

Life cycles of Purple Hairstreak and White-letter Hairstreak

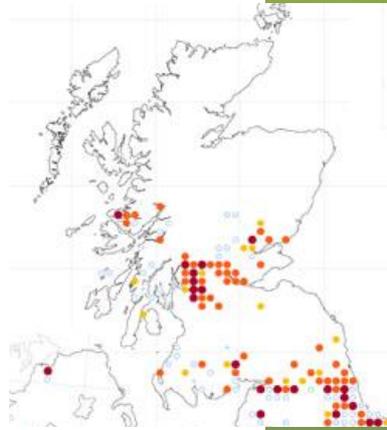
Of the three 'hairstreak' butterflies in Scotland, two are entirely associated with trees (the Purple and White-letter Hairstreaks), while the Green Hairstreak is only found on Blaeberry. These butterflies all have a hint of a 'tail' coming from the hindwing, and they belong in the Lycaenid group which includes the blue butterflies and the Small Copper. Like those butterflies, they have beautiful metallic colouration – if you manage to find them! If you want to see Purple or White-letter Hairstreaks, some planning may be required.

Purple Hairstreak: Purple Hairstreaks are only associated with mature **oak** trees (including the native Sessile and Pedunculate Oaks, as well as introduced species). An entire population of Purple Hairstreaks may be supported on single trees, where they can be seen flying in the canopy on summer evenings. They are regarded as being especially active between **5pm and 8pm**, and are mostly found on the sunny sides of trees. They get most of their sugar from honeydew excreted by aphids, but will sometimes nectar on plants at ground level. When they are most active, viewers on the ground may notice flashes of bright silver as they chase one another. Males will chase other butterflies and make approaches to females, and there is little courtship before mating.

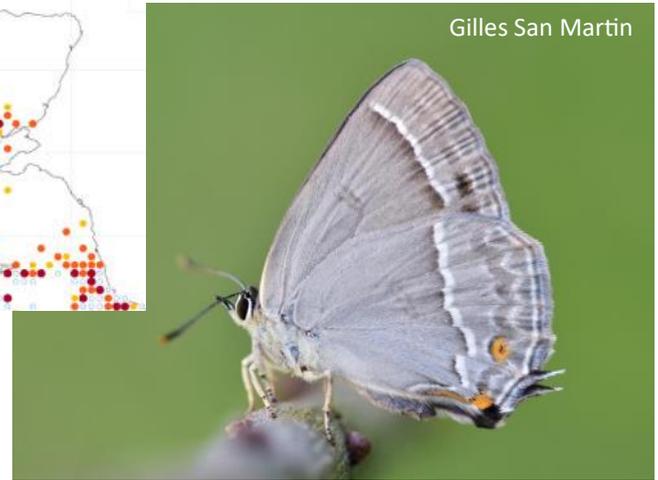
After mating, females will fly around boughs of the tree (usually in full sun, on the south side of the tree) and lay eggs on the dormant buds which won't burst until the following spring. Because of this, the shell of the egg is quite thick and the caterpillars don't hatch until the following spring – about eight months after being laid! It is therefore possible to survey for this species by looking for the eggs in winter when the leaves have fallen. The caterpillar emergence is very well-timed with the bursting of oak buds so they have plenty of fresh, soft material to eat.

The caterpillars are brown and very well camouflaged among the buds. At first they burrow into the bud and feed there, but larger caterpillars will feed openly on the leaves at night, living within a small tent made from silk and leaves. To pupate, they descend to the ground and make a chrysalis in soil or moss. But research has found that they produce substances which are attractive to ants, and can make noises like ants and have been found inside ant nests, so they seem to have a relationship with ants.

In Scotland, Purple Hairstreaks mostly emerge in **July and peak in mid-August**. They are found here in scattered populations from Dumfries and Galloway in the south, to Pitlochry and Fort William in the North. They are most widespread in the central belt, especially north of Glasgow and Stirlingshire.



Gilles San Martin



Gilles San Martin



Purple Hairstreak egg, Peter Eeles

White-letter Hairstreak: The White-letter Hairstreak is Scotland's newest species of butterfly! While it was historically found here, it hadn't been seen since 1884 and was considered extinct in Scotland. That is until 2017, when Iain Cowe (Bordered Butterfly Recorder) spotted a single adult near Paxton in the Borders that looked very worn and could have been a migrant blown from the south. Searches that winter did find eggs near Coldstream and the butterfly was confirmed as breeding for the first time in Scotland in 130 years!

White-letter Hairstreaks are associated with **Elm trees** (several types of Elm can be used), and like the Purple Hairstreak they get most of their sugar from aphid honeydew. However they are likely to take nectar from flowering plants in the early morning or late afternoon. Unlike Purple Hairstreak they are most active early in the day when males may be seen clashing and spiralling around one another in the tree tops. Usually only the underside of the wings is seen, and it's a warm brown colour with a white 'w' shape, giving the butterfly its common name.

The eggs are laid on bare twigs and the caterpillars remain inside them over winter, emerging in spring when the leaves emerge. At first they burrow in the buds and eat the material there, but later will eat the leaves and make distinctive cuts and holes in the leaves which can be a useful way to look for new sites. The pupa is formed on the tree (on leaves, stems or bark), and adults emerge around July in Scotland and fly into August.

So far this butterfly is known from sites in the southern borders but may be more widespread and it's worth looking for. Some locations include Kelso, Kalemouth and Paxton.



White-letter
Hairstreak,
Iain Leach



White-letter
Hairstreak egg,
Peter Eeles



White-letter Hairstreak caterpillar,
Peter Eeles

