

Fritillaries for the Future Project

Sussex Fritillaries Action Group Newsletter



Neil Hulme
Fritillaries for the Future Project Officer

Butterfly Conservation
RSPB South East Office
1st Floor
Pavilion View
19 New Road
Brighton
BN1 1UF

Work Mobile: 07717 663578
nhulme@butterfly-conservation.org
www.butterfly-conservation.org

Saving butterflies, moths and our environment

Issue 1

Welcome

Welcome to the first issue of the Sussex Fritillaries Action Group newsletter. The Sussex Fritillaries Action Group is a large and inclusive group, designed to keep anyone with an interest in Butterfly Conservation's *Fritillaries for the Future* project up-to-date in terms of project progress, news and events. This newsletter will only be circulated once or twice a year, so I won't be bombarding you with an irritating avalanche of emails.

Membership is drawn from a wide range of (hopefully) interested parties, including statutory bodies, NGOs, local conservation groups, landowners, land managers, foresters, woodland owners (large and small), volunteer butterfly recorders and work party attendees, educators, schools and any individuals who have expressed an interest in the project.

I hope you are happy to be included within this group, but if you wish to opt out of any further correspondence please just email me to let me know.

I would like to think that the vast majority of you already know the basic aims of the *Fritillaries for the Future* project, which is supported by the Heritage Lottery Fund. For any that don't, here's a link to a project summary on the Butterfly Conservation Sussex Branch website www.sussex-butterflies.org.uk/FritillariesForTheFuture.html

I was delighted to be appointed to the post of Project Officer and as many will know, this is far more than just a job to me! My life-long passion for butterflies has meant that I have already spent many years as a volunteer, giving every moment I can to their conservation.

Having previously worked on other endangered species, my focus will be firmly on the Pearl-bordered and Small Pearl-bordered Fritillary over the next three years. Since taking up this position in April I have already met children of primary school age, who clearly have a love and very impressive knowledge of our wildlife. We cannot let them inherit a Sussex without these beautiful butterflies.

I hope you will join with me in doing everything we can to turn the tide and ensure that our fritillaries have a brighter future, as many of you already have.



Neil Hulme, Project Officer

The Audit

When embarking upon a project of this nature, the first step is to gain a clear picture of how many of these butterflies are left, and where.

Sadly, that isn't difficult with the Small Pearl-bordered Fritillary. The last remaining colony in South East England was lost from Butterfly Conservation's Park Corner Heath and Rowland Wood reserves in 2013/2014. Despite extensive searches, none was seen during either the 2014 or 2015 flight seasons.

Before considering a re-introduction programme it is essential to find out *why* a species went extinct. This can sometimes be difficult to determine with certainty, as a combination of factors may be responsible. I believe that this is the case with the Small Pearl-bordered Fritillary. It will come as no surprise that the apocalyptic summer weather of 2012 played a major part. The timing of other factors conspired to make this the 'perfect storm'.

Although bad luck may have played a part in the tragic loss of this species, we cannot rely upon good luck to put it back. A thorough assessment of the species' habitat must first be made, and this must be improved and extended if necessary. Work of this nature is already planned for our reserves and will commence this autumn.

It is important to look at the bigger picture too, as to rebuild a sustainable population requires action on a landscape scale. I am already in discussions with owners and managers of other parts of the Vert Wood complex and have been delighted by the positive response. There appears to be a strong, collective wish to see this area of woodland restored to its former glory, for the benefit of both wildlife and people.



Small Pearl-bordered Fritillary

We still have the Pearl-bordered Fritillary in Sussex, but its future is under real threat. Of the eight remaining colonies in Sussex I believe we have just lost, or are about to lose, three. None were seen on our Park Corner Heath and Rowland Wood reserves this year and I will be very surprised to see this species reappear at Houghton Forest or in a private woodland north of Lewes, where a re-introduction attempt has struggled.

Of the remaining five, only two colonies, those at Rewell Wood and Abbot's Wood are large enough to be considered safe in the longer term.

