

CRICKETS & GRASSHOPPERS

A guide to their identification and distribution in
Dumfries and Galloway

by

Marie Pierre-Gaye

& Mark Pollitt



Introduction

There are around 30 species of **Orthoptera**, the taxonomic group which includes crickets, grasshoppers, earwigs and cockroaches, found in the UK. This is only a tiny fraction of the 30,000 species that occur worldwide. The group can be divided into four main groups: grasshoppers, groundhoppers, bush-crickets and 'true' crickets. Nine species of Orthoptera have been recorded in Dumfries and Galloway, eight of which are native.

Grasshoppers are a familiar group to many people. Adults are typically between 1.5 and 3cm in length and have enlarged rear legs which they use for jumping. They have relatively short antennae and behind their head a prominent saddle-shaped structure called the pronotum (a plate that covers the top and sides of the thorax). All species 'sing', making a characteristic chirping noise by rubbing their hind legs against their forewings. Female grasshoppers have a small ovipositor, most simply pushing their abdomen into the soil to lay their eggs. Many species vary considerably in colouration which is not a good guide to species identification. Structure and songs can be used more reliably to identify them.

Groundhoppers are similar to grasshoppers, but the pronotum extends over the top of the abdomen (beyond in some species). They also have short antennae but do not sing.

Bush-crickets are longer-legged with very long fine antennae. Females have a distinctive knife-like ovipositor which they use to cut slits in plants to lay their eggs. Most are green/brown in colour and vary less than grasshoppers. Bush-crickets typically favour scrub or woodland edge habitats and many species are more active at night. Unlike grasshoppers the song is made by rubbing the base of their wings together. The resulting song is often higher pitched than those of the grasshoppers.

'True' crickets are usually dark brown or black and their bodies are more rounded in structure. They have long fine antennae and two prominent pointed structures (cerci) protruding diagonally from the tip of the abdomen. Females may additionally have a central pointed ovipositor. They are usually ground-dwelling.

BUSH CRICKETS ARE LEFT-HANDED...

Bush-crickets differ from 'true' crickets in that they rub their left wing over their right when stridulating. 'True' crickets rub their right wing over their left.

The following pages give an introduction to the species found in Dumfries and Galloway and their known distribution. The information provided on identification is necessarily abbreviated and we would recommend that recorders consult one of the published field guides (see back of booklet) for more detailed information about identification until they are familiar with the different species. DGERC would be happy to confirm identification from photographs.

Finding and identifying grasshoppers and crickets

Most species are more readily identified from their structure rather than their colour. Indeed, many different colours are found within the same species. It is therefore more reliable to observe them closely to look for anatomical characteristics and to listen to their songs when they are not visible.

Anatomical features aiding identification of sex and age of crickets and grasshoppers:

- Size
- Wing length (in relation to the abdomen length)
- Keel shape on the pronotum (on the thorax segment)
- Ovipositor size and shape: Females bush-crickets have different shapes of ovipositor used to drop their eggs (ova) singly and situated at the end of the abdomen whereas females grasshoppers have a genital valve at the end of the abdomen to lay their eggs as a pack in a burrow.
- Differences between males and females include: absence or presence of ovipositor (respectively), size, wings length, colour, antennae.

Calls

Calls or songs (more correctly referred to as 'stridulations') are another way of identification. In fact an experienced orthopterist need not see a species at all to identify it. Each species possesses its own distinctive song which males use them to attract females. However, some are barely audible to human ears. A bat detector can be used to improve detection of all species, particularly those with high frequency calls such as Speckled Bush-Crickets.

Time of the year

The most suitable period to observe them is summer. When disturbed, many species instinctively jump aside. It is also the best time to hear them calling. In the species, accounts, a colour scale indicates the months of the year when adults are more likely to occur.

Habitats

Crickets and Grasshoppers can be found in a wide range of habitats, coastal or inland, at low or higher altitudes. Some favour damp environments with short or long grass, while others require drier and warmer conditions such as south facing hillsides on rocky ground.

