



Bush Crickets (Orthoptera: Tettigoniidae)



Biodiversity Action Plan

Background

Bush-crickets (family Tettigoniidae) are generally warmth-loving insects and in the British Isles tend to be concentrated in southern and eastern England. Occurrences of even the commoner species thin out towards the north of England and into Scotland and Ireland, although there is evidence of some northward range expansion, potentially linked to climate change. Two species of bush-cricket are well-established residents in the Isle of Man – the Dark Bush-cricket (*Pholidoptera griseoaptera*) and the Speckled Bush-cricket (*Leptophyes punctatissima*). Both have very limited distributions making them vulnerable to disturbance and habitat destruction. A third species, the Short-winged Conehead (*Conocephalus dorsalis*) was found living in clubrush-dominated saltmarsh at Langness in 2018 and 2019. Given the location and habitat this is unlikely to be a casual introduction and the species can be regarded as resident in the Isle of Man.

As Speckled and Dark Bush-crickets have broadly similar life histories and habitat requirements, this Biodiversity Action Plan deals with the two together. Notes on the Short-winged Conehead are added in order to raise awareness of its potential to establish further population, its possibly restricted habitat (salt marsh) and in the event of a need to provide protection.

Description

Bush-crickets differ from grasshoppers in having very long antennae, females with long, often sickle-shaped ovipositors and stridulation effected by rubbing the wings together rather than rubbing the hind legs against flexed forewings as in grasshoppers.

Dark Bush-cricket

Length 13-17mm (female larger than male). Generally brown to almost black with bright yellow or greenish yellow underside to the abdomen. Hind wings absent in both sexes. Forewings vestigial in female and reduced to small flaps in male. Body shape quite stocky.



Male Dark Bush-cricket

Photo: Graham Makepiece-Warne



Dark Bush-cricket

Photo: Richard Selman

Speckled Bush-cricket

Length 8 to over 17mm (female larger than male). Bright green with numerous tiny black spots. Male forewings and dorsal side of abdomen have a brown stripe. Female has a thin pale to dark brown stripe along the dorsal side of the abdomen and a distinctly upwardly curved ovipositor. In both sexes the hind wings are absent and forewings reduced to very small lobes. Somewhat humped shape, especially female.



Speckled Bush-cricket: female (left), male (right)

Photos: Richard Selman

Short-winged Conehead

A small bush-cricket, about 12-15mm long. Green with a brown dorsal stripe and the underside of the abdomen yellowish to brownish, sometimes with a purple tinge. Ovipositor long and curved upwards. Slimmer and flatter shape than other two bush-crickets.

[Nature Guide UK - Short-winged Conehead \(google.com\)](http://www.nature-guide-uk.com/Short-winged%20Conehead)

British Isles Distribution

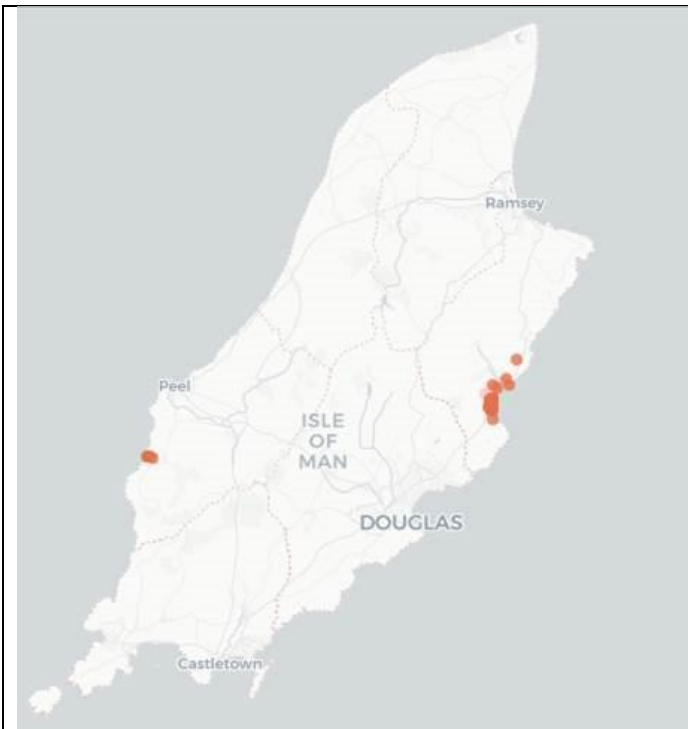
In the British Isles, Dark and Speckled Bush-crickets are widespread and common in south and south-east England becoming more sporadically recorded northwards.

Away from the southern half of England, Short-winged Conehead occurs more frequently in coastal areas and has been recorded along the Welsh coast, in north-east England and southern Scotland.

All three species are found across Europe, northwards into Scandinavia, southwards as far as Spain and eastwards to the Black Sea and Russia.

