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## An Interview with David Simcox - Senior Scientific Officer in Biodiversity, Centre for Ecology and Hydrology (CEH)

Peter Eeles



Photo © Peter Eeles

*I first met David, by chance, in June 2007 at Collard Hill, the Large Blue open access site. David's reputation had preceded him and I was more-than-aware of David's pivotal role in the reintroduction of the Large Blue butterfly to our shores. After that initial meeting, we agreed that it would be good to meet up sometime for a longer chat.*

*And so it was to be. David kindly showed me around several Large Blue reintroduction sites in Somerset in June 2008, where I learned a great deal about the reintroduction programme and the ecology of the Large Blue butterfly. We also sat down for lunch where I got the chance to ask David some burning questions, starting with the most basic Å-*

### **Pete:**

Thanks for agreeing to be interviewed, David. So let's start at the very beginning - how did you first get interested in butterflies?

### **David:**

One of my earliest memories is in the kitchen of the house I grew up in, in Birmingham, of a "woolly bear" caterpillar that I'd found in the garden. I had it chasing up and down, on top of the washing machine - in hindsight it was probably parasitized! In fact, that's one of my earliest memories of anything!

Thankfully, my folks moved from Birmingham when I was 6 to the New Forest, so I was really fortunate to grow up there. I had a second cousin who came to stay for a week at one time. I'd never met him before, but it turned out that he was a butterfly collector. He was a couple of years older than me - I would have been 10 or 11 at the time. We went off every day into the New Forest and had a great time. We subsequently sent each other livestock, such as Small Tortoiseshell caterpillars.

When I was about 12, a teacher at my school, who was a retired colonel, found out that I was interested in butterflies and told me that he had a huge collection that his father and brothers had made just before the Second World War, and that it was in a terrible mess and housed in many cabinets. He wondered if I would like to help sort the collection out - and so I did that for about 2 years. I used to go for a day, every weekend, to sort out the collection - which was amazing. When I finished, he gave me a cabinet with a lot of spare specimens. That did me a lot of good since it instantly killed my interest in collecting since I pretty much had a specimen of every British species. So I thought - time to find something else to get interested in with regard to butterflies.

So I began breeding butterflies and through that teacher, and through my local natural history society in Ringwood, I got to meet a lot of the "old collectors" such as Baron de Worms, Robert Watson, L. Hugh Newman and Donald Russwurm, the book illustrator. They were fascinating people who had incredible stories about butterflies. It really got me enthused. All the time, I would say to them "why is this butterfly becoming rarer?", "why can't you find Adonis Blues where you used to find them?" They used to come out with what were, then, the very fashionable theories for declining populations such as pollution and air quality. But none of it could they measure. So I was already getting interested in finding out why things were getting rarer.

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I'll now fast-forward to when I was at Bournemouth Technology College, where I was studying A Levels in Zoology, Botany and Geology. A

friend brought me an advert he'd found in the Bournemouth Evening Echo for the Institute of Terrestrial Ecology (ITE), which later went on to become the Centre for Ecology and Hydrology (CEH). The advert was for an assistant to work on Large Blue butterflies. That would have been 1977, which was the year before they became extinct.

I applied for the post -and got an interview! I went along and there were seven people on the interview board. There was one chap who was nearest to my age - Jeremy Thomas. We just made each other laugh, and I remember laughing all the way through the interview, which was probably not the thing to do and not surprisingly I didn't get the job. A couple of months later I got a phone call from Jeremy asking if I was interested in a year's employment, with two other people, looking at rare species of butterfly in Dorset. This was part of the government's new "Job Creation Scheme". This was in November 1977 and the job started the following January. I was four terms into my A Levels by then and I had to do a lot of soul-searching; a lot of people said that I should finish my A Levels, but I just thought this was a golden opportunity.

So I took the job which was based at the Institute of Terrestrial Ecology in Furzebrook, Dorset. We were mainly looking at the distribution of 6 species of butterfly in Dorset - Adonis Blue, Small Blue, Lulworth Skipper, Silver-spotted Skipper, Marsh Fritillary and High Brown Fritillary. The other main scientific aspect of what we were doing was with regard to the Butterfly Transect Method, which Jeremy and Ernie Pollard had developed. At the time, there was no evidence to show that the Butterfly Transect Method really did provide a direct correlation with population size. So, for several species, we did transect counts, and on the same days made mark and recapture estimates, to determine if there really was a correlation between the population estimate and the transect count. The results showed that there was, indeed, a very strong correlation.

