

# SPECIES HANDBOOK

## Heath Tiger Beetle (*Cicindela sylvatica*)

Ecology, conservation, survey  
and management

the  
species  
recovery  
trust



## Conservation Status

# ENDANGERED

- Facing a high risk of extinction in the wild
- Population has declined dramatically over the last few decades
- Decline has been primarily due to loss of habitat

Heath Tiger Beetles have a fragmented distribution in the South of England, with small, isolated populations in Dorset, Surrey, Hampshire and Sussex.

The beetles have a poor ability to disperse and their heathland habitat has sadly become increasingly fragmented over time, as large areas have been converted for agriculture, forestry and development.

The remaining sites have been the focus of considerable conservation effort and as a result, the beetle populations do seem to be stable. However, to be confident of the future survival of the population, we need to work to increase the connectivity of the current sites, increase available habitat and help the populations grow.



## Description

The largest of the tiger beetles, it can reach 19mm in length. It has large eyes, long legs and large, powerful jaws. It is charcoal-black to dark brown in colour with pale yellow markings on the wing cases. It can be distinguished from other tiger beetle species by its black labrum (the plate over the base of the jaws). Other tiger beetle species have a pale labrum. Males have thickened fore tarsi (the end segments of their legs), with white hairy undersides.

## Lifecycle

Heath Tiger Beetle larvae are sedentary and dig burrows in the soil in which they remain during their development. The larvae are thought to go through three instars (moulting periods) before entering the pupal stage. This whole development can take between one and three years to be completed.

Once they reach adulthood, Heath Tiger Beetles are thought to live for a further one or two years. Adults breed in late spring to early summer and females oviposit their eggs into areas of bare ground. Adults are generally found from late April to early September but are mostly active between May and July.

Both adults and larvae are predatory. Larvae ambush their prey from their larval burrows, while adults are fast runners and actively hunt other invertebrates.





## Habitat

Heath Tiger Beetles are found on dry, lowland heathland. They tend to be localised in areas with dry, compact, sandy soils with a mosaic of heather age classes. They are often found on tracks or in scrapes.

We know very little about the specific habitat requirements of the larvae, but they are thought to be much less tolerant than the adults. We do know that bare ground appears to be very important to larvae, as larval burrows tend to be found clustered in areas with a high proportion of bare ground.

Adults also seem to require bare, open ground where they can hunt for prey. They also need exposure to the sun in order to reach the high body temperatures needed for their rapid movement. In addition to bare ground, adults seem to need access to patchy vegetation, particularly heather. This provides them with both shelter from poor weather and protection from predators.

