parallelus (Zetterstedt)

Meadow Grasshopper is less robust then Field Grasshopper. The usual form is green with a broad brown band on top of the head and pronotum, the side keels of which are gently incurved. Other distinguishing features are a yellow ventral surface to the abdomen and blackish hind knees which distinguish this species from Lesser Marsh Grasshopper. Hind wings are vestigial in both sexes. The forewings of the male extend almost to the tip of the abdomen whereas those of the female (illustrated) are noticeably reduced, extending over only half the length of the abdomen.

Meadow Grasshopper has a short rattling song of 1-2 seconds duration sometimes described as a dry chuckle of 10—15 pulses. Adults mature from late June or early July and can survive until late October.

It occurs in a wide range of grassland types in Norfolk, ranging from dry breck grasslands to damp meadows. It is generally absent from the Fens and from the Broads where Lesser Marsh Grasshopper is the more common species. Twenty-first century records in the east of the county reflect intensive field work by local recorders in 2011.

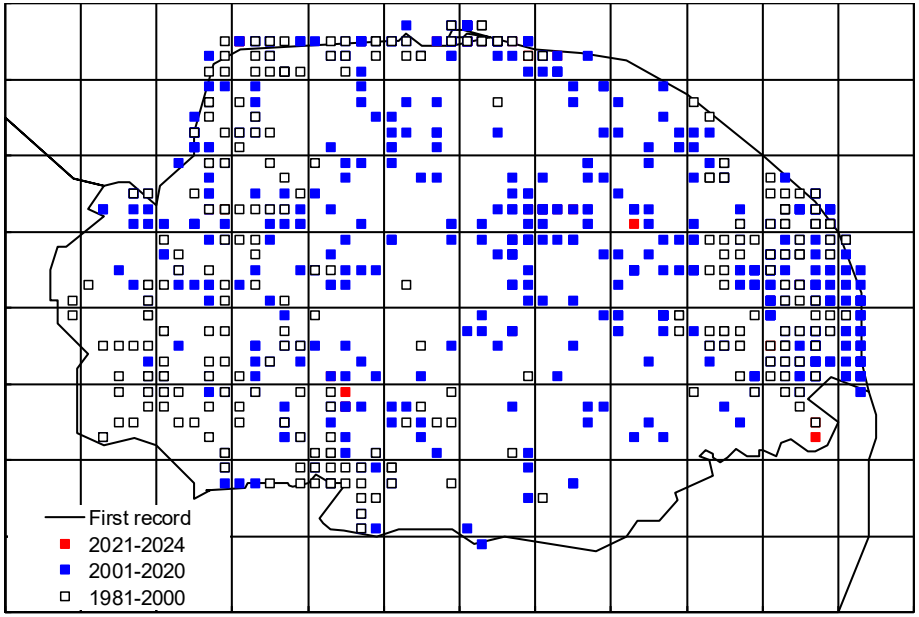


Lesser Marsh Grasshopper

Chorthippus albomarginatus (De Geer)

The most usual forms of the Lesser Marsh Grasshopper are a uniform straw brown or a pale grey-green with straw brown dorsal surface. There is also a dark green form in which the white line running along the forewing is particularly prominent. Many other colour forms exist. The side keels of the pronotum are straight and there is often a visible median keel so that the insect is readily recognised by the three parallel lines across the pronotum. The insect is fully winged. Stridulation is a soft purring trill, like a quiet fluttering of the tongue.

During the late 20th century, the Lesser Marsh Grasshopper was restricted to coastal areas, the Fens and the Broads. In recent years, however, it has expanded its range into central Norfolk and is now widespread across the county.



The species occupies a wide range of habitats including coastal sand dunes, dry grassland, roadside verges, cleared forestry and grazing marshes.

2) Groundhoppers

The groundhoppers are like diminutive grasshoppers rarely more than 15mm long. Their wings are hidden by an extended protective casing to the thorax (known as the pronotum) which covers the whole of the abdomen. Their antennae are short and they have no stridulation.

Two species occur in Norfolk,
• the Slender Groundhopper in which the pronotum extends beyond the tip of the abdomen, giving a characteristic diamond or kite shape when viewed from above;
• the Common Groundhopper in which the pronotum is shorter.

In contrast to grasshoppers and bush-crickets, the eggs of groundhoppers begin to develop immediately they are laid and hatch within 3-4 weeks. The insects overwinter as nymphs or adults, becoming dormant in very cold weather.