When the maximum daily count for each of our remaining sites was totalled, a figure only just exceeding one hundred was reached for the 2015 flight season. That came as quite a shock and really brought home the urgency of the situation facing this once widespread species.

A vital part of the *Fritillaries for the Future* project will involve the thorough monitoring of fritillaries on all remaining sites, and those to which they may be re-introduced. Thank you to all who stepped forward to offer their services earlier this year. However, more help will be needed and more than one individual required to adequately cover most of the sites. There will be ample opportunity to get involved in this way during 2016.

Monitoring these populations is important, as the data can be used as a measure of the success in improving or extending the suitable areas of breeding habitat, thereby informing further management decisions.

Of course other factors play a part in determining butterfly numbers from year to year, not least the weather. However, we are looking for positive trends over a number of seasons, together with other indicators, such as the number of sites, or habitat patches within larger sites, which are occupied.

If you would like to become involved in the monitoring of these species please contact me via nhulme@butterfly-conservation.org. Further training in how to go about this will be provided at a number of the events planned for 2016.



Pearl-bordered Fritillary

2015 Events

Within weeks of the project launch I was leading walks to see the Pearl-bordered Fritillary at its West Sussex stronghold in Rewell Wood. I am very grateful to Peter Knight of the Norfolk Estate for allowing us access to private parts of the site, and to Mark Aldridge and his forestry team for ensuring that the needs of the Pearl-bordered Fritillary and many other species are always taken into consideration.

Even on the overcast and unpromising days, all attendees saw the target species. Several of the butterflies posed beautifully for photographers, and one posed beautifully on our youngest visitor's finger. I am sure that Joseph (11) will remember his first encounter with the Pearl-bordered Fritillary and I sometimes wish that I could turn back the clock to re-live that magical period of discovery. The future of our wildlife heritage is very much in the hands of young people, so to see Joseph experience such a close connection with nature was one of the highlights of my butterfly season. I hope that his wish to discover the delights of several more new species this year was granted.



Joseph (11) with Pearl-bordered Fritillary

Mike Mullis led a successful walk to see the Pearl-bordered Fritillary at Abbot's Wood in East Sussex, although only the hardier participants were rewarded for their determination in outstaying the morning rain. By late afternoon we were bathed in sunshine and even found mating pairs and a rare, aberrant form of the butterfly, with unusually dark markings.

Between April and September ten walks went ahead, with a total of 148 attendees. However, this figure does not include two primary school visits to Butterfly Conservation's Park Corner Heath and Rowland Wood reserves. In all, 38 children and teachers were given a tour, with the weather being considerably kinder to one school than the other. I hope that Park Mead Primary will return under clear blue skies next year.

The children from both schools were keen to see one of the Park Corner Heath adders and East Hoathly Primary got lucky ... very lucky! When lifting reptile covers it is normal for adders to disappear, usually quite rapidly, into the undergrowth behind, as clearly stated in my risk assessment. When I lifted the final cover we were delighted to see a slow-worm, which slithered off in the opposite direction.

However, I was very surprised when a large, female adder then nosed under the rear of the cover and emerged into full view. After disappearing momentarily she returned, and as the adder moved towards us the children edged closer for a better look. I was just beginning to think "OK, I might have to grab you", when she finally departed.

The children were buzzing with excitement after this fantastic encounter and some of these budding naturalists were difficult to coax back onto the minibus without a repeat performance. We saw more than a dozen species of butterfly too, with the stars of the show being White Admiral and Silver-washed Fritillary, but somehow I think the adder won the day.



East Hoathly Primary celebrating butterflies, and adders!

Following the early season walks at Rewell Wood, a number of training sessions were held. These included techniques for monitoring Pearl-bordered Fritillary numbers (not easy when they are flying fast through a coppice coup), and assessing the suitability and quality of the butterfly's habitat. A total of 56 people attended these sessions, but of course only a proportion of these will actively pursue the opportunity to become involved in this way, for a variety of reasons.