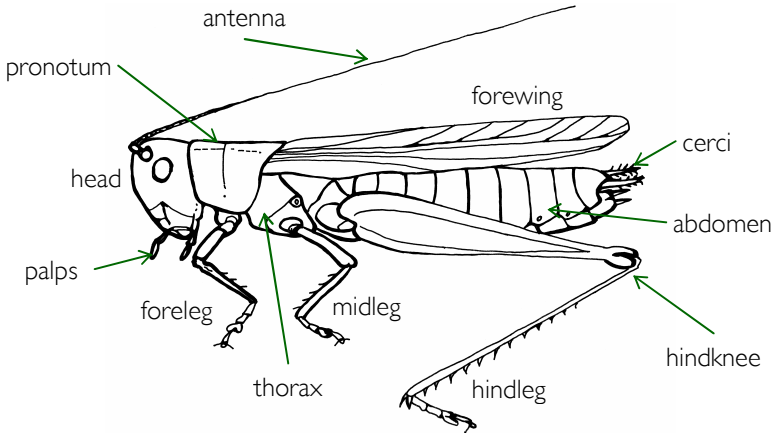
Nymphs

After hatching from eggs, the larva moults to become a fully-limbed nymph resembling a miniature adult Orthopteran. These nymphs pass through a number of transformation

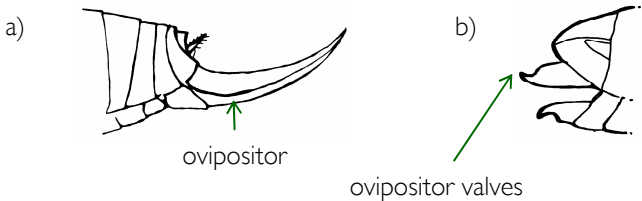
phases (known as instars) before reaching adult size and appearance. The number of instars varies, usually four in grasshoppers but up to 13 in some species of cricket. Nymphs can be distinguished by their small size and the fact that their wings and reproductive apparatus are not fully developed.

Biology

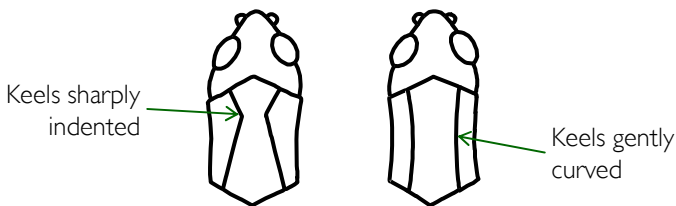
Diagram of Orthoptera species



Abdomen of female cricket (a) and grasshopper (b)

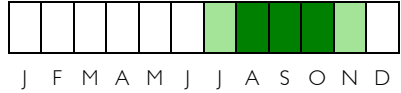


Dorsal view of grasshopper pronotum



Dark Bush-cricket

Pholidoptera griseoptera



Identification

10-20 mm long (+10 mm ovipositor). Always brown in colouration, ranging in tone from grey brown to dark brown. Prominent yellow or yellow-green underside. Very short wings.

Song

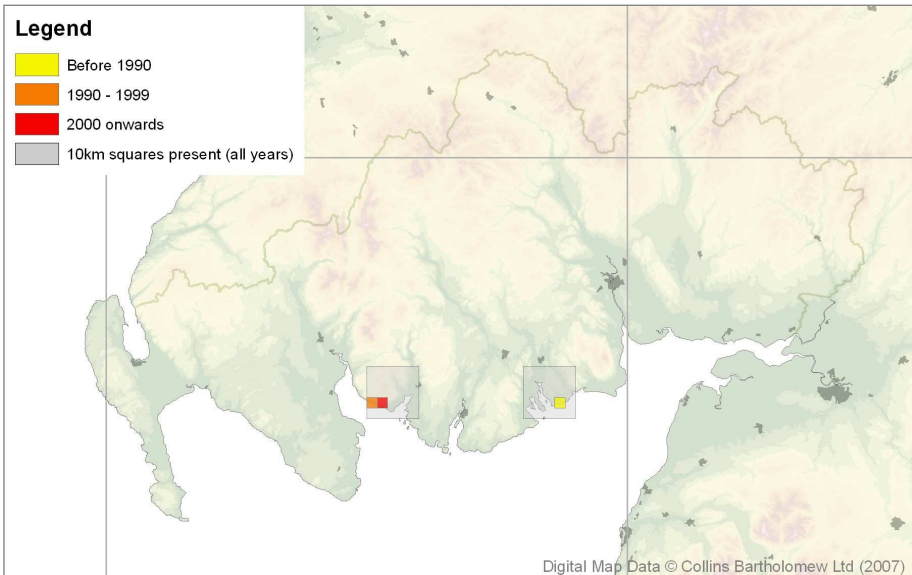
High pitched short chirps, repeated irregularly. May sing throughout the day including dusk.