Slender Groundhopper

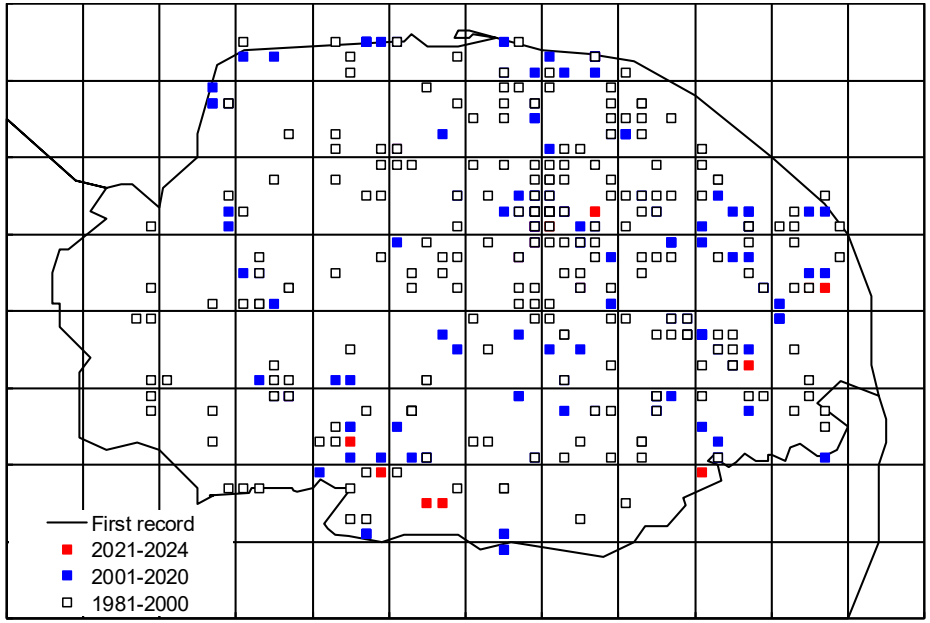
Tetrix subulata (Linnaeus)

Slender Groundhopper is an insect of wet places, being found in a range of fen-like habitats, marshes, damp commons, stream sides, grazing meadows and dune slacks.

The pronotum extends beyond the tip of the abdomen giving a characteristic diamond or kite shape when viewed from above.

It varies in colour from pale brown to black, often matching the colour of the substrate making it very difficult to see. Dark forms often have white blotches on the legs.

Eggs are laid in the ground or in moss, and hatch within 3-4 weeks of laying. The insect overwinters as an adult or late instar nymph, becoming active again in April.



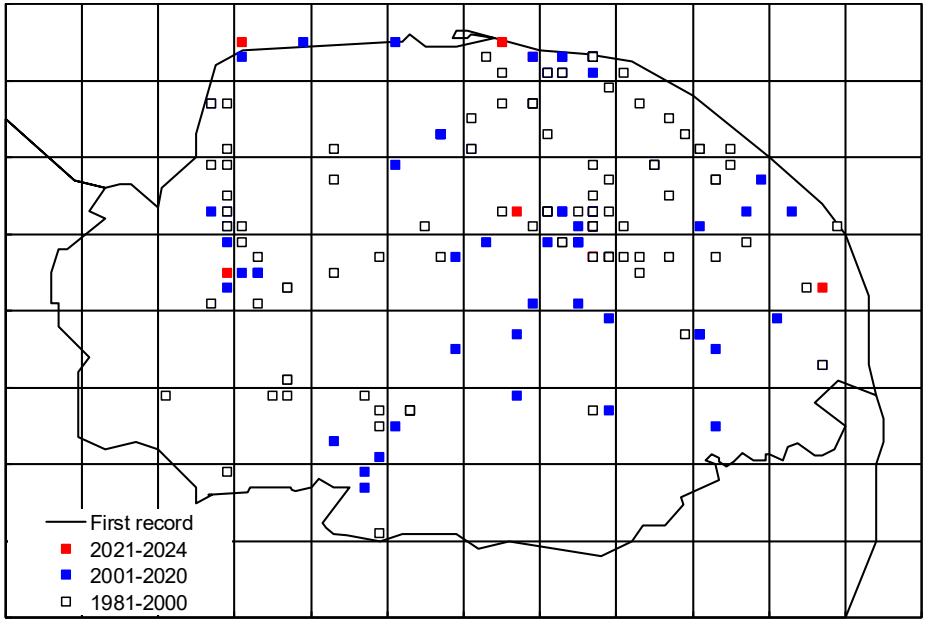
Common Groundhopper

Tetrix undulata (Sowerby)

A sturdy groundhopper, whose pronotum has a prominent central keel which extends only as far as the tip of the abdomen. The hindwings are reduced and are much shorter than the pronotum. It is very variable in colour often mimicking the substrate.

Eggs are laid in crevices in the ground or in moss, and do not undergo diapause so adults and nymphs can be seen together at any time of year from April to September.

Common Groundhopper can be found in both wet and dry habitats where it exploits bare ground among low vegetation with a substantial moss flora. It has been recorded from heaths, commons and woodlands particularly in the north-east quadrant of the county, and from wet areas and dry heaths in the west. There are very few records from the agricultural areas of south Norfolk.



3) Bush-crickets

The bush-crickets are recognisable by their extended back legs, but are more likely to crawl about their preferred habitat of scrub or rank vegetation. All species have long antennae and in older texts were referred to as long-horned grasshoppers. Several species have much shortened wings and are incapable of flight.