"At the time, there was no evidence to show that the application of the Butterfly Transect Method really did provide a direct correlation with population size."



**Large Blue female at Collard Hill**  
Photo © Peter Eeles

**Pete:**

And, presumably, the transect method is much easier to execute than mark and recapture?!

**David:**

Yes - in those days we used to use oil paints and bits of grass to mark the butterflies. I spent a week putting individual marks on Lulworth Skippers as part of a mark and recapture program!

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Working at Furzebrook made me realise that, if I wanted to do this seriously, I had to get a degree. So I carried on with my A Levels in the evenings and then went on to do an Ecology degree at the Royal Holloway College in London.

After my degree I was employed by the Institute of Terrestrial Ecology on short-term contracts. I was also employed in Edinburgh to set up a tropical butterfly house. This was fantastic and, through that, I got to travel throughout the Far East, and helped set up butterfly ranching schemes in Sri Lanka, Taiwan and Malaysia. I also got very interested in the educational potential of tropical butterfly houses.

"I also got very interested in the educational potential of tropical butterfly houses."

The opportunities in Edinburgh were superb because we worked closely with Edinburgh Zoo and Edinburgh Botanical Gardens, who were very educationally-oriented. I was working for Clive Farrell, who was very kind to me and gave me the opportunity of working in Asia and, by releasing me to go and do work on the Large Blue, with the Institute of Terrestrial Ecology.

**Pete:**

So who decided to reintroduce the Large Blue?

**David:**

The Large Blue had become extinct in 1979 and Jeremy Thomas' work had shown why - he accurately described the butterfly's ecological requirements and the management needed to restore suitable habitat.

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Both the Nature Conservancy Council and the Institute of Terrestrial Ecology were very keen to prove the science with the ultimate test - to attempt to reintroduce the Large Blue, based on Jeremy's work.



**Large Blue underside**

Photo © David Simcox

**Pete:**

So how did you make a start on the reintroduction?

**David:**

What we didn't know at that time was whether there were any donor populations. I was asked by Jeremy if I would do a search across a number of different sites in France, Belgium, Denmark and Sweden to see if I could find a potential donor population. This wasn't easy as it was disappearing from other countries for all the same reasons they became extinct here.

I eventually found them on an island off the east coast of Sweden called +land. The only record we had of them there was from one of our ITE colleagues who had been working on ants there 20 years earlier, and had dug up some *myrmica* ant nests and found a Large Blue caterpillar. When I eventually found the site I climbed over a gate, and a male Large Blue landed at my feet!

"When I eventually found the site, I climbed over a gate and a male Large Blue landed at my feet!"

It was literally one of those moments where it all comes together. But at that point we didn't really know if it was going to work at all since, in Sweden, the adults fly about a month later than they do here. So I brought eggs back, reared the early-instar larvae on thyme, and later Jeremy put the larvae down on sites on Dartmoor. We weren't sure if the lifecycle would go through in 48 weeks to be in synchrony with the thyme flowering, or in 52 weeks after the thyme had finished flowering. As it happened, it came through in 48 weeks which was exactly what we were hoping for!

**Pete:**

The British subspecies of Large Blue was *eutyphron*. The Swedish subspecies is *arion*. Isn't this introducing a "foreigner" to our shores?

**David:**

The separation into subspecies is generally performed by taxonomists who are looking at morphological features on the adult. They tend not to look at the ecological requirements of the species or their behaviour in each developmental stage, for example.

Some of the populations we've introduced are now 18 generations old. In human terms that would take us back to about 1550. As far as I'm concerned, ecologically, these populations are behaving exactly as the British populations. If you're going to look at subspecies, there's a strong argument to say there were 6 regions of Large Blue in this country, and they were each represented by a different subspecies based on the criteria of morphological features.

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**Large Blue mating pair, Collard Hill**

Photo © Peter Eeles

**Pete:**

So why is it important for us to reintroduce an extinct butterfly?

**David:**

I think it's important for a number of reasons. The first is for us to know whether it's actually possible. Before the Large Blue Project no serious scientifically-underwritten attempt had been made to reintroduce a species of insect that had become extinct.

"Before the Large Blue, no serious scientifically-underwritten attempt had been made to reintroduce a species of insect that had become extinct."

The second is what we have learned can be applied in other countries and to other species. What has come out of this project has been, for instance, large scientific and conservation efforts on all of the species of *Maculinea* across the whole of Europe - many of which are much rarer, globally, than the Large Blue.