Habitat

Only recorded in D&G at coastal locations, amongst coarse scrubby vegetation on south-facing slopes.

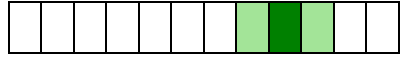
Local status

Only recorded in a few coastal locations.



Speckled Bush-cricket

Lectophyes punctatissima



J F M A M J J A S O N D

Identification

10-20 mm long (<10 mm ovipositor). Bright green, minutely speckled with black dots. Females' ovipositor short and sharply curved.

Song

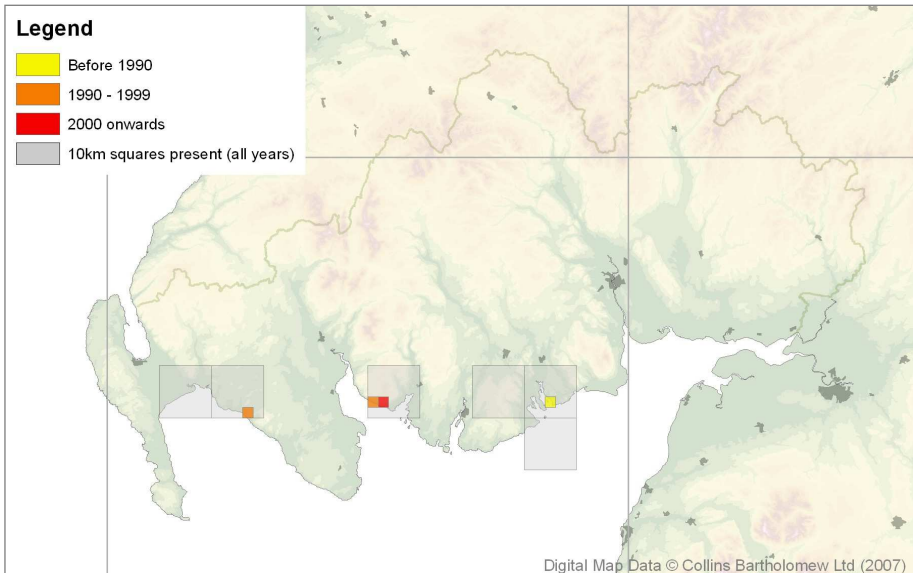
Very weak high-pitched repeated chirp, almost inaudible to human ear. Best heard with a bat detector.

Habitat

Favours hedgerows, tall herbage and scrub.

Local status

Recorded from only a few coastal locations.



Bog Bush-cricket

Metrioptera brachyptera



Identification

10-21mm long (+ 10mm ovipositor), brown on the sides and a mixture of brown and green along its back with a pale margin on the side of its pronotum. Usually has wings shorter than the abdomen, and females have shallowly notched ovipositor.

Song

Continuous high pitched chirps, easily audible, especially if several of them are singing together.

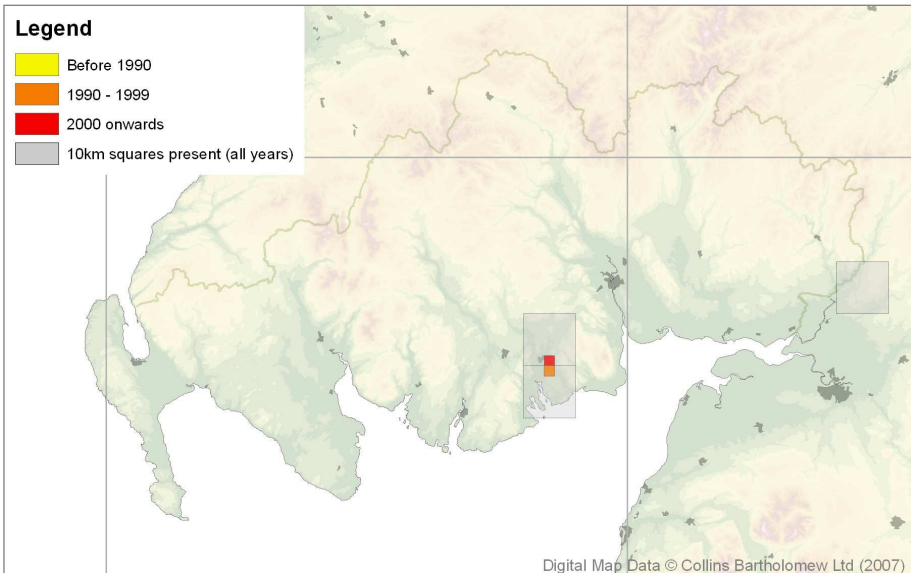
Habitat

Often seen in wetlands (acidic habitats such as bogs) where Cross-leaved Heath (*Erica tetralix*) and Purple Moor grass (*Molinia caerulea*) are found.