Stridulation, where it occurs, is by rubbing the wings together, and is higher pitched than that of the grasshoppers and for some species is beyond the range of human hearing. A bat detector is a useful accessory for locating such species by sound.

Bush-crickets overwinter as eggs, often laid in crevices in bark or rotting vegetation. In some species the eggs will not hatch until the spring of the second year, the embryo having developed through the summer and autumn of the first year, but then entering diapause until the second spring. Nymphs emerge in May or June, reaching maturity in July or August. Most species are omnivorous, surviving as adults until October or even November in the case of Dark and Speckled Bush-crickets.

As an aid to recognition, species are presented in the following order:

Insects of the wider countryside (including gardens):

- Dark Bush-cricket
- Speckled Bush-cricket
- Oak Bush-cricket
- Southern Oak Bush-cricket

The *metrioptera* and *roeseliana*
- Bog Bush-cricket
- Roesel's Bush-cricket

The coneheads:
- Long-winged Conehead
- Short-winged Conehead

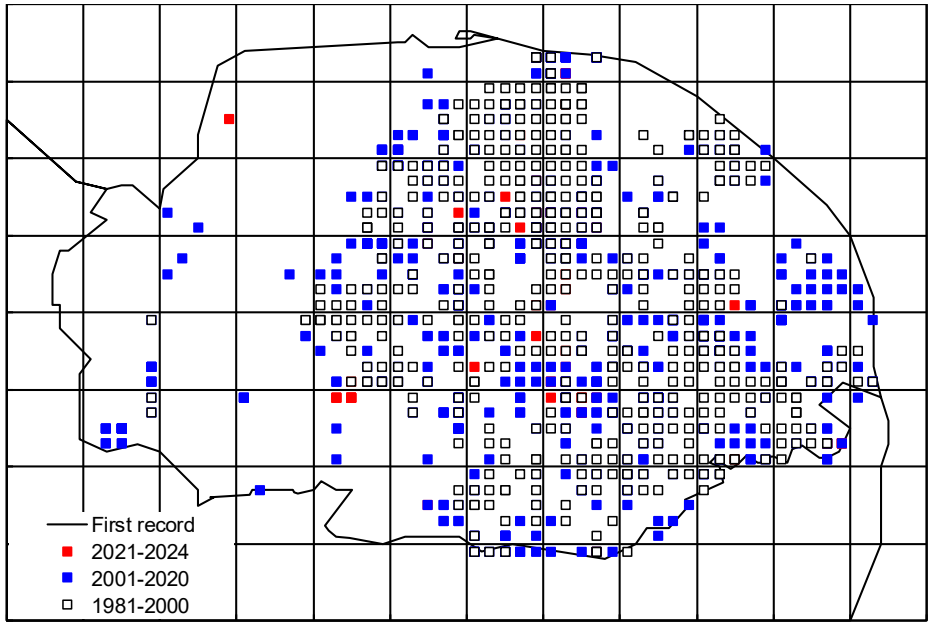
Species with a historically restricted range, but now expanding:
- Great Green Bush-cricket

Dark Bush-cricket

Pholidoptera griseoaptera (De Geer)

A robust insect with vestigial wings covering less than half the abdomen in the male, and reduced to tiny lobes in the female. The adult male is grey/brown and the female yellow/brown. The underside is yellow in both sexes. The nymphs are black with a pale dorsal band and greenish ventral surface, and can often be seen sunning themselves on low vegetation during June and July.

The song of the male is a brisk chirp delivered from thick vegetation at all times of day but particularly noticeable at dusk. It can be heard from late July until the end of October. Adults survive until the first frosts of November.



Dark Bush-cricket is an insect of ancient hedgerows and commons, found only where there is persistent dense cover usually of nettles and brambles. It is common in the ancient countryside of mid and south Norfolk, but mainly absent from the west of the county and the intensely arable north-east where the majority of hedgerows date from the time of the 19th century parliamentary enclosures. There are interesting outlying colonies along the Gt Ouse, where it is found in brambles along the flood banks. Recent records in SW Norfolk are audio-records from the Norfolk Bat survey.