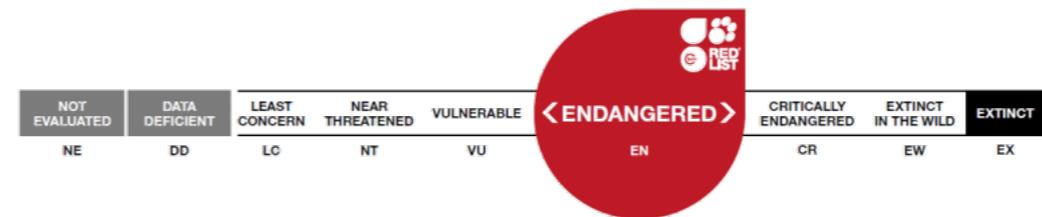
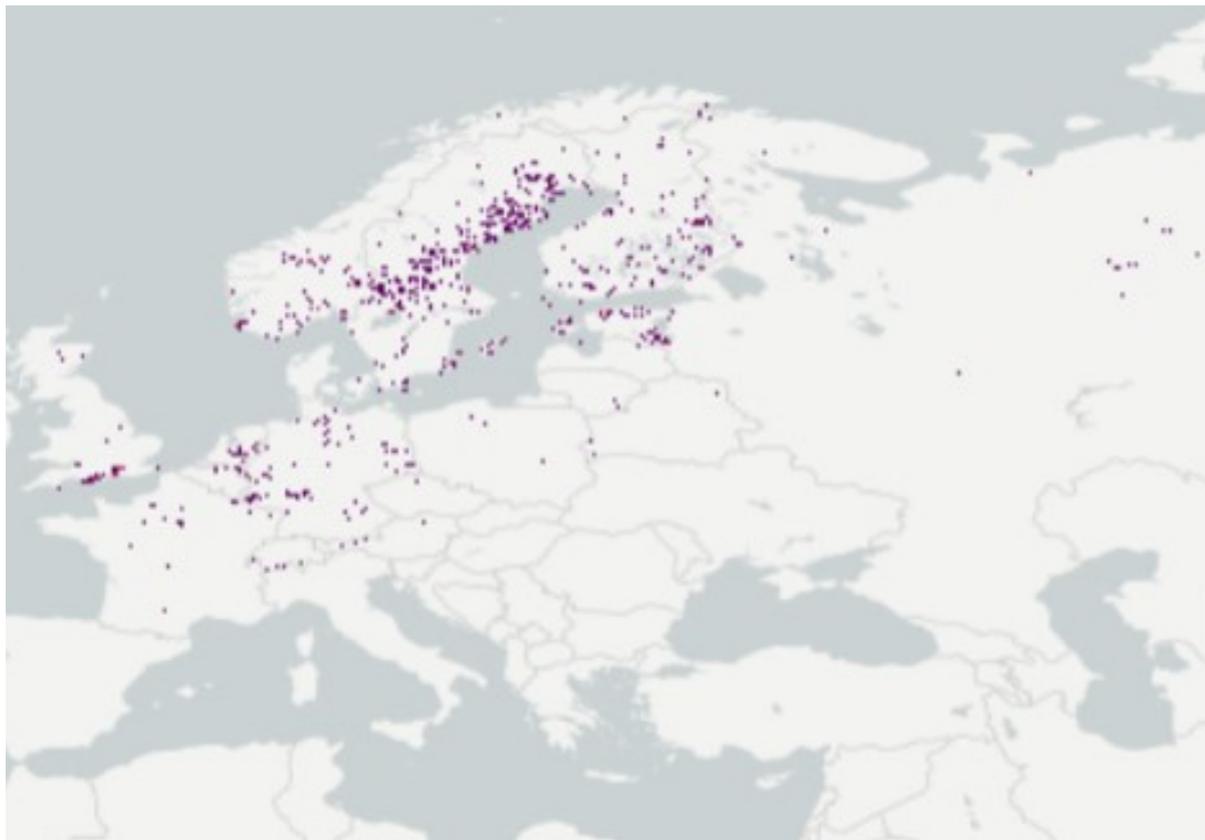
# Distribution

Occurs throughout north, central and north-west Europe.

In the UK, it is restricted to Dorset, Sussex, Surrey and Hampshire.

# Status

**Endangered**, meaning it is facing a high risk of extinction in the wild.



## Reasons for decline

The primary cause of decline has been the conversion of heathland for agriculture, forestry and development. In addition, the decline in the quality of the remaining heathland has had a negative impact, as scrub encroachment has reduced the amount of bare ground available. Much of the heathland that remains is now heavily fragmented, particularly in Surrey, Hampshire and Sussex. The Heath Tiger Beetle has a poor dispersal ability and this, combined with an increasingly fragmented habitat, has likely also been a key contributor to its decline.

## Protection under the law

Listed as a species of Principal Importance in England and Wales under the NERC Act 2006 and is a UK Biodiversity Action Plan priority species.



