Adastra Report 2016

REARRANGING DECKCHAIRS ON THE TITANIC

Being a natural pessimist with a complete lack of faith in humanity I've always thought I'd be well qualified to be one of those chaps who marches up and down our city centres with "The End Is Nigh" painted on their sandwich board. With everybody now in agreement that the end of civilisation is only a few years away it seems there is little point hanging around Haywards Heath High Street in my flat cap and sandwich board reminding people of the inevitable apocalypse. So I'll just keep my doom-mongering to the pages of the Adastra 2016 review.

Well don't say I didn't warn you. I spent the winter of 2015/2016 telling everyone that 2016 would be a terrible year for our butterflies. Butterflies hate mild, wet winters and December 2015 was the mildest and wettest December on record. In Lewes Crispin Holloway was monitoring the situation on his back garden weather station. He reported "December 2015 has not only been unusually warm (with night temperatures more typical of June) but it has been on average 5 degrees warmer than the average for December 2014 and 10 degrees warmer than the average for December 2010". It didn't bode well.

As we headed through 2016, it seems my predictions were all coming true. On one hand, I was rather smug to be proved right, yet on the other, I was utterly distraught that there were hardly any butterflies to enjoy. On the Butterfly Conservation Sussex Branch sightings page, our members were also voicing their anguish: “I’m struggling to remember a poorer year for butterflies, aside from the historically dreadful 2012. Many species have suffered a real stinker; others have had it much worse.” “I live in a rural area and the ‘Herald of Spring’ did not happen. I saw one **Peacock** and one **Small Tortoiseshell** in the garden, and the Commas which are normally common in the garden were just not there. As for Small Coppers - a great big zero!”

As 2016 continued butterfly watchers soon realised that we were facing the infamous "washout 2012" all over again. 2012 had been a year we'd all sooner forget. The weather during that summer of was terrible; there were hardly any dry days when you could go out into the countryside and, unsurprisingly, butterfly numbers suffered. Yet we faced a fresh hell in 2016. The summer was warmer than average yet you had the somewhat surreal experience of being out on a hot, sunny day with very few butterflies around. At the end of the summer Butterfly Conservation issued a press release based on emerging data from the summer's Big Butterfly Count survey results.

"Common butterflies saw their numbers collapse over the summer despite the UK experiencing weather that usually helps them to thrive. The majority of butterfly species studied as part of the scheme saw their populations fall with some producing their worst numbers since the Big Butterfly Count scheme began. Widespread species such as the **Gatekeeper**, **Comma** and **Small Copper** experienced their worst summers in the project's history and were down 40%, 46% and 30% respectively compared to last year. The **Small Tortoiseshell** saw a 47% drop in numbers and Peacock slumped by 42% with both species recording their second worst years. Numbers of the colourful **Peacock** have now dropped from an average of 3.6 individuals per count in 2013 to just 0.5 per Count in 2016, a six-fold decrease over three years. These figures were even lower than those experienced during the cold and wet disaster summer of 2012 – the worst year on record for UK butterflies. Butterfly Conservation's Head of Recording, Richard Fox, said: "The drop in butterfly numbers this summer has been a shock and is a bit of a mystery. When we have cold, wet summers as in 2012, we expect butterfly populations to plummet, but that wasn't the case this year."

Weather patterns have an intrinsic influence on the annual fortunes of our butterflies. Each stage of a butterfly's life cycle is dependent on environmental conditions. The success and development of eggs, caterpillars and pupae and the activity of the adult butterflies are all governed by temperature and humidity, factors which also affect the growth of the caterpillar's foodplants. Over thousands of years butterflies have evolved to ensure that the four stages of their life cycle are aligned with the periods of the year when environmental conditions and food availability will maximise their chances of survival. Over the past decade our butterflies have enjoyed and endured some of the hottest, coldest, driest and wettest weather recorded in Britain for decades, or, in some cases, centuries. Extreme weather events such as the record-breaking mild weather of winter 2015/16 had a massive impact on our butterfly populations As climate change promises a higher frequency of extreme weather events such as heatwaves, heavy rainfall and drought, such events are likely to become increasingly influential on butterfly populations which are already suffering the impacts of isolation due to loss and fragmentation of their habitats. Our most recent understanding of this complex relationship was discussed in the scientific paper 'Sensitivity of UK butterflies to local climatic extremes: which life stages are most at risk' published in 2016 by researchers at the University of East Anglia with the involvement of Butterfly Conservation (McDermott Long et al. 2016). This research highlighted that extreme rainfall during a butterfly's pupal stage had a negative impact on the populations of over a quarter of the species surveyed. Unseasonal winter warmth during the overwintering life stage was the most detrimental extreme weather event and affected over half of our British species. Mild winter weather increases activity levels of pathogens making the overwintering immature stages of butterflies increasingly susceptible to diseases. Warm weather can also fool overwintering adults and caterpillars into emerging prematurely. We can speculate that this unplanned winter activity burns valuable conserved energy, increases the risk of predation and leaves them vulnerable if colder weather suddenly returns. At the other end of the scale extreme heat coinciding with a butterfly's adult stage resulted in a positive population change in over a third of the UK species.