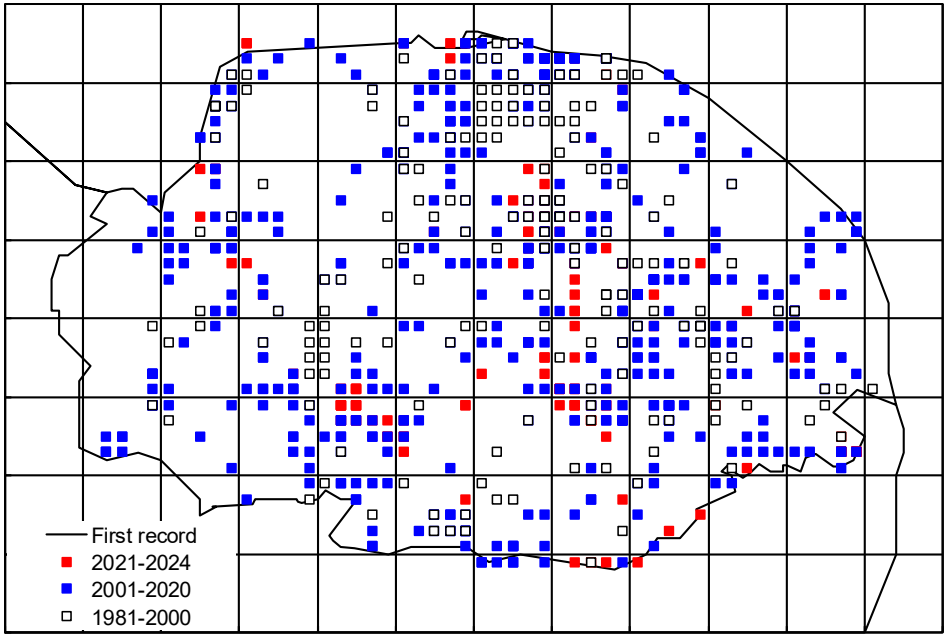
Speckled Bush-cricket

Leptophyes punctatissima (Bosc)

The adult bush-cricket is a plump, green insect with brown dorsal stripe, covered in minute dark spots; hindwings absent, forewings vestigial. Nymphs hatch in May and with practice can be easily located as they sun themselves on hedgerow nettle or bramble, often in the vicinity of mature trees particularly ash or oak. Later in the season the insects become difficult to find as they move higher or deeper into the vegetation. In autumn it can be found on walls and windows and will sometimes find its way indoors.

The male song is an abrupt, high pitched chirp which is best heard with a bat detector from August to October, and exceptionally into November, or even early December in the absence of frosts.

Speckled Bush-cricket appears to have the same habitat requirements as Dark Bush-cricket, and given that both species are flightless, it is intriguing that Speckled Bush-cricket is found in areas of the county where Dark Bush-cricket is absent.



Note: 21st century records reflect the increased use of bat detectors by recorders, not range expansion.

Oak Bush-cricket

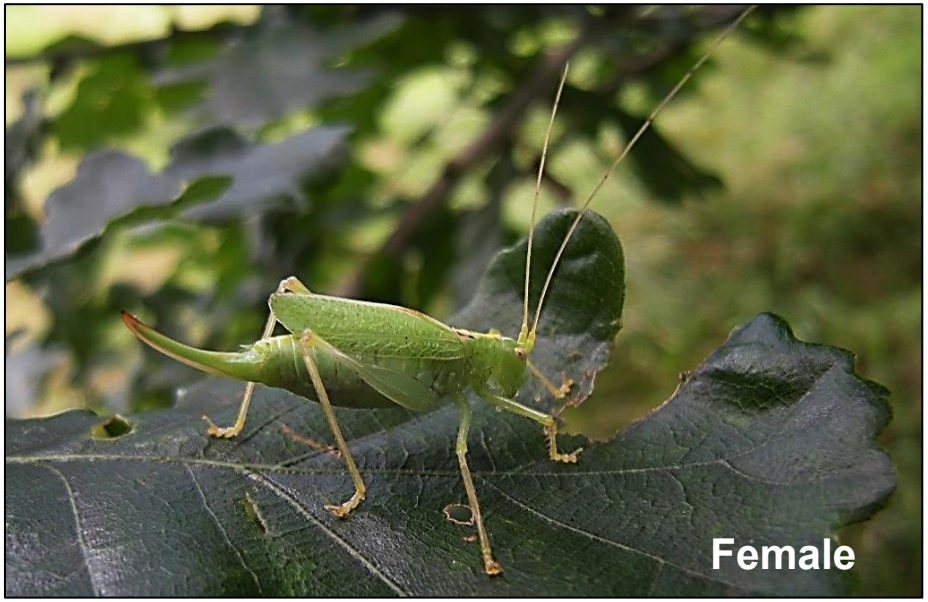
Meconema thalassinum (De Geer)