Local status

Only known at a single bog location near Dalbeattie. This is the only known site for this species in Scotland.



Common Ground-hopper

Tetrix undulata



J F M A M J J A S O N D

Identification

Distinguished from grasshoppers by smaller size (c.10 mm), 'heavily armoured' appearance and by its extended pronotum which covers the whole of the abdomen. Variable in colour, from mottled grey/dirty green to various shades of brown/reddish/ black. This species cannot fly.

Song

No song

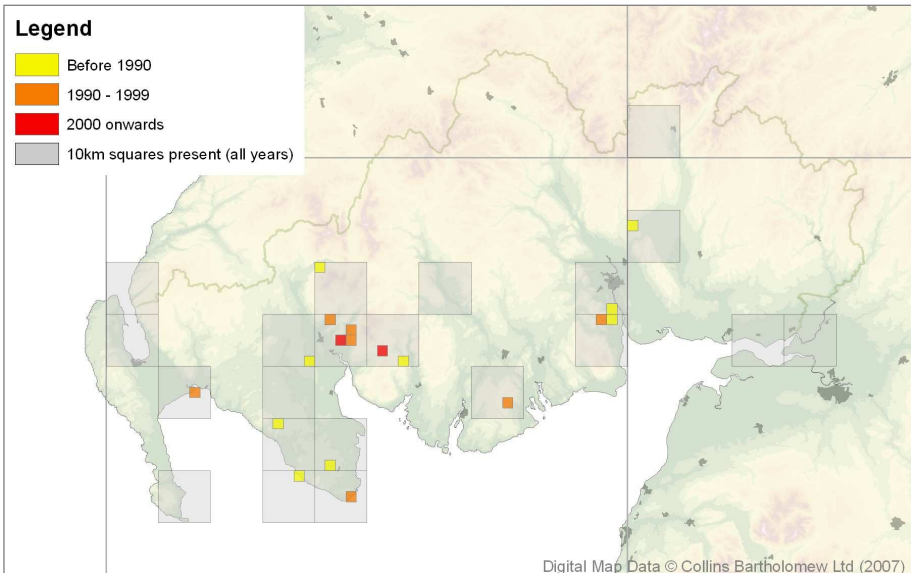
Habitat

Uses a range of habitats such as short vegetation, bare peat, sand dunes, and woodland.



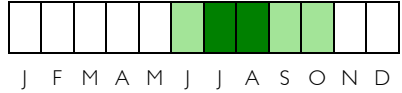
Local status

Widely distributed nationally, with widespread but scattered local distribution mainly in low-lying areas. Probably under recorded.



Common Green Grasshopper

Omocestus viridulus



Identification

14-23 mm long, usually green especially on dorsal surface with a gently curved keel on the pronotum. Never have any red or orange on the abdomen.