Participants in future training events will receive a Recorder's Pack, which I will be completing this autumn. This will provide a permanent record of the methods involved, which will hopefully encourage more people to take up the challenge.

Habitat assessment might sound like a daunting prospect, but is really quite straightforward once the basic aims are explained. The image below shows how the much-beloved quadrat (provided for volunteers) can be used to assess the quality of Pearl-bordered Fritillary habitat, by estimating the approximate percentage coverage of bare ground, brown litter (dead leaves and woody material), green matter (live vegetation) and the number of violets (the caterpillar's foodplant) present.



Using a quadrat to assess habitat quality

I hope that many more will come along to the events planned for 2016, which will as always be advertised on the Butterfly Conservation Sussex Branch website Events Page www.sussex-butterflies.org.uk/events.html and highlighted with the fritillary symbol.



Site Visits

Visiting woodland sites to assess their condition or potential for the Pearl-bordered and/or Small Pearl-bordered Fritillary is one of the fundamental steps in achieving the aims of the *Fritillaries for the Future* project. Since April I have visited a total of 30 woods (or parts of woods under different ownership) and produced detailed reports on their suitability for these species. In many cases these reports have contained advice on their management.

I would like to thank all of the woodland owners and managers who have allowed me access to their woods, and who have been so helpful in assisting with this work. Some of these sites have been identified by, and access permissions gained through, organisations with which Butterfly Conservation has long worked in partnership. These include the South Downs National Park Authority, Sussex Wildlife Trust, Forestry Commission and, more recently, the Woodland Trust. Also, some individuals, such as Stewart Boyle, have kindly acted as facilitators.

These woods fall into one of four categories:

- 1) Woods where the Pearl-bordered Fritillary is still present, where advice might be given to improve or extend its habitat.
- 2) Woods with the potential to support the Pearl-bordered Fritillary, where advice might be given to improve or extend its habitat, in the hope that this species might colonise naturally from a site nearby.
- 3) Woods with the potential to support either the Pearl-bordered or Small Pearl-bordered Fritillary, where advice might be given to improve or extend their habitat, with a view to possibly re-introducing these species through the release of captive-bred butterflies.

4) Woods with little or no potential to support either the Pearl-bordered or Small Pearl-bordered Fritillary, but where general advice might be given to improve habitat for the benefit of other butterfly species and wildlife.

Some visits have as yet only been made for reconnaissance purposes and, with so many sites to look at in detail, it might be a while before I can return for a more thorough survey.

Many more visits will be made over the next couple of years, as experience has already shown that there are some hidden gems out there. Whereas so many of our woods are undermanaged, neglected and dark, I have come across some immaculately kept and very beautiful examples, which are a credit to their owners.

Image Stewart Boyle



Meeting with Woodland Trust and small woodland owners

Captive Breeding Programme and Re-introductions

In addition to the Sussex Fritillaries Action Group, a much smaller group is being formed, charged with advising on the tricky job of re-introducing these species to suitable woods. The Sussex Fritillaries Re-introductions Group comprises members from Natural England, Forestry Commission, RSPB, Butterfly Conservation and an independent consultant.

Re-introductions require the captive breeding of these species, in sufficient quantities to give the released butterflies a fighting chance of becoming established in their new home. Current guidelines, based on sound research, suggest that a minimum of 60 adults should be released at each site.

If multiple re-introductions are to take place simultaneously, and the inevitable losses of eggs, caterpillars and pupae are taken into consideration, it soon becomes evident that captive breeding must be undertaken on a large scale.

Rearing large numbers of these fritillaries, which hibernate as part-grown caterpillars, appears to be as much an art as a science. I am therefore grateful for the very considerable expertise of Mike Mullis. Mike has done a magnificent job in getting the captive breeding programme off to a flying start. I would also like to thank two volunteers, Theresa Lux and Gary Norman, and Stuart Sutton of the Forestry Commission, for assisting with the care of these precious caterpillars.