Isle of Man Distribution

In the Isle of Man, Dark Bush-cricket is known to occur along the Lonan coast from Lower Ballabeg (where it was first recorded in 1968) northwards to South Cape, frequenting rank permanent pasture, scrub and woody hedgerows, especially along the tramway. The population is regularly assessed by transect and observation. Singletons have recently been found at Garwick, south of Laxey.



Speckled Bush-cricket has been known since 1924 at Glen Chass on the south coast of the Isle of Man in the glen and neighbouring gardens and at the head of the beach at Perwick amongst wind-pruned scrub. A male Speckled Bush-cricket was found in 2020 at the edge of curragh in Manx Wildlife Trust's reserve at Close e Quayle. This may be a chance encounter of a single individual as no signs of this species have since been found at the site. Speckled Bush-crickets are brachypterous so cannot fly but are known to 'hitch' lifts on vehicles or in equipment containers and subsequent searches have failed to find any more crickets at this location.



Speckled Bush-cricket was also discovered in 2009 in coastal scrub at the western end of Glen Maye ASSI and a distribution survey in 2010 revealed Dark Bush-cricket to be present in the same area. This site is the only place on the Island where both species are known to occur together.

The presence of Short-winged Conehead in the Isle of Man was discovered in 2018 at Langness and confirmed in 2019.

Habitat

Dark Bush-crickets favour old hedges, scrub thickets, field edges and tussocky grassland with plenty of cover and egg-laying sites in rotting wood and bark crevices.

Speckled Bush-crickets are species of open woodland, garden hedges, bramble and gorse thickets.

Short-winged Coneheads prefer marshes, coastal grassland, coastal reed beds and bogs.

Ecology

Dark Bush-crickets are omnivorous, feeding on small insects, brambles, nettles and other vegetation. In the Isle of Man they are most active at dusk and into the night and can be difficult to locate without detection of stridulation. Although relatively unfussy in their habitat needs, Dark Bush-crickets do need some light and so are not found inside dense woodland. Conversely, they are not found in exposed habitats such as open fields, heaths or moorland.

Speckled Bush-crickets are mostly herbivorous and lacework-like damage to leaves such as bramble can be an indication of their presence. Although given to basking in the sun, they are quite difficult to spot and their stridulation is inaudible without the aid of a bat detector. In the Glen Chass area they can be found in gardens on the edge of the wooded areas or in hedges.

Short-winged Coneheads are hygrophilous and have been found in the Isle of Man in clubrush-dominated saltmarsh. They are omnivorous but feed mostly on seed heads, buds and flowers of grasses, sedges and rushes. Stridulation is quiet so is best located with a bat detector. Unlike Dark and Speckled Bush-crickets, this species is most active during the day and tends to go quiet in the evenings.

Commuting

Dark and Speckled Bush-crickets are brachypterous and so incapable of flight. However, when the need for dispersal arises, both species can move relatively long distances by walking and hopping. Speckled Bush-crickets have been known to 'hitch' lifts on vehicles. Although normally brachypterous, Short-winged Coneheads can develop long-winged forms in hot summers, a trait which presumably aids dispersal.

Breeding

Dark Bush-cricket eggs are laid in rotting wood or bark crevice. Nymphs appear at the end of April and adults are found in late June/early July and into September or early October if the weather is favourable. There are five or six nymph instars.

The eggs of Speckled Bush-cricket are laid in late summer in bark crevices or plant stems. Nymphs may be found in early summer on low scrub but tend to move up into canopy vegetation as they mature through six instars. Adults are present from late July/early August and can persist into early autumn.

Short-winged Conehead eggs are laid in the stems of rushes, sedges and reeds. Nymphs appear in late April/May and there are five instars before the adulthood in late July/August.

As in other orthoptera, bush-crickets use sound (stridulation) to attract mates. This is produced by a tooth-bearing vein in the left forewing rubbing against the hind edge of the right fore wing. Normally only males stridulate, but female Speckled Bush-crickets can stridulate in answer to male 'calls'.

The egg stage of Dark and Speckled Bush Cricket life-cycles can last for two winters and this two-year cycle may lead to 'odd' and 'even' year generations. If this pattern occurs in the Manx population it is possible that the two generations are genetically distinct and never actually meet.

Legal protection

Speckled (Spotted) and Dark-bush Crickets are protected under Schedule 5 of the Isle of Man Wildlife Act 1990, as revised by the (Variation Of Schedules) (Animals Which Are Protected) Order 2004.

IUCN status for Great Britain as reviewed in Natural England Commissioned Report NECR187 (Natural England 2015) cites Speckled and Dark Bush-crickets and Short-winged Conehead as Least Concern (LC). The report notes evidence of northward range expansion for Speckled Bush-crickets and 'significant' range expansion for Short-winged Conehead.

