Species Report - Black Hairstreak Monitoring.




In 1998 we started a more concerted recording effort for the Black Hairstreak, combined with a search for historical records in the Upper Thames Region. Below is a summary of the information gathered and knowledge gained from our research. It will take many more years of monitoring to come to any firm conclusions but each year of observation improves our knowledge of the butterfly.

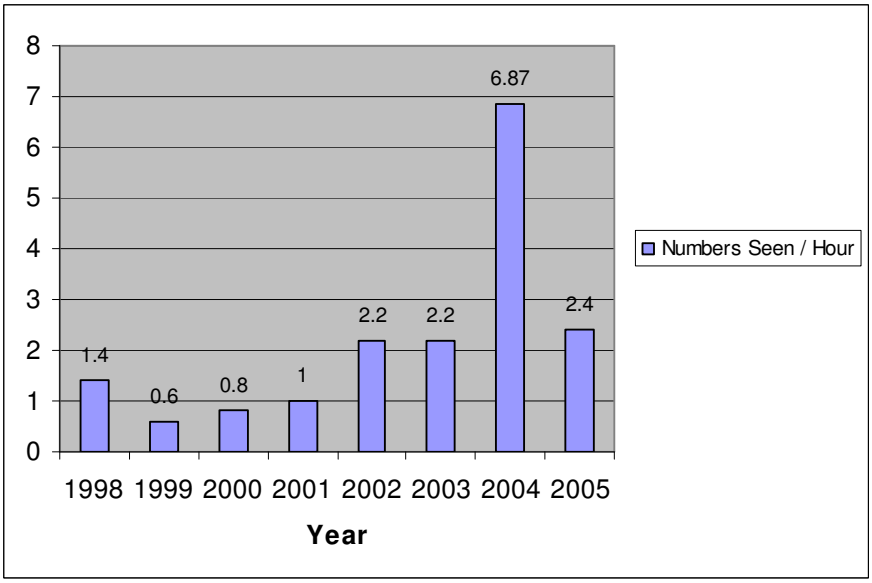
The numbers seen in the first year (1998) were similar to our more casual observations during the 1990s, but in 1999 numbers seen were dramatically reduced (see chart), the flight period passed with none being seen at many of the best known sites.

When searching for a reason for this I recalled the weather during the flight period in 1998. It started with a very warm and humid day 21.6℃.This was followed by a week of moderate winds and showers, and then a week of easterly winds which brought cloud in off the North Sea and maximum temperatures of 15-16℃. The following week changed back to a further week of wind and showers.

It is probable that the majority of B.H. adults would have emerged on the first ideal day in 1998 and the weather that followed would have given them little opportunity to oviposit. The female B.H. lays her eggs throughout her life which can at most be 2-3 weeks, so the poor weather would have resulted in many having died whilst retaining most of their eggs.

Should we ever get two consecutive years like 1998 it would likely result in the loss of many of our colonies. Indeed we have been unable to confirm that several of our colonies seen prior to 1998 still exist.

This could have contributed to its current restricted range, with only the very best habitat able to maintain a colony through such unsuitable weather, thus emphasising the need to manage the Blackthorn to produce as much shelter as possible, with a mosaic of differing heights where the temperature in the hollows would be that few degrees warmer, necessary to encourage the females to oviposit in such poor weather.



The numbers for 2005 are only provisional as we have not received all the records yet.

As can be seen in the chart numbers recovered very quickly after 1999, with consecutive years of good weather until 2004 when we had an explosion in numbers. This was probably due to us having no late spring frosts; such frosts have been said to have an impact on numbers in the past.

Our monitoring over the first few years found few B.H. outside the core areas where they had been known to exist for many years. But as numbers increased they have been found adjacent to well known sites, indicating an expansion in range.
Other locations with historic records have been re-discovered. At two sites they had continued unseen for 40 years. At another site monitored in 2001-3 there was no success despite a total of 12 hours observation and yet in 2004 twelve B.H. were seen in just 30 minutes.

Previous estimates of 30-50 colonies for the whole country did not have the benefit of longer term monitoring so it is likely that many colonies would have been overlooked. In Bucks and Oxon alone we have an estimate of over 40 colonies and have discovered the B.H. at 8 new sites since 1998.

The records from the 1970s and 80s show the flight period for the butterfly to be from the middle of June through to the first week in July; it is now at least a week earlier. In 2004 the first ones were seen on the 6th of June, whereas few are seen in July now. This has happened with other species and is probably due to climate change; if we get the predicted extremes in weather conditions it is likely to be detrimental to the future of the B.H.

Nearly all information on the B.H. indicates that it is a woodland or woodland edge butterfly. Searching old records we found several hedgerow records and our recent observation have confirmed that some still exist. One woodland site clear felled in the early 1980s and presumed to have resulted in the B.H extinction has been found to still contain a quite healthy colony. We have found new hedgerow colonies. In 2004 the butterfly was as numerous along hedgerows as at woodland sites - see fig 1 for the colony location details.

Colony information

The current number of colonies in Bucks and Oxon*	43
Colonies within Woodland	6
Colonies in Woodland edge sites	22
Colonies at Hedgerow Thicket and Copse Sites **	17
Some of the Features of these Colonies	
Hedgerow Colonies at Roadside sites	6
Colonies Associated with Bridleways and Footpaths	9
Colonies alongside Railways	2
Colonies with Private Landowners	19

* With the Increase in numbers in 2004 it has become more difficult to define the boundaries between one colony and another so this can only be an estimate.
** Two of these colonies extend out from Woodland edge colonies for over 100 metres.

Fig 1

With the maturing of much of our woodland the Blackthorn has been shaded out. The advent of the flail has dramatically changed many of our hedgerows. It is to be hoped that the new environmental stewardship will encourage better management of the Blackthorn for the B.H.

With an initial estimate of only 5 meta-populations I became very concerned that the majority of our colonies had continued in isolation for long periods, 50 years for some. I feared that they would now be genetically impoverished. However we can now see that it is likely that the occasional explosion in numbers, as happened in 2004 and previously in 1986, would lead to the establishment of satellite colonies around the core sites, in many cases in hedgerow thickets. These would then become isolated when the numbers fell, with genetic changes taking place over the following years. The next explosion in numbers would likely result in individuals and therefore genes being exchanged, thus contributing to genetic health.

Although the current situation for the B.H. looks promising it conceals the probability that we have lost 10-15 % of our colonies in the last 15 years.

In the spring of 2005 we were fortunate to find both eggs and pupae. If we can find them again in future years it may give us the chance to monitor predation by birds and parasitic wasps which have been said to have had a considerable impact on this species in the past.
If we continue our monitoring over the coming years we should be able to confirm our suspicions and increase our knowledge of the Black Hairstreak's behaviour and habitat requirements, enabling us to encourage better management of the habitat to give this rare butterfly a more secure future.

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