Encouraging captive butterflies to mate is not as easy as it might seem; after all, in the natural environment they require no encouragement at all! Mike's meticulously prepared breeding cages go a long way towards making them feel at home, with a reconstructed woodland floor providing plentiful violets and regularly replenished nectar sources.



Captive breeding cages

Mike is constantly busy, moving the cages outside into warm sunshine, then back under cover if there is a risk of overheating, or when the weather turns foul. The cages are often treated to a fine spray of water, to keep conditions humid.

I've witnessed a couple of successful pairings, which are always a cause for celebration all round. Once the butterflies have done their duty, they are released back onto their original site, to enjoy their golden years in more privacy.

Due to Mike's expertise we have a very encouraging number (several hundred) of both Pearl-bordered and Small Pearl-bordered Fritillary larvae currently in hibernation. Mortality rates can be high over the winter period, so only time will tell how many butterflies are likely to emerge unscathed from the precarious transition from egg to adult. One thing I do know is that they could not be in better hands.

I'm sure that some of you will be keen to know where these butterflies will end up. Choosing the right site for a re-introduction is also a complex issue. The long history of re-introduction attempts has seen many failures. Butterflies are fickle creatures, especially the 'habitat specialists'; nearly right is not good enough. This is why the vast majority of unsanctioned and unplanned attempts by well-meaning but misguided individuals are doomed to failure.

The reasons for previous extinction on a site must be known (or at least the balance of probability), and rectified. The habitat requirements of the species must be fully understood, and highly suitable habitat must be prepared. A sustainable, long term management plan

must be in place, and there must be the resources available to monitor the re-introduced population.



Small Pearl-bordered Fritillaries at work

Butterfly Conservation is an organisation which bases its policies and decisions on sound science, so any re-introduction attempt must be preceded by an application to our Director of Conservation and Conservation Committee, who will look in detail at the proposals before approving further action. Permission must also be sought from landowners and, if the wood is a Site of Special Scientific Interest (SSSI), from Natural England.

I have now identified potential re-introduction sites for both the Pearl-bordered and Small Pearl-bordered Fritillary, for spring 2016 and spring 2017. As yet, nothing is cast in stone, but I will keep you informed as this exciting aspect of the project develops.

Media Coverage

I am grateful to Malcolm Shaw of ITV Meridian for his highly professional and sensitive coverage of the *Fritillaries for the Future* project earlier this year. Stuart Sutton (Forestry Commission) and I were delighted when the Pearl-bordered Fritillaries of Abbot's Wood performed for the cameras, despite borderline weather conditions on the day. Online footage can still be viewed at www.itv.com/news/meridian/update/2015-05-21/can-conservationists-save-dwindling-population-of-once-widespread-woodland-butterfly/

The Primary Times magazine also provided generous space to cover the project. In response to this article I was contacted by a private woodland owner whose family has been performing wildlife-friendly management for some years now. My brief, initial visit uncovered one of those hidden gems I spoke of. A wood in this condition would almost certainly have been home to the Pearl-bordered Fritillary in the 1980s, before its rapid decline and fragmentation of the Sussex population.

Fundraising

The *Fritillaries for the Future* project would not have been possible without the generous support of the Heritage Lottery Fund.

A major donation was also received from the Ernest Kleinwort Charitable Trust, which supports charities working in the fields of Wildlife and Environmental Conservation, charities operating in the county of Sussex and charities working in the field of Family Planning (UK and International).

Further financial support has kindly been provided by the Sussex Branch of Butterfly Conservation.

I would also like to thank all of those who responded to my appeal letter earlier in the year. Together with the TEXT appeal (Text FRIT15 £5 to 70070 to donate £5) this has raised more than £5000 for the project.

I am sure that this fantastic level of support will go a long way towards helping the threatened fritillaries of Sussex.

Winter Work Parties

Very little of the vital conservation work performed by Butterfly Conservation and its partners would be possible without the huge contribution made by volunteers.