Song

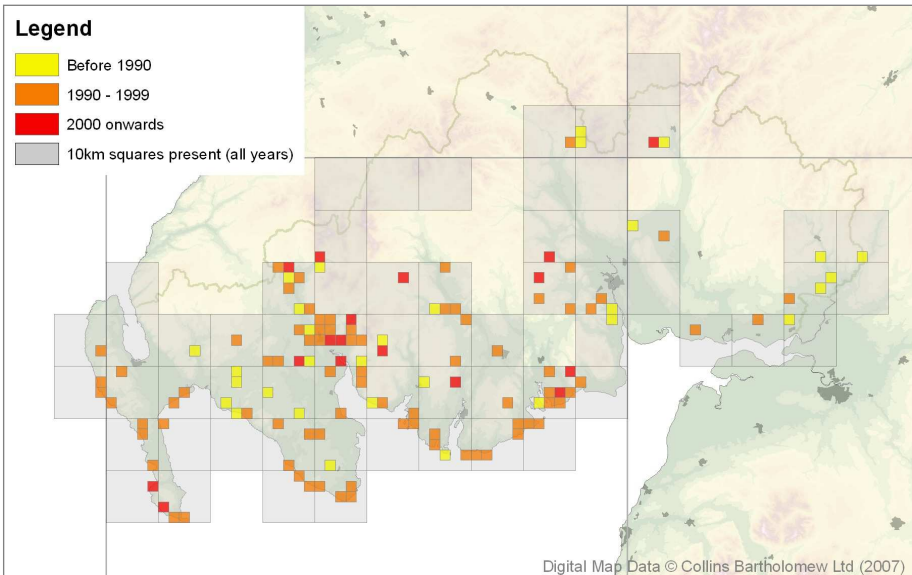
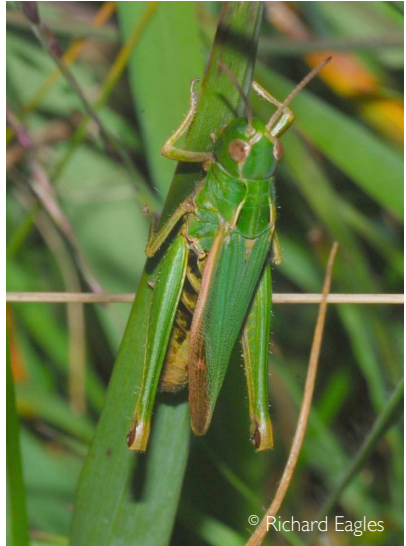
A fast ticking chirp, becoming increasingly louder for 10 to 20 seconds and suddenly stops.

Habitat

Damp meadow with long grass, but can also be seen on hillsides close to running waters.

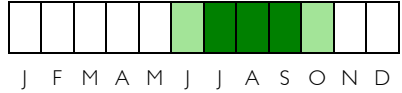
Local status

Widespread in the region, along the coast as well as inland. Possible nationally declining.



Mottled Grasshopper

Myrmeleotettix maculatus



Identification

Small, 12-19 mm long. The keel of this species is sharply and deeply indented. Male's antennae is distinctly clubbed and female's antennae has a characteristic thick end.

Song

Rapid stridulating chirps (two per second) increasingly loud for 10 to 20 seconds. Often compared to an engine having difficulty starting.



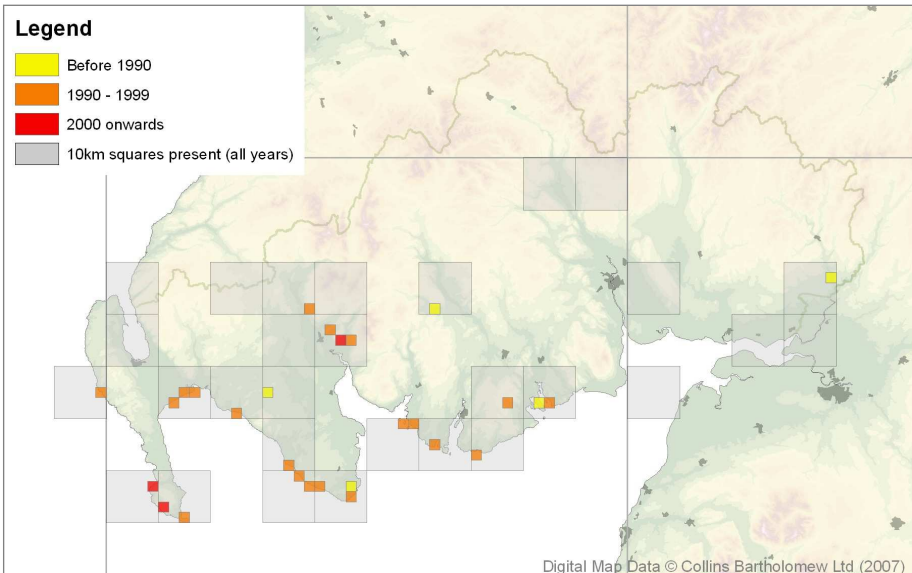
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Habitat

Prefers bare ground or short grass and sunny dry places such as sand dunes.

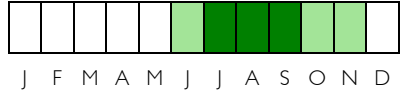
Local status

Found in many locations in the region, mainly coastal areas of Kirkcudbrightshire and Wigtownshire.



(Common) Field Grasshopper

Chorthippus brunneus



Identification

15-25 mm long with sharply angled side keels, wings are no longer than the hind-knees. This species has a distinctive hairy underside thorax.

