



Butterfly
Conservation

factsheet

Sweet Chestnut

Castanea sativa

Its importance for moths and other wildlife



Sweet Chestnut
coppice stool

Sweet Chestnut *Castanea sativa* is found widely over much of Britain and is a significant constituent of coppiced woodland in south-east England, and locally in East Anglia and south-west England. Sweet Chestnut is also planted in hedgerows, woodland edges and parkland. It was probably introduced in Roman times, possibly for its nuts rather than as a woodland tree, and has since become a component of the native vegetation. In the Middle Ages it was a rare woodland tree, known to be associated with oak *Quercus* spp. and Beech *Fagus sylvatica*. Sweet Chestnut woods were planted from the late 17th century onwards, but particularly during in the 19th century. For example, many Wealden coppices are uniform Sweet Chestnut and were planted in the mid 19th century. Sweet Chestnut coppice stools are typically about 1m diameter, but larger ones are not uncommon, some of the oldest and largest coppice stools approaching 5m in diameter. The timber from Sweet Chestnut coppice has been used extensively for paling posts and hop poles.

The moths of Sweet Chestnut

Over 70 species of moths feed on Sweet Chestnut in the larval stage, although this is not the primary foodplant and larvae (caterpillars) tend to be found at low density. This total is comparable to those utilising Wych Elm *Ulmus glabra*, Alder *Alnus glutinosa* and Beech as hostplants. Many of the species found on Sweet Chestnut have more usually been found feeding on oak *Quercus* spp., another member of the Fagaceae (e.g. Green Silver-lines *Pseudoips prasinana*). This taxonomic relationship makes it more likely that related trees share chemical and physical features, enabling some species to use them as foodplants.

Several nationally scarcer species, such as Scarce Merveille du Jour *Moma alpium*, typically associated with oak, and Waved Carpet *Hydrelia sylvata*, have been found feeding on the leaves of Sweet Chestnut, whilst many, more widespread moths, such as the local Brindled White-spot *Parectropis similaria*, will also eat Sweet Chestnut. A few species mine individual leaves, an example being the tiny *Stigmella samiatella*, the adult moth having a wingspan of just over 0.5cm. The dead and decaying leaves have their own fauna, with the scarce tortricid moth *Spatalistic bifasciana* and Olive Crescent *Trisateles emortualis* (a UK Biodiversity Action Plan Priority species) being associated with leaves hanging in the understorey. The requirements of the early stages of the Clay Fan-foot *Paracolax tristalis*, another UK BAP Priority species, are poorly understood, but the highest populations of this moth occur in and around Sweet Chestnut coppice, strongly indicating a link with this habitat.

The nuts of Sweet Chestnut are food for a few species, including the tortricid moths *Pammene fasciana* and *Cydia splendana*. The Yellow-legged Clearwing *Synanthedon vespiformis*, usually found on oak, will occasionally utilise Sweet Chestnut, feeding under the bark, whilst fungus-infected trees can support species such as the

brightly coloured micro-moth *Oecophora bractella*, a rare species nationally, the larva of which is also found under the bark. The trunks of the trees can be home to other species, for example the case-bearing moth *Taleporia tubulosa* which probably feeds on algae.

The diversity within Sweet Chestnut coppice is indicated by the fact that over 200 species have been recorded on a single June night at a site in Sussex. Some species may have a preference for the early stages of the coppice cycle which can support a wide range of woodland herbs in the ground flora. These herbs are fed on by many species, for example the nationally scarce plume moth *Capperia britanniodactyla* which is associated with Wood Sage *Teucrium scorodonia*. Others, such as the Waved Carpet, have a preference for six to nine year old coppice, whilst the Bordered Sallow *Pyrrhia umbra*, more typically a moth of open habitats, seemingly has a preference for low coppice regrowth within woodland. Other species are found more frequently in older coppice (e.g. up to about 20 years in age), and include Oak-tree Pug *Eupithecia dodoneata*, *O. bractella* and *S. bifasciana*.

Other invertebrates associated with Sweet Chestnut

Sweet Chestnut coppice can be home to a range of other scarce and threatened invertebrates. On a few actively managed coppice sites in southern and south-eastern England populations of the Heath Fritillary *Melitaea athalia* or the Pearl-bordered Fritillary *Boloria euphrosyne* (both UK Biodiversity Action Plan butterflies) can be found. The Southern Wood Ant *Formica rufa* can be locally frequent on some sites, preferring recently cut areas and benefitting from direct sunlight on its nests. There are a wide range of beetles associated with the nests of Southern Wood Ant, including the Scarce Seven-spot Ladybird *Coccinella magnifica*, a nationally scarce species, and the striking *Clytra quadripunctata*.

Habitat management for moths on Sweet Chestnut

The main aim of management within coppice situations is to maintain a regular rotation, with patches being cut annually on 15-30 year cycle.

This rotation provides a regular supply of habitat in the early stages of succession, giving rise to bare ground and a flush of herbs and new growth on which many species depend. This should be combined with the retention of much older coppice blocks (15-30 years), which support a range of other species, including species associated with fungus-infected trees. A range of intermediate age classes need to be well represented in any coppice cycle. Additionally, coupes to be cropped should not be isolated from one another, so that in successive years open areas are created close by.

Associated with the coppice cycle are a wide range of other plants and micro-habitats, each of these supporting a range of species. Oak standards are often present and effort should be made to ensure continuity of the existing density of these, whilst avoiding dense shading. Standard cover varies from site to site, but ideally should not exceed 20% of the ground area. Dead and decaying leaves are an important resource, and if cropping/cutting has taken place some branches can be piled up and left in situ. However, Sweet Chestnut can take time to decompose, so most should be removed. Fallen branches hanging from trees and fungus-infected trees should be left in situ, rather than being tidied up as they can provide important breeding habitat for some rare species.

How to survey and monitor

The moths of Sweet Chestnut can be surveyed by a range of different methods:

- ◆ Running light traps. A wide range of species can be recorded using this method.
- ◆ Sugaring and wine-ropes. Many species will visit these artificial attractants.
- ◆ Netting flying insects by day.
- ◆ Tapping the foliage of Sweet Chestnut to disturb resting moths.
- ◆ Beating Sweet Chestnut branches for larvae.
- ◆ Collecting leaf mines.



Top right **Heath Fritillary**

Middle right **Olive Crescent**

Middle left **Olive Crescent larva**

Bottom right **Oecophora bractella**

Below **Spatalistic bifasciana**



Butterfly Conservation

Saving butterflies, moths and our environment

Head Office Manor Yard East Lulworth Wareham Dorset BH20 5QP

Telephone: 01929 400209 Email: info@butterfly-conservation.org

www.butterfly-conservation.org

Compiled by Mark Parsons. Photographs by Patrick Clement, Dan Hoare, Mark Parsons and Kelly Thomas.

Butterfly Conservation

Company limited by guarantee, registered in England (2206468)

Registered Office: Manor Yard, East Lulworth, Wareham, Dorset, BH20 5QP

Charity registered in England & Wales (254937) and in Scotland (SC039268)



Supported by

The National Lottery[®]
through the Heritage Lottery Fund



THE tubney
CHARITABLE TRUST

Produced as part of Butterfly Conservation's South East Woodlands Project with funding from the Heritage Lottery Fund and supported by The Tubney Charitable Trust.

Designed and produced by nectarcreative.com 01942 681648.
Printed on 100% recycled stock including 75% post-consumer waste.