The work party season is fast approaching and a number of events are being planned, specifically to help the Pearl-bordered and Small Pearl-bordered Fritillaries. Some of these will be run alongside our conservation partners, including the South Downs National Park Authority, Murray Downland Trust and Graffham Down Trust. Others will involve targeted work on our reserves at East Hoathly, to pave the way for planned re-introductions.

Tasks will be available to suit all levels of fitness, although a degree of physical exertion is unsurprisingly involved! The attendance of work parties is a great way to keep fit and chase away the winter blues, while making a real difference to the fortunes of our butterflies.

Please keep an eye open for announcements made on the Butterfly Conservation Sussex Branch website, highlighted with the fritillary symbol.



Illustrated Talks

Over the next few weeks I will complete an illustrated PowerPoint talk on the *Fritillaries for the Future* project. As soon as this is available I will send out an email announcement, inviting you to book a presentation. An audience of greater than ten (no upper limit) would be preferred.

Finally, for those who are less familiar with these species, here is a short introduction to the Pearl-bordered Fritillary and its life cycle.

The April Fritillary

The Pearl-bordered Fritillary is one of many species which seriously declined during the second half of the 20th Century. The 'Woodman's Friend', as it was once affectionately known, was common in the days when many woodlands were actively worked for coppice products and charcoal. The butterfly would follow the woodman, as he moved around creating open areas in which violets, particularly the Common Dog-violet (the caterpillar's foodplant), would flourish, until the canopy began to close again.

The Pearl-bordered Fritillary is one of the first butterfly species to emerge each year and was also once known as the 'April Fritillary', but this was before the Gregorian calendar was adopted (11 day shift), pushing its usual first appearance date back into early May. However, as climate change has encouraged an earlier emergence, it once again lives up to its old name, now appearing from late April onwards.

The sight of numerous, male Pearl-bordered Fritillaries swooping low over flower-rich coppice coups, rides and glades is one of the most uplifting spectacles of a British spring. Before the hunt for females begins, they will spend an hour or more taking on fuel, in the form of nectar from carpets of purplish-blue Bugle flowers. Other species, including Dandelion, are also visited, with two or three males sometimes jostling for position on a single flower-head.



Pearl-bordered Fritillaries on Dandelion

The males have beautiful, large, blue eyes and hunt down freshly emerged females by sight. They are attracted to any orange-brown objects and on several occasions they have investigated the orange cap of the soft drink bottle I have been carrying.

In the late afternoon and early evening, after a busy day gliding and twisting between the coppice stools, the butterflies will again congregate on trackside patches of Bugle, to

replenish their energy reserves. This is the best time for photographers to capture the rare beauty of the Pearl-bordered Fritillary. The pursuit of active butterflies through the coppice coups is discouraged, as you may disturb breeding Nightjars.

Once mated, the female butterfly will hide away for a couple of days while her eggs ripen. She will then slowly flutter over the ground until she finds some suitably fresh violet plants, laying a single egg either on the underside of a leaf, or on vegetation or wood litter close-by. The eggs hatch after about two weeks.

The velvety black, spiny caterpillar moults its skin three times during the summer. Each time it sheds the old skin the caterpillar's soft body will expand quickly. Soon after the third moult, usually in July, it will enter hibernation, hidden within a curled, dried leaf.

Following a winter of inactivity the caterpillars wake in early March. The air temperature may be low at this time of year, but given a little morning sunshine it is much warmer amongst the leaf and wood litter at ground level.

After the final moult the protective spines of the near full-grown larvae have developed a beautiful yellow colour, tipped with black. Through diligent searching the caterpillars can sometimes be found sunbathing on dried leaves or wood chips, before their body temperature is raised sufficiently for them to become mobile and capable of digesting a meal of violet leaves.



Full-grown caterpillar

After reaching full size they will then stop feeding and form a superbly camouflaged chrysalis, suspended from low vegetation. Over a period of about three weeks the miracle of metamorphosis takes place inside.

During the later part of that month the 'April Fritillary' will emerge and expand its tightly furled wings, before once more starting its fascinating life cycle.