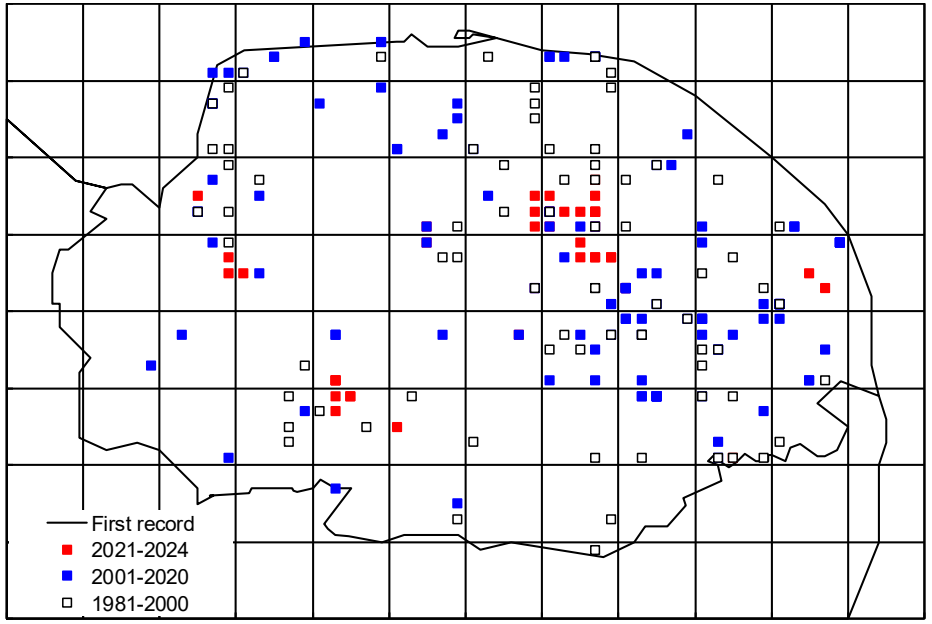
A slender, pale green insect with yellowish legs; it is fully winged and attracted to light. Oak Bush-cricket has no stridulatory mechanism. Instead it makes a barely audible drumming noise by striking a hind leg against a leaf, producing short rapid bursts of sound.

This is a completely arboreal species, which is mainly carnivorous. It can be found in broad-leaved woodland, hedgerows and gardens but is significantly under-recorded in Norfolk because of its habitat preferences, its nocturnal habits and lack of audible song.

It can be searched for by beating young oaks or birch, or by sweeping ivy covered tree trunks. Occasionally it may be found as a nymph, sunning itself on exposed vegetation. As an adult, it is attracted to light, frequently being found in moth traps or at lit windows, particularly in the autumn when it may sometimes enter houses. The fully-winged nature of this species distinguishes it from speckled bush-cricket which is the other green bush-cricket to come indoors in the autumn.

Note: The most recent records reflect intensive field work in 2023, not range expansion.





Southern Oak Bush-cricket

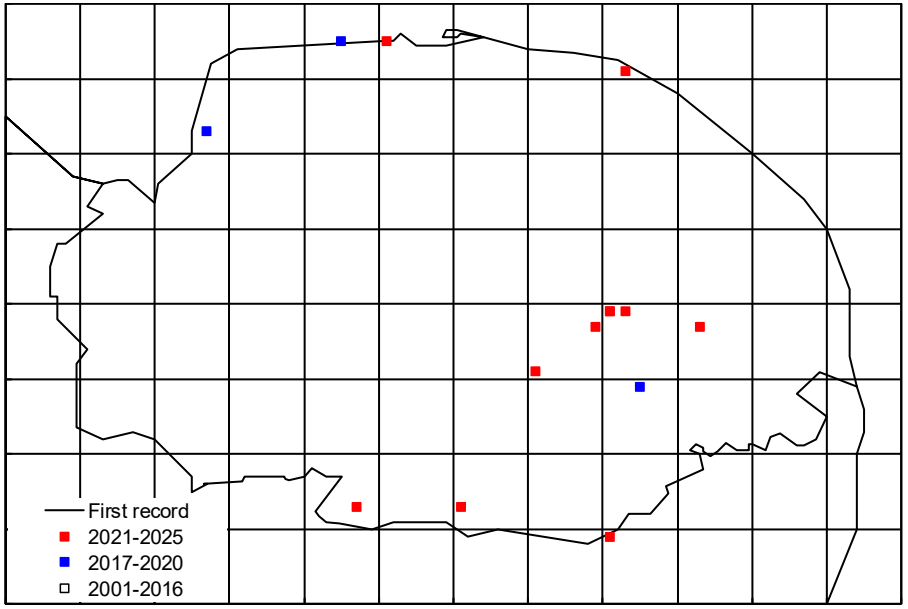
Meconema meridionale (Costa)

Southern Oak Bush-cricket is a flightless species, first recorded in England in 2001, but now widespread across southern and midland counties. It is presumed to have been imported into Britain in horticultural produce from the near continent and to have spread within the country in the same way.

It has the same pale green colour as Oak Bush-cricket, but is completely wingless. The female also has a more distinctly curved ovipositor with a red tip. It exploits a wide range of tree species, including oak, sycamore, birch, maple and garden shrubs.

It was first recorded in Norfolk in 2017, its scattered distribution reflecting what must necessarily be a succession of casual introductions. Coastal records might be linked to second home ownership or holiday lets. There is a cluster of records from allotments and gardens in Norwich, where its presence at one site in 2024 and 2025 implies breeding.

Vanna Bartlett



Distribution map based on verified records downloaded from the National Biodiversity Network atlas, plus other records notified to the county recorder.