Scrub encroachment on a previously suitable Heath Tiger Beetle site

# SURVEY

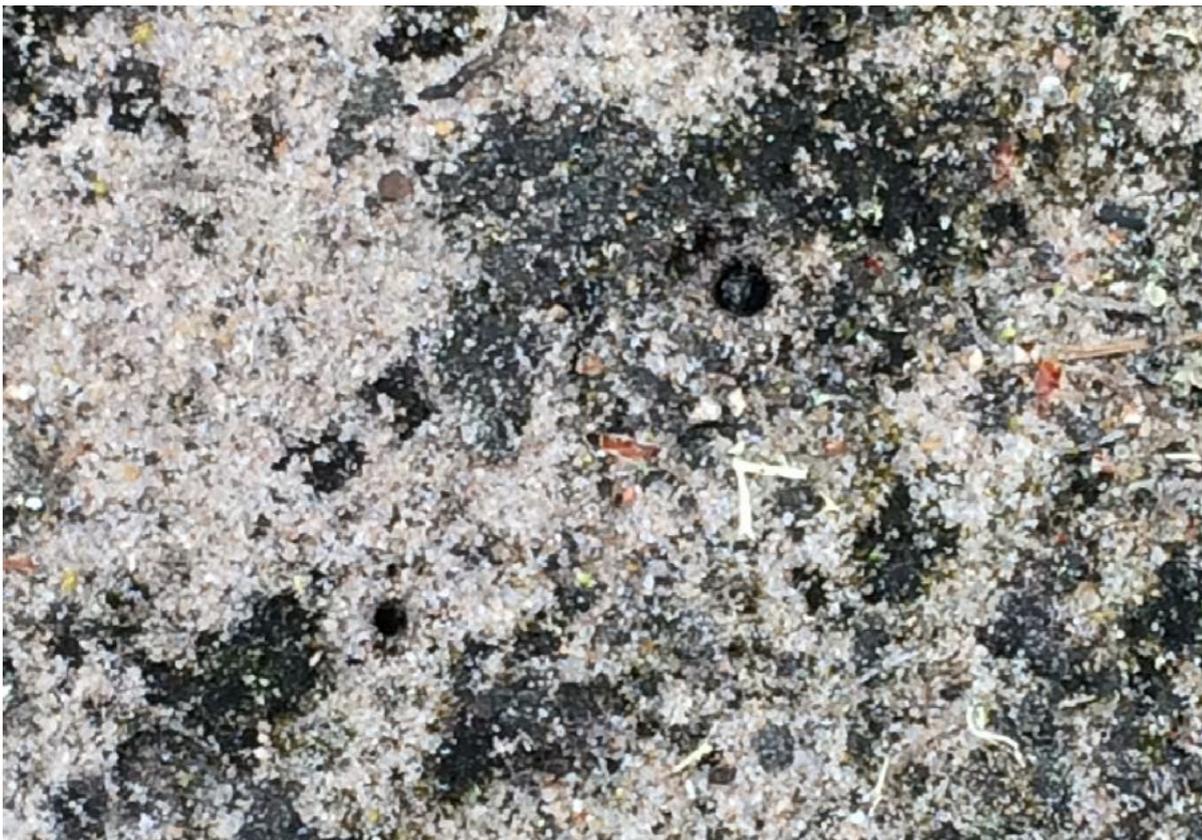
## Habitat

Target areas with compact sandy soils surrounded by a mosaic of heather.

## What to look for

**Adults:** Walk slowly along compact, sandy tracks, scanning the track and the heather border carefully for any signs of beetles. They are easily disturbed, particularly in hot weather, but will only fly a short distance. They can usually be followed, allowing for identification when they land. Care should be taken to avoid double counting individuals that fly forwards along the path when disturbed. Sitting very still on the edge of a suitable path or scrape and watching for any beetles can also be an effective survey method.

**Larval burrows:** Tiger beetle larval burrows are small, round, vertical burrows. The burrows have no spoil heap but have a distinctive haul out lip. They are often found clustered together. It is not possible to distinguish between a Heath Tiger Beetle and a Green Tiger Beetle larval burrow, but it is still worth recording the number of tiger beetle burrows that have been seen, as well as the location. We do not recommend disturbing the burrows or trying to get the larvae to come out, as this can damage them. But if you sit and watch a burrow for long enough, you may see the head of a larva appear at the surface.