**Pete:**

It sounds like the whole project has been an overwhelming success?

**David:**

The Large Blue project is the longest-running and most-successful conservation project on an insect anywhere in the world.

"The Large Blue project is the longest-running and most-successful conservation project on an insect anywhere in the world."

Some people will say that the project is merely single-species conservation but I can assure you that it's not. From as early as 1972, when Jeremy first started working on the Large Blue, he anticipated then that this would be a potential criticism of the work. So he proactively started monitoring the effects of managing for Large Blue on other species. On Dartmoor, where the National Trust managed the site for Large Blues, species like High Brown Fritillary, Pearl-bordered Fritillary, Small Pearl-bordered Fritillary, Dark Green Fritillary and Grayling, just to take the butterflies, have all increased and done better than the national trends. So this shows that, by managing the site for Large Blues, you're recreating a type of management that produces a habitat with complex niches and supports huge biodiversity.

"On Dartmoor, where the National Trust managed the site for Large Blue, species like High Brown Fritillary, Pearl-bordered Fritillary, Small Pearl-bordered Fritillary, Dark Green Fritillary and Grayling, just to take the butterflies, have all increased and done better than the national trend."



**Large Blue egg-laying, Collard Hill**

Photo © Peter Eeles

**Pete:**

So the concrete results are clearly not just about the Large Blue? There are direct benefits to other species thanks to the land management, and there are proven techniques for monitoring - both significant advances?

**David:**

I would like to think so - based on Jeremy's innovative work and implemented by skilled site managers from many partner organisations.

When the Large Blue became extinct, conservation organisations right across the country sat up with a jolt and went "wow - we have to stop this". At the time, Heath Fritillary was down to about 3 colonies. So the same methods that had been used on the Large Blue project have been used on the Heath Fritillary and on the Pearl-bordered Fritillary.

Before you can start conserving something, you've got to understand its lifecycle, its ecological requirements and what drives its populations. Once you have that then you have to work out how you manage sites appropriately. The reason that species such as the Heath Fritillary have recovered so well is because the same approach has been followed.

"Before you can start conserving something, you've got to understand its lifecycle, its ecological requirements and what drives its populations. Once you have that then you have to work out how you manage sites appropriately."

**Pete:**

Can the public assist with such conservation programmes? I assume that transect walking is one area where they can help?

**David:**

We work with local Butterfly Conservation branches, which are really helpful in monitoring quite a few of the sites. The branch members not only do transect walks, but also get out in the winter doing scrub management, and other practical management, on sites. So there's a large amount that can be done. We also work similarly with National Trust volunteers, Wildlife Trust volunteers and other volunteer groups.

One of the huge strengths of the Large Blue project is that it actively involves so many different partners including: CEH, Natural England, Oxford University, Butterfly Conservation, four regions of the National Trust, Somerset Wildlife Trust, Gloucestershire Wildlife Trust, Millfield School, J&F Clark Trust, Paignton Zoo, Network Rail and others. Within this partnership there is a huge skill base at managing sites.

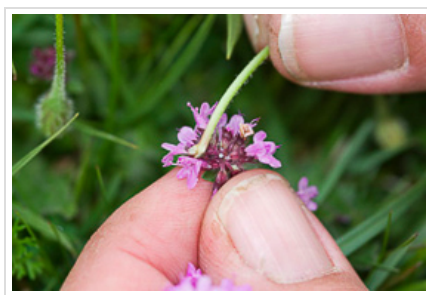
**Pete:**

What do you see as future challenges?

**David:**

Funding is always an issue. I'm aware that some people are concerned that if all the money that's gone into the Large Blue had been spent on other butterflies then we'd be much better off. It's worth pointing out that there's not a pot of money sitting anywhere marked "butterflies", let alone "Large Blue"! About 80% of the project's funding is raised by writing research-grant proposals and this is done by CEH and Oxford University. Our proposals are submitted along with many others who have other scientific interests, but very few are about butterflies. Other funds come from Natural England (under the Species Recovery Programme) and Butterfly Conservation.

In terms of the actual content of the work, there are some huge challenges ahead. For example, we've got the Large Blue well-established in one of its former landscapes and, although we have single colonies in the Cotswolds and Dartmoor and Cornwall, we've yet to get it on a dozen sites in each of those landscapes. That's a lot of work still to do!