2016 would end up being the hottest year recorded on our planet (snatching the title from 2015 which had only just snatched it from 2014). Things are starting to get interesting and the coming years will no doubt present more challenges. Still, while I have been scraping the ice off my windscreen each morning I've been warmed by the knowledge that this more typical winter weather should assist our butterflies in surviving the winter and allow them the opportunity to rebuild their numbers in 2017. Hopefully.

In more positive news it's finally here! (Well, almost.) You will have seen the flyer for The Butterflies of Sussex on your Adastra seat. The book is due to be published by Pisces Publications in 2017 and on the flyer we're offering a special pre-publication offer if you get your orders in before April. The offer is also available through the Pisces website at: www.naturebureaucom.uk/bookshop.

The Butterflies of Sussex project started back in 2008 and, after a 'dress rehearsal' in 2009, we launched the five-year survey in 2010. Looking back, we couldn't have chosen a more exciting period in the history of the butterflies of our county. In a changing environment, both physically and climatically, Sussex's butterflies have had to contend with habitat loss, wet summers and warm winters. Some species have benefitted while other have required increased conservation efforts as their numbers have fallen. On top of this, we've seen unprecedented invasions of **Long-tailed Blues** and the Continental subspecies of the **Swallowtail** from Europe as well as a new species for Sussex - the **Scarce Tortoiseshell** - arriving rather unexpectedly. All this has provided some extremely exciting content and discussion for the upcoming book.

In 2015 we had to compile and verify all the data we had collected; hundreds of thousands of records received from our members. Throughout 2016 we've been analysing the findings and putting together the maps, photos and text for the book. During the winter Neil Hulme was hard at work (including a short stint on his computer on the beach in Fuertaventura) writing up the species accounts. In March I was sat on the balcony of a villa in Andalucia, glass of wine in one hand and Ordnance Survey map of Sussex in the other, writing the 'Where to Watch Butterflies' section. A truly international effort. Meanwhile, Clare Blencowe has been in charge of the datasets and Bob Foreman has been skilfully turning them into maps and charts. Nigel Symington has been keeping a close eye on us, making sure we're all on target.

The first proofs arrived this morning and I have to say, it looks bloody good! The book is stuffed with information on all the species recorded between 2010 and 2014 with the latest distribution maps and original discussions on some of the incredible observations that were reported. The books is illustrated throughout with some incredible photos and also features a guide to the top 60 butterfly sites in the county and top tips on watching butterflies. There are also features on habitat, climate, history of butterfly recording in Sussex and even a story about the time I caught my testicles on a barbed wire fence. It's all in there - in fact there's so much information in the book we've had to increase it from the original 288 pages to 352 pages while keeping the same ridiculously cheap pre-order price of 20 quid. Bargain!

Aside from the barbed wire incident the Sussex Butterfly Atlas Survey has been an enjoyable journey. It has generated a wealth of important data and has inspired many people to get involved in recording butterflies across Sussex. By the end of the five year survey we had received over 200,000 records from over 2,500 butterfly recorders, transect walkers, website posters, square bashers, Orange-tip adults, egg hunters, the Purple Emperor paparazzi and Chris Packham. Through the stories we heard and the tales that were told on our website it was clear that many people had enjoyed being a part of this survey and reconnecting with a spirit of exploration and discovery. As we all travel further into an increasingly dystopian 21st Century, with a drunken man behind the wheel and technology increasingly disconnecting us from the natural world, it's reassuring to know that so many people can still get so much enjoyment from getting out into Sussex and chasing insects. We thank everyone who joined us on this five year adventure.

by Michael Blencowe, Sussex Butterfly Conservation

References:

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