Bog Bush-cricket

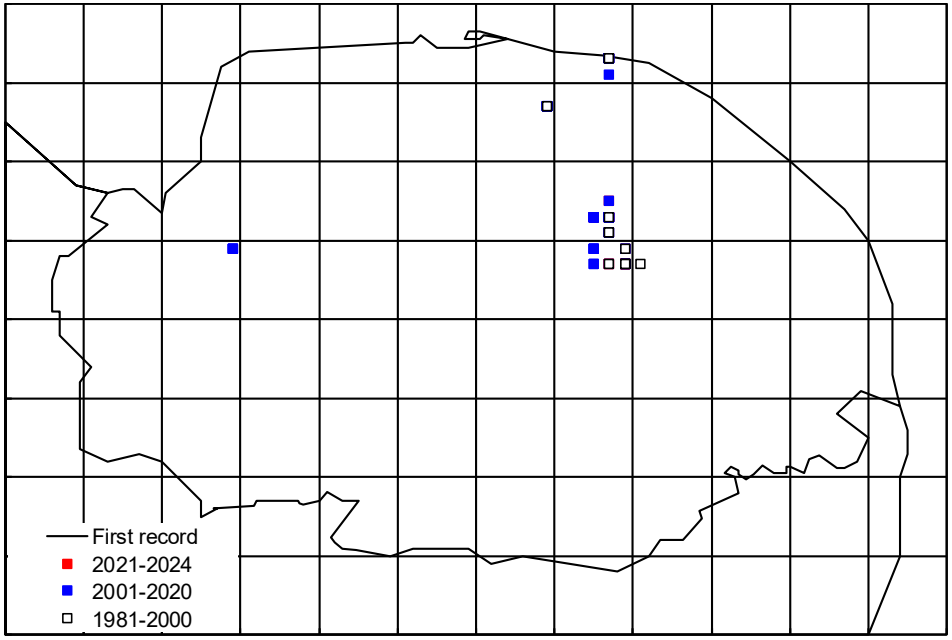
Metrioptera brachyptera (Linnaeus)

A dark brown insect with green ventral surface to the abdomen, and with green (or occasionally light brown) on top of the head and pronotum. Wings are shortened covering only half the abdomen.

The song is a continuous, high pitched stridulation which can be heard at all times of day in hot weather. A bat detector can be helpful in picking up the less intense sounds emitted in dull weather.

Bog Bush-cricket is an insect of lowland heath and clearings in damp woodland where the dominant plants are cross-leaved heath *Erica tetralix* and purple moor grass *Molinia caerulea*. Nymphs can be readily swept from these plants in June and July but more intensive searches are required to find the cryptically coloured adults in August and September.

In Norfolk the species is currently known only from Beeston Common, Holt Lowes, Buxton, Cawston and Marsham Heaths and from woodland clearings on the former Horsford and Newton Heaths. In the west of the county it is known from a single site in the Leziate area where it was rediscovered in 2006, after a gap of more than 80 years.



Roesel's Bush-cricket

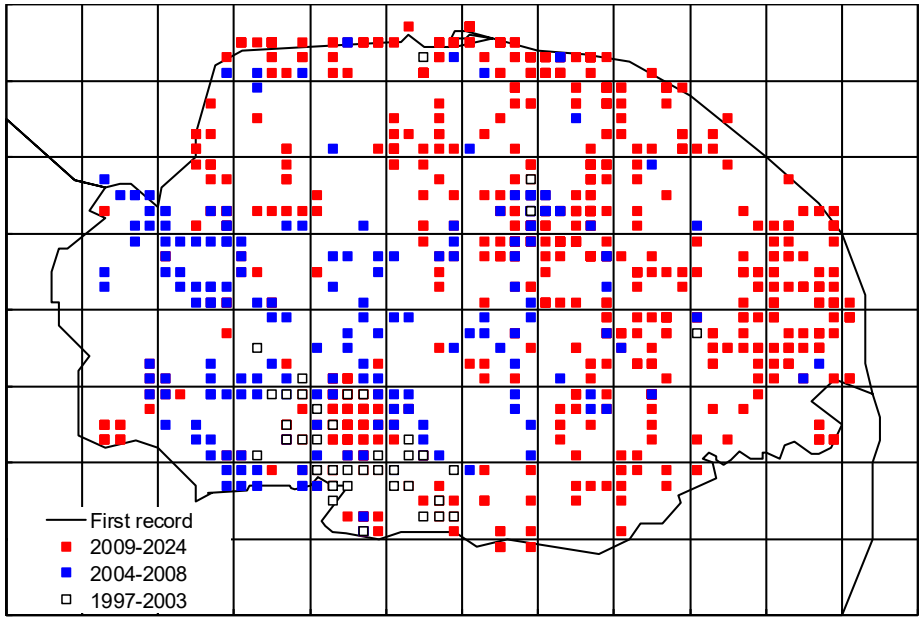
Roeseliana roeselii (Hagenbach)

A dark brown insect with prominent cream-coloured line around the side margins of the pronotum and with three distinctive yellow or green spots on the body behind the pronotum. Head and abdomen can sometimes be green. The insect is normally short-winged, though a macropterous form with wings extending well beyond the tip of the abdomen can occur in relatively high numbers in very hot summers.