Song

Series of two short chirps per second for between eight and 20 seconds.

Habitat

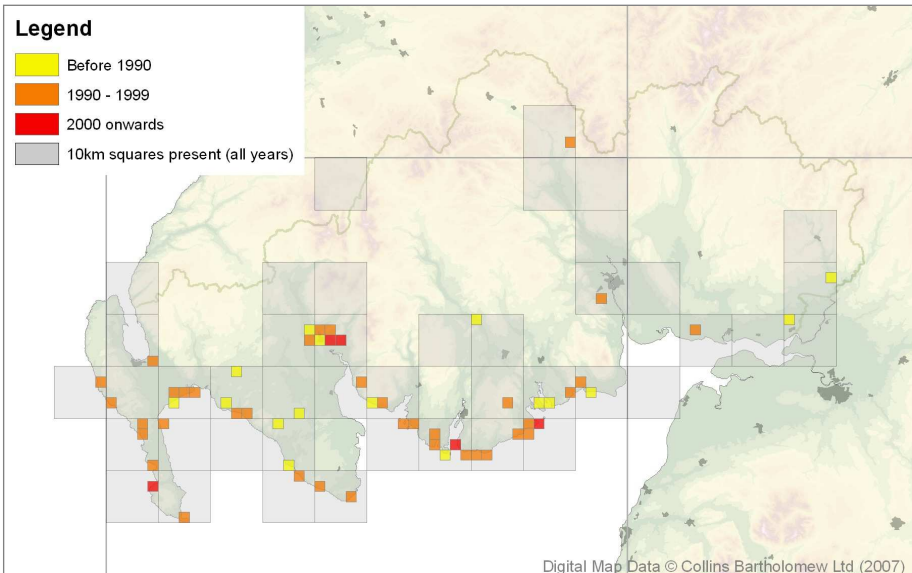
Hot sunny rocky ground, mainly in coastal areas but can also be found alongside roads.

Local status

Mainly coastal areas with a few records inland.

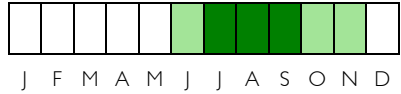


© Richard Eagles



Meadow Grasshopper

Chorthippus parallelus



Identification

10-23 mm long, usually green. Males are long-winged (macropterous) and females short-winged (brachypterous), however some long-winged females can be found. They have a gently curved keel and a protrusion on the costal margin of the wings.

Song

Chirps comprising five notes per second, lasting from one to three seconds. During summer days calls tend to be shorter.

Habitat

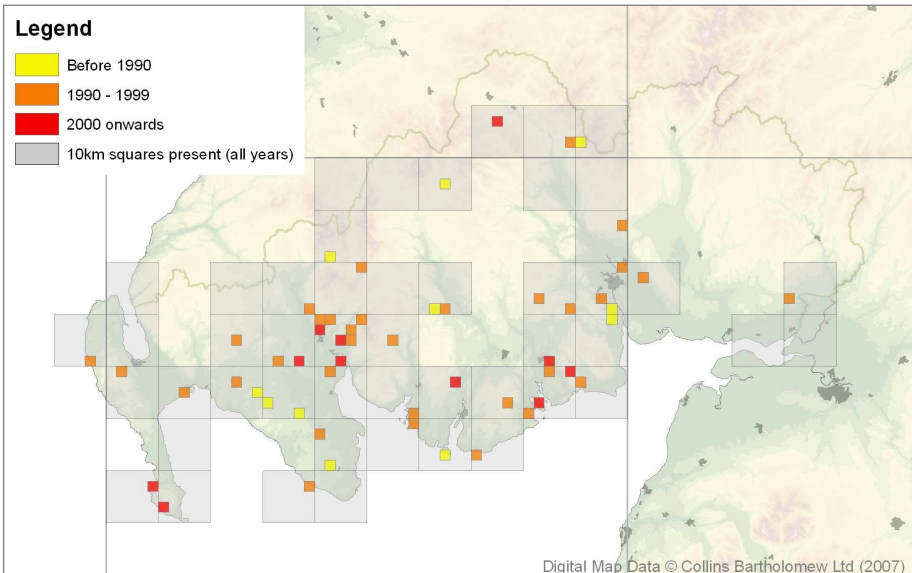
Varied habitats with long grass. Tolerates damper locations than some species.

Local status

Widespread throughout the region, though few records from Dumfriesshire.



