

The Tansy Beetle: Jewel of the Reedbed

Introduction

A glimmering jewel in the reedbed, the tansy beetle *Chrysolina graminis* is a large and striking iridescent green beetle. Until relatively recently this species was thought to be confined to a 45km stretch of the Yorkshire Ouse, centred on York (Oxford and Millington, 2013). However, in 2014 it was rediscovered at Woodwalton Fen in Cambridgeshire after a 40-year absence of records. Acquired by Charles Rothschild in 1910, Woodwalton Fen was one of the first nature reserves in England. The Wildlife Trust BCN now owns this spectacular site, which holds incredibly important assemblages of fenland species. We are working to discover more about this rare and spectacular species to ensure it flourishes on our site.

Tansy beetle distribution

Relatively little is known about this intriguing species. It has a similar appearance to the mint leaf beetle *Chrysolina herbacea* and some records for the tansy beetle were found to be this species, which is widespread and locally common in southern England (Oxford et al., 2003). Authenticated records show that the distribution of this species in Britain has always been centred on the Yorkshire Ouse and the East Anglian Fens, with the odd outpost elsewhere (G. Oxford, 2020, pers. comm.). Currently, the tansy beetle is only found on three sites; the Yorkshire Ouse, Woodwalton Fen, and Welney reserve. Welney is a Wildfowl and Wetlands Trust nature reserve in Norfolk where the tansy beetle was discovered in 2018.



Tansy beetle ecology

As this species is so rare and elusive, relatively little is known about its ecology. Tansy beetles have not been seen flying in Britain. They find new food-plants and habitats by walking and only travel around 200m in search of food. This limits how far populations can spread and interbreed with one another. The York population mainly feeds on tansy *Tanacetum vulgare*, occasionally feeding on gypsywort *Lycopus europaeus* and marsh woundwort *Stachys palustris* where these are adjacent to tansy. Adults and larvae both feed on the leaves of these plants (Hubble, 2014). However, the fenland populations do not appear to feed on tansy. Instead, their main food plants are water mint, gypsywort *Lycopus europaeus*, hemp-nettle *Galeopsis* sp. and marsh woundwort *Stachys palustris*.

Understanding the overwintering habits of the tansy beetle is important if we are to protect this species. The York population burrow deep into the soil over winter, whereas in the Fens, with the winter water table often at or above ground level, this would not be possible (G. Oxford, 2020, pers. comm.). More research is needed into the ecology of the tansy beetles in the fens. As the differences between these populations in terms of their ecologies are so vast, this may mean that they are separate subspecies or even species. Further research needs to be carried out into this species to establish its ecology to secure its future.

“ It became very clear to me back in 2017 just how little was known about the beetles at Woodwalton Fen. ”

Julian Hodgson, volunteer tansy beetle surveyor at Woodwalton Fen

Tansy beetle conservation

The tansy beetle is listed as Endangered in Britain (Hubble, 2014). The decline in this species is likely due to habitat loss and lack of appropriate management on the sites in which it is found leading to a loss of its foodplant. To help conserve the population in York, the Tansy Beetle Action Group (TBAG) was formed. Conservation measures there have been remarkably successful and the beetle can be quite common in the right area (Oxford et al., 2003).

As the species has more recently been discovered on the other sites, there have been fewer opportunities to monitor these populations. We also have a lot more to discover about the ecology of this species on these sites. Summer flooding can significantly detrimentally affect populations (Oxford, 2019). Five ark populations have been established near to the Yorkshire Ouse to ensure that flooding does not wipe out the entire population. These ark populations are not currently in place for other populations (Oxford, 2019).



One of the stunning tansy beetles at Woodwalton Fen. Catching them in the right light highlights their amazing iridescent colouration. Photo © Julian Hodgson

Tansy beetles at Woodwalton Fen

Woodwalton Fen is owned by the Wildlife Trust BCN and managed by Natural England. The reserve is a haven for many rare fen species due to the quality and longevity of appropriate management. Woodwalton Fen is a National Nature Reserve, a Ramsar site and a Special Area of Conservation. The tansy beetle was previously known from Woodwalton Fen and was thought to have been lost from the area until it was rediscovered in 2014.

The tansy beetle has been found to inhabit not just the ditches on the site, but deep into the fen areas. To avoid disturbing and damaging the habitat, surveys of these areas must be limited, therefore not every individual beetle can be counted. The York population is more of a linear population so potentially every individual can be counted by volunteers without damaging the habitat. Transects, therefore, have to be used to give a proxy for how many beetles are present on the whole site and to map out their distribution (Oxford, 2019). This is ongoing research and it will inform the management

of the site to ensure that this amazing species can thrive. Julian Hodgson has been surveying the tansy beetle and its foodplants on the site since 2017. He could see how little was known about these stunning, precious and rare beetles and volunteered to map out the beetles and their foodplants. His work has dramatically increased our knowledge of this species but there is still lots we need to know about this species' ecology to protect it.

The areas in which the tansy beetle is found are cut later than other areas to avoid negatively affecting the species; this has to be carefully balanced with maintaining a cutting regime that maintains the diversity of food plants that the beetle requires (K. Smith, 2020, pers. comm.)

Outside of Woodwalton Fen, we are surveying the wider Great Fen area to see if the tansy beetle is more widespread in this area. The meadows in the area are drier than Woodwalton Fen so may be more suitable for this species, if suitable food plants are available (H. Stanier, 2020, pers. comm.)

Typical tansy beetle habitat at Woodwalton Fen. Water mint and gypsywort, upon which the tansy beetle feeds in the fens, are widely distributed within the fen.
Photo © Julian Hodgson



The tansy beetles in the fens appear to feed on water mint (as shown here), alongside gypsywort and marsh woundwort, rather than tansy upon which they feed in the York population. Photo © Brian Eversham



Summary

The tansy beetle is a rare and enigmatic species for which Woodwalton Fen is incredibly important. Further research into its ecology through survey work will enable an increase in targeted management for this endangered species. Further survey work in the wider Great Fen area will help establish if the species is present more widely and inform habitat management, which will benefit a wide variety of species including the tansy beetle.

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References

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