

# Brush-thighed Seed-eater

## *Harpalus froelichii*



The Brush-thighed Seed-eater is a medium sized, 8.5-10.5 mm long, ground beetle with a shiny black body and legs. The beetle is strongly associated with Fat-hen *Chenopodium album* as the seeds of this plant are its main food source.

### Lifecycle

It is best seen in August and September when the seed of Fat-hen is ripening. The Brush-thighed Seed-eater's life history is unknown but is thought to have either an annual or biennial life cycle. It is active mainly at dusk and after dark and is readily caught in pitfall traps. The adults can fly and can be caught in light traps<sup>1</sup>.

### Habitat

The Brush-thighed Seed-eater prefers open vegetation on sandy soil with extensive bare ground. Regular and intense soil disturbance creates ideal conditions for ruderal plants, particularly Fat-hen which is a fast-growing annual plant associated with cultivated margins. Both the Brush-thighed Seed-eater and Fat-hen can be found on drought-stressed/dry grasslands or coastal dunes, but the latter can be less suitable for Fat-hen leading to lower beetle populations. At night it climbs up from under vegetation at ground level to feed on seed.

### GB status and rarity

Near Threatened (IUCN), GB-Nationally rare<sup>2</sup>.

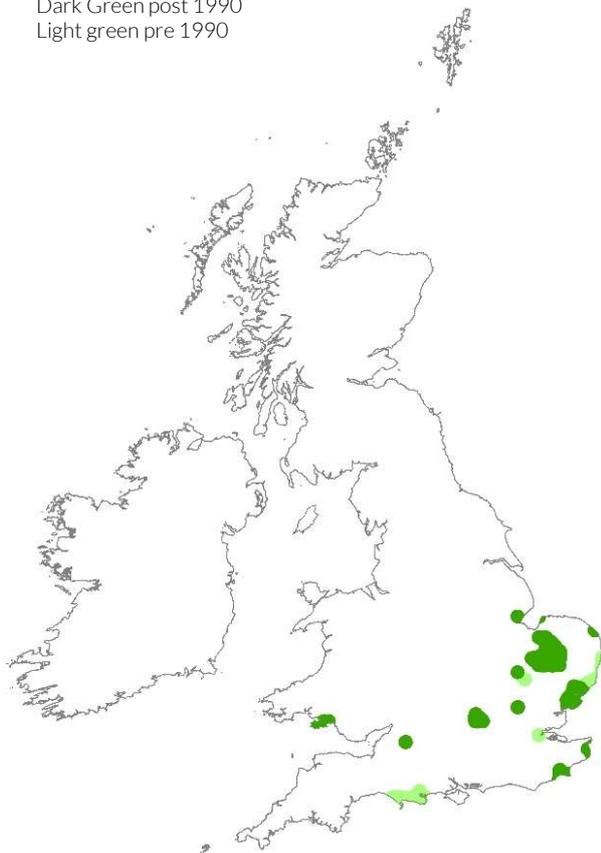
### Survey method

Nocturnal searching in April and May, targeting Fat-hen plants in arable field margins on sandy soil. Occasional records of beetles flying to moth traps in late summer and autumn.

### Distribution

The Brush-thighed Seed-eater was previously considered to be a Breckland specialist, albeit with historic records from Dorset, east Suffolk and Cambridgeshire. However, since 1990, the species has expanded its range beyond the Brecks in Norfolk and Suffolk across the wider East of England area. It seems likely that the species is experiencing a range expansion, although some previous under-recording could be a contributing factor.

Dark Green post 1990  
Light green pre 1990



### Reasons for decline

The main cause of decline is the loss of ruderal communities on disturbed sand, including field margins, which has fragmented their habitat. Changes in farming businesses from arable to poultry, use of herbicide on arable fields and seed cleaning of cereal seed are also factors contributing to the decline of the Brush-thighed Seed-eater. Habitat loss, particularly afforestation to conifer woodland on the Breckland sandy heaths has also reduced the available food sources and breaks-up habitat continuity.

### Habitat Management<sup>3</sup>

The Brush-thighed Seed-eater appears to favour regular and intensive disturbance regimes, which produce a diverse range of annual plants, but with a clear preference for Fat-hen<sup>1</sup>. It is at risk from a reduction in disturbance management regimes, tree planting and other inappropriate management practices, such as the use of herbicides.

The creation of early successional habitat by turf stripping and rotavated plots to create bare ground are effective methods for creating habitat for this ground beetle. It appears to be well adapted to using small patches of ephemeral habitat, quickly colonising newly created bare ground.

To maintain populations at these sites, stripping or disturbing plots during the winter every 1-3 years is recommended. Uncropped arable margins containing Fat-hen are ideal, especially those adjacent to semi-natural heath and grassland, and parallels management for rare and declining arable plants. Low level grazing by rabbits and deer should be sufficient to delay succession and habitat suitability on sandy heaths, grassland and coastal dunes.

### References

<sup>1</sup>Telfer, M.G. (2009) Survey for the Bush-thighed Seed-eater *Harpalus froelichii* in Norfolk, Breckland. Final Report. Norfolk Biodiversity Partnership.

<sup>2</sup> Telfer, M.G. (2016) A review of the beetles of Great Britain: Ground Beetles (Carabidae): Species Status No.25. Natural England Commissioned Reports, Number 189.

<sup>3</sup> Robins, J. (2015) Breckland ground beetle project. Buglife.  
<https://cdn.buglife.org.uk/2019/07/Buglife-Breckland-beetles-final-report.pdf>. Last accessed 02/12/2020.