Threats

All three species of Bush-crickets in the Isle of Man are flightless (except the long-winged form of the Short-winged Conehead) and this limits their ability to disperse and find new habitats that suit their needs for warmth, shelter, food and egg-laying sites. Dark and Speckled Bush-crickets are near the northern edge of their range, although Speckled Bush-crickets appear to be able to move by stowing away on vehicles or in freight or even by just walking. However, this would seem to be an unrewarding strategy if the population is at low density in the first place. Over-enthusiastic hedge trimming, scrub or hedge removal and mowing, especially of large areas or long lengths of linear habitat would be detrimental and removal of all woody arisings may damage or destroy egg laying sites.

Short-winged Conehead may be susceptible to factors affecting saltmarsh conservation, such as lack of structural and species diversity in the vegetation, pollution, coastal development and sea level rise.

One factor that needs to be taken into account is the potential for a two-year life cycle in Speckled and Dark Bush-crickets. Eggs may remain in diapause for a year before hatching and it is possible that nymphs and adults only 'appear' every other year, making it more difficult to locate areas where it is safe to trim hedges.

Reason for BAP

Dark and Speckled Bush Crickets are at the northern and western edges of their range in the British Isles and are only found at a very few locations in the Isle of Man, making them susceptible to local extinction from habitat change or destruction. Both species are protected under Schedule 5 of the Wildlife Act 1990.

Short-winged Conehead has only recently been discovered in the wild in the Isle of Man, so its ability to survive here long term is unknown. It merits consideration for BAP treatment along with the other bush-crickets because it lives in saltmarsh, a threatened habitat.

Aims

1. Survey and monitor known and possible locations for bush crickets and establish current distribution.
2. Raise public awareness of bush-crickets, their place in IOM biodiversity and conservation needs.
3. Provide advice to property owners on precautionary measures to protect bush cricket habitat.

Linked BAPS

Saltmarsh
Deciduous woodland

Delivery Options

Active

Challenges

○ Surveys of known Dark and Speckled Bush-crickets to monitor populations and habitat	Yes	Time and opportunity for regular surveys; identification expertise
○ Further searches of saltmarsh at Langness to discover if Short-winged Conehead is established as an inhabitant.	Pending?	Time and opportunity and identification expertise
○ Publicity to raise awareness of bush-crickets and their need for protection	Occasional	Coordination
○ ASSI designation for sites which are bush-cricket stongholds	Yes	Lonan location not an ASSI
○ Conservation advice to landowners where bush-crickets are known to live	Yes?	Administration
○ Annual review and update of this document	By April 2024	

Delivery Plan

Action

Lead

Continue summer searches for Speckled Bush-crickets at Close-e-Quayle, using bat detectors to locate any stridulation and noting any signs of feeding on foliage. 2023-2025.	MWT, invertebrate group
Carry out search for Short-winged Conehead in reported Langness location, using sweep netting amongst other non-lethal techniques. 2023-2025.	DEFA
As resources permit, maintain regular checks of Dark and Speckled Bush-crickets in Lonan, Glen Maye and Glen Chass stongholds to monitor the extent of the populations. Also inspect site at Garwick where Dark Bush-cricket recently found. Dark and Speckled Bush-cricket life-cycles can extend over two years so population numbers could fluctuate from year to year. From 2023.	DEFA

Designate known sites with no statutory protection as ASSI where appropriate (<i>ASSI selection criteria 4.10: "Animals listed on Schedule 5 of the Wildlife Act 1990 are considered nationally important in the Manx context, in particular those which are known to occur at three sites or fewer."</i>). 2023-2024.	DEFA
If appropriate, designate known bush-cricket sites with no protection as Wildlife Sites. (<i>Wildlife Site selection criteria INV 1, 2, 3, 4. INV 3 says "All important breeding sites for any of the butterflies, Odonata or Orthoptera listed in the provisional Manx Biodiversity Action Plan."</i>). 2023-2024.	MWT
Establish guidelines on 'light touch' maintenance of hedges, scrub, saltmarsh and well-vegetated areas in known or suspected bush-cricket locations, including on land managed by Manx Electric Railway. 2023 onwards.	Manx Nature Conservation Forum, MWT Agri-environment scheme

References

Benton, Ted (2012) Grasshoppers and Crickets. Collins New Naturalist Library, book 120

Hall, M and Robinson, David (2020) The Speckled Bush-cricket – an unusual orthopteran. *British Wildlife* 32(1), October 2020

Isle of Man Wildlife Act 1990

National Biodiversity Network Atlas Isle of Man: [Home - NBN Atlas Isle of Man](#)

Orthoptera Recording Scheme: [Grasshoppers and Related Insects Recording Scheme of Britain and Ireland | Orthoptera & Allied Insects](#)

Ragge, David R (1965) Grasshoppers, Crickets and Cockroaches of the British Isles. Frederick Warne and Co. Ltd.

Sutton, PG (2015) Natural England Commissioned Report NECR187 A review of the Orthoptera (Grasshoppers and crickets) and allied species of Great Britain Orthoptera, Dictyoptera, Dermaptera, Phasmida Species Status No.21, [A review of the Orthoptera \(Grasshoppers and crickets\) and allied species of Great Britain - NECR187 \(naturalengland.org.uk\)](#)