Short winged form *Long winged form*

The song is a continuous, penetrating buzz best likened to the electrical discharge emitted by pylon-cables in damp weather. It can be heard at considerable distance with a bat detector, but only the most intense song can be heard unaided.

Nationally, the species has undergone significant range expansion from its original strongholds in the Thames basin and was first recorded in Norfolk in 1997. Initial colonisation was in the Breckland area, subsequently spreading around the Wash coast and across central Norfolk. It is now widespread across the county and can be expected to be found among rough dry grasses almost anywhere.



NB: date bandings adjusted to better illustrate the range expansion.

Long-winged Conehead

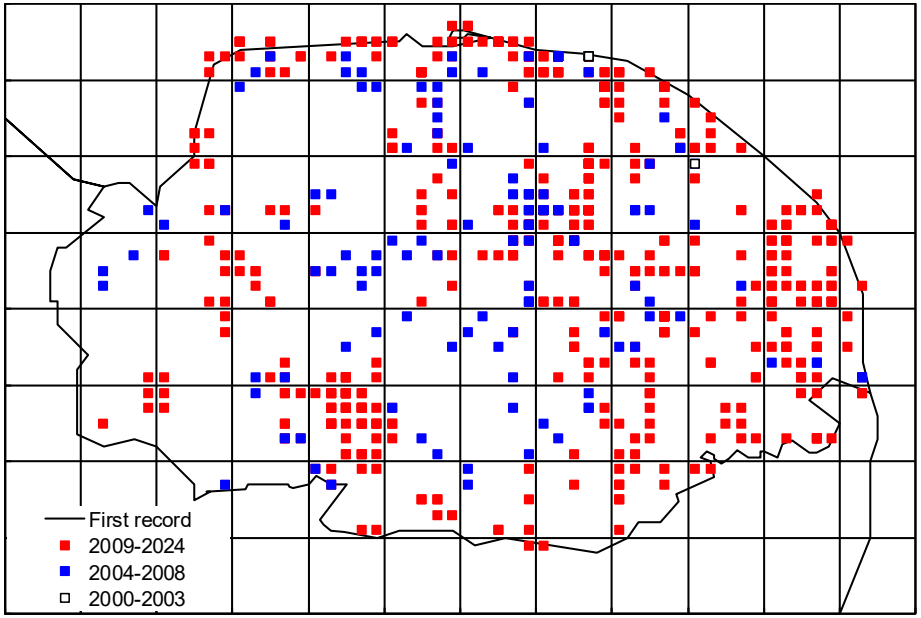
Conocephalus fuscus (Fabricius)

A slender green bush-cricket, with brown dorsal stripe and brownish wings extending just beyond the tip of the abdomen. The female has a long straight ovipositor (illustrated). Stridulation is a faint, prolonged hiss, best heard with a bat detector. Stridulation is similar to that of Short-winged Conehead but without the alternating sounds which are such a feature of that species. Through a bat detector, the stridulation is a harsh staccato sound which distinguishes it from the buzz of Roesel's Bush-cricket, and from the softer stridulation of Common Green Grasshopper.

Like Roesel's Bush-cricket, Long-winged Conehead is expanding its range nationally and was first recorded in Norfolk in the year 2000. The main spread of the insect seems to have followed the hot summer of 2003, and it is now widespread across the county. Coneheads have a single year egg cycle (unlike the 2-year cycle of most other bush-crickets) and this has probably contributed to its rapid colonisation of the county. It can be found in coarse vegetation along roadsides, and in waste ground or agricultural set-aside.

NB: date bandings adjusted to better illustrate the range expansion.

Garth Coupland



Short-winged Conehead

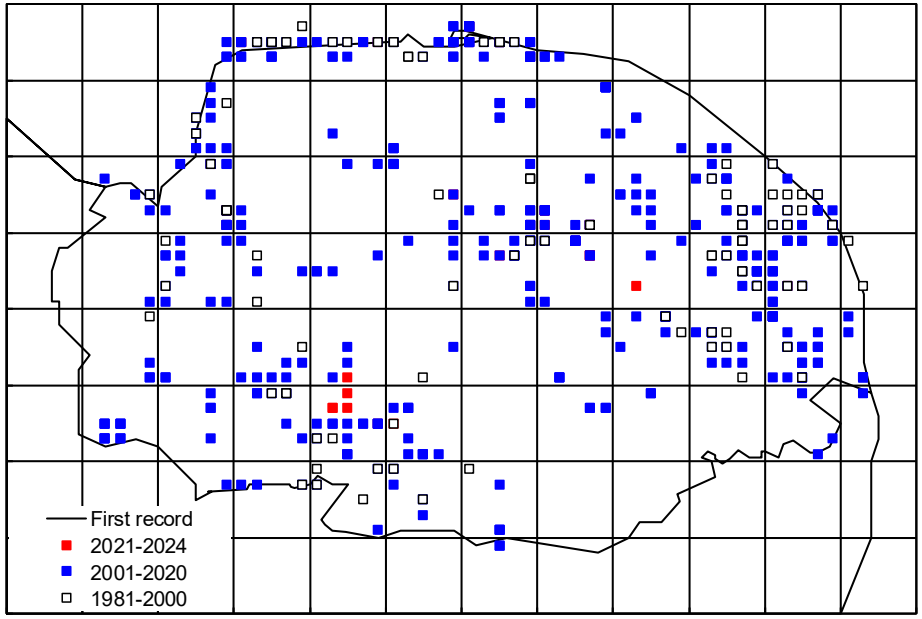
Conocephalus dorsalis (Latreille)