**David prising open a Thyme bud to reveal a Large Blue egg, Green Down**

Photo © Peter Eeles

**Pete:**

Presumably the land management itself is always going to be a challenge, as you've already hinted at?

**David:**

People tend to go on Large Blue sites when Large Blues are flying, and very often they'll say that the site isn't being managed properly! To

put things into context - when you're managing for Large Blue, you're primarily managing for ants. So the important time for grazing is in the spring - from February through to May - to keep the turf short and the ground warm, so that it's ideal for the ant, and again from August through to October. If you get a really warm wet spell in May, like we've had this year, you very quickly go from sites that were like billiard tables right up until then, and then suddenly the vegetation shoots up. It's been perfect for the ants, so they're in good health. But if you then put sheep, cattle or ponies onto the site to reduce the amount of turf, the first thing they'd eat along with the grass is the growing tips of thyme, which means that the thyme doesn't flower. So you somehow have to accept that only every now and again will a site be absolutely perfect.

"When you're managing for Large Blue, you're primarily managing for ants."

When working out management prescriptions, you must acknowledge the reality that farmers are trying to earn a living. Sometimes they would like to take their animals off sites a little bit earlier than we would like and on to richer pasture. All site management is about compromise and trying to meet many aims. If you also take into account the vagaries of the weather and rabbit populations, it can get very complicated. You can decide the correct stocking level of cattle on a site only for the rabbit population to crash, requiring an additional 10 cattle. The converse is also true. Not all farmers have spare animals or spare grass to be able to react that quickly.

**Pete:**

You clearly have a lot of admiration for Jeremy Thomas and his pioneering work. Who else do you admire?

**David:**

Jeremy has completely revolutionised butterfly science and conservation both in this country and around the world. It's been an enormous privilege to work with him for thirty years.

A lot of the people I admire will be people that are not well-known - people who manage the sites year in and year out. They have to deal with incredibly difficult problems, such as persuading farmers to do things that are counter-intuitive. I admire all those who go out in the winter and do scrub clearing and check grazing animals, and all of the excellent volunteers that work with them.

In terms of professionals in this field, I've great admiration for Martin Warren and Nigel Bourne at Butterfly Conservation who have turned a small thematic club into an organisation that moulds national conservation policy. David Sheppard from Natural England has been a constant supporter of the Large Blue Project, and remained stoical through some of the early difficult years.

Clive Farrell - who comes from a completely different background - has successfully raised the profile of butterflies to millions of people.



**Neil Hulme (Sussex Butterfly Conservation) and David, at Collard Hill**

Photo © Peter Eeles

**Pete:**

Which butterfly would you save next?

**David:**

I'd save the Duke of Burgundy next. It's a species that's declining incredibly rapidly and nobody really knows why. I'd like to see a detailed 3 or 4 year piece of research on the species to understand its ecology and its requirements so that we can arrest its decline.

**Pete:**

So one thing that's come across strongly in our discussions - conserving our species is much more than simple habitat management - it's really about understanding a species' ecological requirements and then figuring out what measures need to be put in place based on that.

**David:**

One thing I learnt from Jeremy is "monitor, manage, monitor". Monitor what's there, do the management, and then monitor the effect of the management. If you don't do that then you really don't know what impact you're having.

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**Liam Cavin, from Stirling University, and David, at Green Down reserve (Liam was employed by Somerset Wildlife Trust, and the Centre for Ecology and Hydrology, for 2 months this summer, to monitor the phenology of Large Blues on several sites.)**

Photo © Peter Eeles

**Pete:**

I have to ask this, but I think I already know the answer. What's your favourite butterfly?!

**David:**

I guess it has to be the Large Blue, doesn't it?! My next answer would be "my favourite butterfly is whichever one I'm looking at". One of the most spectacular things I ever saw was in Taiwan - seeing the Tree Nymph, *Idea leuconoe*. I remember being taken up to a national park before dawn where we sat waiting for the sun to come up and then, as the sun got to a certain point, hundreds of these butterflies just fell out of the trees with their wings shut until they got about 10 feet above the ground, when they then opened their wings and glided off. Just stunning, absolutely stunning.

"My favourite butterfly is whichever one I'm looking at."

**Pete:**

David - thank you so much for giving me this insight into your work. Today has been the highlight of my butterfly year!

**David:**

My pleasure Pete! I'd like to take the opportunity to say that UK Butterflies is a great website. Well done and thanks for your time.