© Flickr user 'Insect 62'



House Cricket

Acheta domesticus



J F M A M J J A S O N D

Identification

14-20 mm long (+ 10 mm ovipositor). Fully winged species with two distinctive dark bars on the head. Usually light brown.

Song

Prolific singer, with regular shrill chirp.

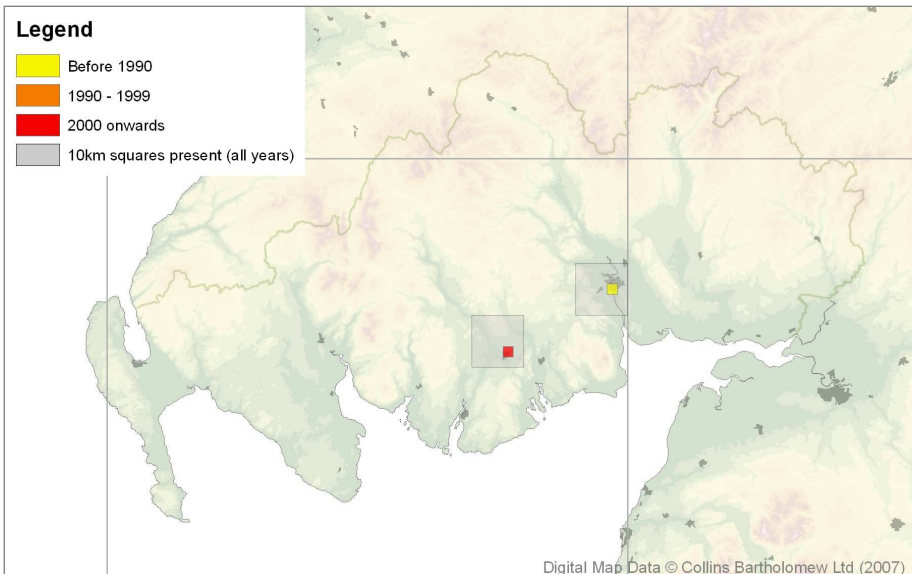
Habitat

Traditionally lived close to humans and habitation which provided food and shelters during colder seasons. Bakeries and breweries were favoured places. In warm conditions, may be observed in gardens and fields. It should be noted however, that this species occurs much less frequently today with improved hygiene in houses and enterprises.



Local status

Most easily observed in garden centres, and pet shops where they are used as food for reptiles. Recent records likely to be the result of escapes from such places.



Useful reference material

Books

Brown V.K. (1990) *Grasshoppers. Naturalists' Handbook 2*. The Richmond Publishing Co. Ltd. (Very well documented book)

Evans, M. and Edmonson, R. (2007) *A Photographic Guide to the Grasshoppers & Crickets of Britain & Ireland*. WGUK, Norfolk, Biddles Ltd. (Excellent information book, well illustrated)

Marshall, J. A. and Haes E.C.M. (1988) *Grasshoppers and Allied Insects of Great Britain and Ireland*. Harley Books.

Ragg, D.R. and Reynolds, W.J. (1998) *A Sound Guide to the Grasshoppers and Crickets of Western Europe*. Harley Books. (2 CDs).

Field Chart

Marshall, J. A. and Ovensen, D. A (1999) *Guide to British Grasshoppers and allied insects*. FSC Publications. (Folded laminated chart displaying commonly found species of grasshoppers and similar insects in Britain, easy to carry during outdoors events.)

Websites

1- Environmental Records Centre for Cornwall and the Isles of Scilly (Equivalent to DGERC). Website contains very interesting general information about grasshoppers and crickets. Good information about native species with the opportunity to hear their calls as recorded on a bat detector. Useful introduction to using bat detectors for Orthoptera recording.

<http://www.ercis.co.uk/species/orthoptera.htm>

2- Wild Guide UK

<http://www.wildguideuk.com/orthoptera.htm>

3- Buglife – The Invertebrate Conservation Trust

www.buglife.org.uk/

Contact

Orthoptera Recording Scheme is organised by Dr Peter Sutton
petersutton@freekuk.com

Documents and record cards can be obtained by emailing him.

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Dumfries and Galloway Environmental Resources Centre
Solway Heritage
Campbell House
The Crichton
Bankend Road
Dumfries DG1 4ZB.
Tel 01387 247543

Email: info@dgerc.org.uk Website: www.dgerc.org.uk

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