A small, bright green bush-cricket, with a brown dorsal stripe. Hind wings vestigial, forewings brown in colour, extending over half the abdomen. The nymph is a lurid green colour with prominent black dorsal stripe and excessively long antennae.

The high pitched stridulation is inaudible to many people and is best heard with a bat detector. It has two alternating sounds, a wavering hiss and a slower ticking sound. Eggs are laid in the stems of grass, rushes and reeds.

The traditional strongholds of Short-winged Conehead were the Broads area and the coastal saltmarsh and dunes in the north-west of the county. It was also known from the Brecks where it occupied dry grassland, and from a scattering of wet rushy meadows in central Norfolk.

In the early years of the 21st century there was a considerable range expansion and it is now well established across the county.



Great Green Bush-cricket

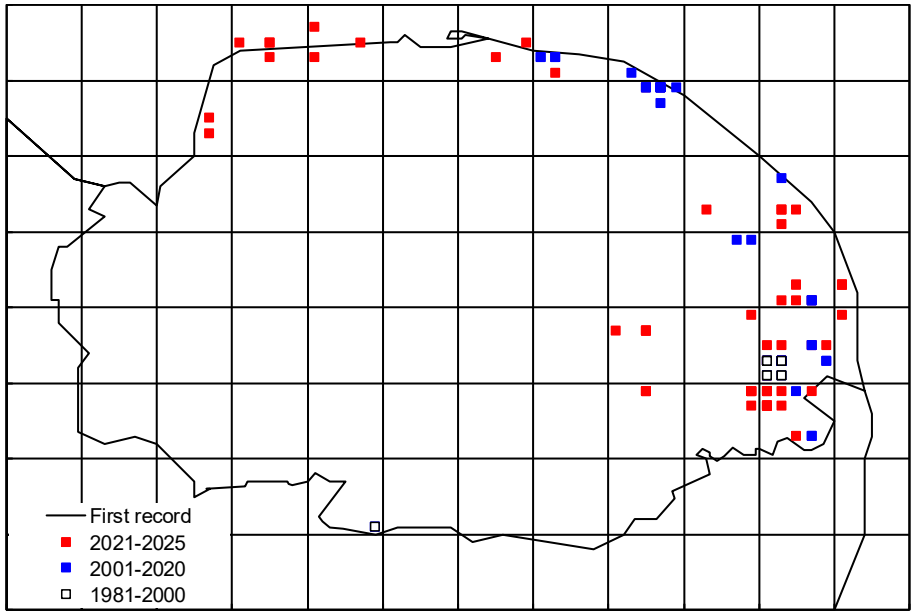
Tettigonia viridissima (Linnaeus)

A large green insect with brown dorsal stripe, and wings extending well beyond the tip of the abdomen. Song is loud, continuous and far carrying, like that of a grasshopper warbler, but more ringing, and can be heard on warm afternoons and evenings from late July onwards. Considering the size of the insect, it is notoriously difficult to see.

The best known Norfolk colony is at Reedham where it has been known since at least 1960, but from 2005 onwards, records began to emerge from a scattering of coastal sites, firstly in the Burgh Castle and Bradwell areas, then further north to Mautby, Ludham and Sea Palling, culminating in a remarkable set of records in 2020 from the cliff tops and country lanes around Trimingham and from the coast road between Weybourne and Sheringham. The westward range expansion has continued and in 2023 it was discovered at Holkham, Scolt Head and Titchwell on the North coast, and at Ken Hill on the Wash coast.

Detailed field work in 2023/4 also found it at several new sites in East Norfolk. It is not known whether these represent recent dispersal or whether they represent a longer term, but previously unreported, presence.

Garth Coupland



Checklist of Norfolk Grasshoppers and Crickets.

Print out this page to record your sightings of Norfolk Grasshoppers and Crickets.

Species	Where	When
Mottled Grasshopper		
Field Grasshopper		
Stripe-winged Gh		
Common Green Gh		
Meadow Grasshopper		
Lesser Marsh GH		
Slender Groundhopper		
Common Groundhopper		

Species	Where	When
Dark Bush-cricket		
Speckled Bush-cricket		
Oak Bush-cricket		
Southern Oak BC		
Bog Bush-cricket		
Roesel's Bush-cricket		
Long-winged Conehead		
Short-winged Conehead		
Great Green Bush-crkt.		