# SURVEY

## When to survey

The best time of year to survey is between May and September. Surveys should be undertaken on relatively still, warm, dry days. Some cloud cover can be beneficial, as the beetles will be less likely to fly away when disturbed.

## What to record

- Numbers of beetles
- Numbers of larval burrows
- Location (8 figure grid reference or GPS if possible)
- Availability of suitable habitat (i.e. percentage of bare ground cover)
- If possible, please record on [Living Record](#). See [here](#) for a step by step guide on how to do this.

1



2



3



## Confusable species

It can be confused with the Dune Tiger Beetle (1). Dune Tiger Beetles are largely found on coastal dunes and so the best way to distinguish them from Heath Tiger Beetles is by the habitat. Dune Tiger Beetles can also be distinguished by their pale labrum.

It has occasionally been confused with the Green Tiger Beetle (2), but they are very different in colour if seen close. Beetles in flight should be followed until they land to ensure they are identified correctly.

It can also be confused with the Two-banded Longhorn (3), but this is usually seen on flowers or in woodland.

# MANAGEMENT

Studies have found that Heath Tiger Beetles are not able to disperse over great distances and it is thought that roads and woodland may act as considerable barriers to dispersal. Where Heath Tiger Beetle sites are already connected, it is very important to prevent any barriers to dispersal. In more isolated sites, it may be worth considering actions that could be taken to improve connectivity with other sites and reduce any potential dispersal barriers.

Several Heath Tiger Beetle sites are on land that is used for regular military training. It is thought that this activity is actually beneficial as it helps to maintain and create bare ground.

There are indications that regular churning of heathland tracks by livestock may be detrimental to the beetles and so it is important to find a balance whereby the tracks are maintained but not used excessively.

Periodic scrub clearance may be necessary and the creation of scrapes where there is little bare ground.



# OUR WORK

- Searched historic sites for any surviving populations
- Annual monitoring of extant sites
- Research into larval ecology
- Investigating potential for captive breeding project

# SUCCESS

- Have a much clearer picture of the true distribution of the beetle
- Rediscovered the beetle at Brentmoor Heath
- Have initiated a proof of concept captive breeding programme for the Green Tiger Beetle, which, if successful, can be expanded to the Heath Tiger Beetle

Our survey work to date indicates that the Heath Tiger Beetle is relatively stable at its core sites, but that it has been lost from all of its historic sites. Sadly, the Heath Tiger Beetle is unlikely to be able to disperse and expand its range without conservation intervention. Its habitat has become too fragmented and its dispersal ability is too limited to allow it to colonise new sites without assistance.

To help the beetle to spread to new sites, translocations have been attempted in the past, but these have largely failed. This is likely due to the small number of beetles that can be moved as part of a translocation.

We are therefore planning to focus our future efforts on a captive breeding programme. This would allow us to introduce much larger numbers of beetles into new sites, which will hopefully allow the beetles to spread back across their past range and for the population to start to recover.



The Species Recovery Trust is a charity set up to tackle the loss of some of the rarest species in the UK.

There are over nine hundred native species in the UK that are classed as under threat, with several hundreds more currently widespread but known to be in significant decline. The countryside is now bereft of many species that were a familiar sight a mere generation ago.

A small number of these species are on the absolute brink of existence, poised to become extinct in our lifetimes; our goal is to stop them vanishing.

Our aim is to remove 50 species from the edge of extinction in the UK by the year 2050. In addition we are reconnecting people with wildlife and the natural world through training programmes and awareness raising.



A photograph of a forest floor in spring. The ground is covered with a dense carpet of small, purple-blue flowers, likely bluebells. In the foreground, a large, weathered tree stump lies on the ground, partially covered in moss. The background shows a dense stand of tall, thin trees with green foliage, suggesting a mature forest. The lighting is soft, indicating a sunny day with some shade.

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