

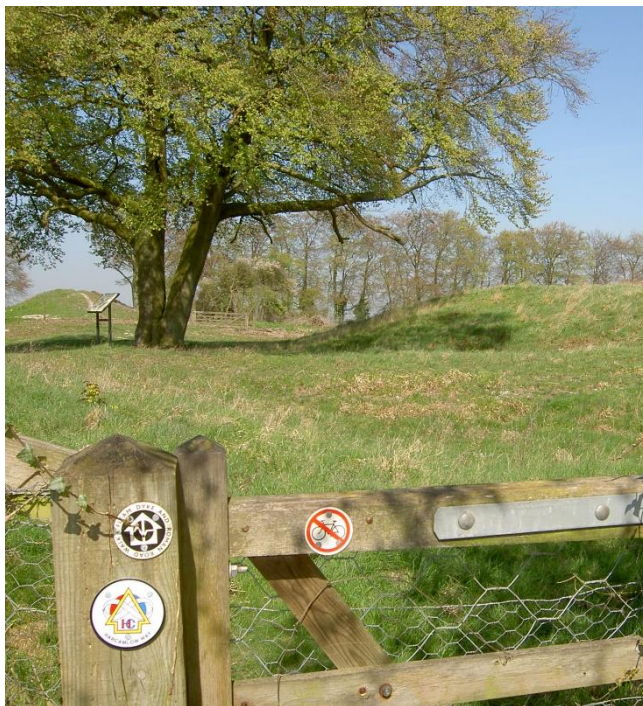


Friends of the Roman Road and Fleam Dyke March 2022 Newsletter 60

We had to cancel the AGMs of 2020 and 2021. We plan to have our **next AGM** from **3-5 pm on 7 May 2022** at the Townley Memorial Hall, Fulbourn, with guest speaker Ros Aveling whose title is 'Mind the gap - the challenge of keeping Cambridge green'. Ros was Deputy Chief Executive at Fauna & Flora International until she retired, she has long experience in conservation especially around Cambridge. Something else to look forward to - Rosemarie and Alan Parks are planning to host an **Open Garden** on **Sunday 12th June 2022** at Freshfield, Cardinal's Green, Horseheath.

Conservation work continues

As you probably know we were setup in 2001 to conserve and enhance the flora and fauna of two sites of special scientific interest (SSSIs). Our conservation efforts have continued almost unaffected by covid since they are out-of-doors and done by few people. In general, we are trying to maintain or increase the population of plants and animals associated with grassland, which is a rare community in the area because most of the land is used for crop production. There is very little grazing land and that is usually on sown or 'improved' (= fertilized) grassland both of which have low species diversity. The natural vegetation throughout the area is woodland so we are continually having to slow down or set back the arrival of shrubs and trees. Cutting shrubs and trees once they are well established does not result in recovery of species-rich grassland because few of the grassland species have long-lived seeds in the soils and they don't spread easily into newly cleared areas. So what comes up, in the areas cleared of scrub, are garden weeds, Brambles and Clematis, none of which are of conservation interest on the RR & FD.



Mutlow Hill in summer 2019 (left) and February 2022; the 2022 photo shows regrowth of Brambles and Clematis

The Roman Road and Fleam Dyke are both species rich: 245 plant species are found in both sites, 125 only on the RR and 68 only on FD (lists from David Barden, on the FRRFD website). The sites pose different management problems because they differ in their topography and soils. The RR is derived from a raised surface (agger) of gravel (in most parts), usually with shallow ditches on both sides, in a few places there are fragments of chalk at the soil surface. The FD on the other hand has large areas with chalk fragments near the soil surface and thus it has patches of chalk grassland and their insects; in the FD ditch the soils are deeper and more fertile. The FD can be difficult to work on because its steep slopes are slippery when wet.

Management of the RR and FD are importantly different. Originally, in the grassland, grazing kept out the shrubs and tree seedlings and the animals removed much of the grass and herbs. The grazing animals tended to 'dung' in a few areas, which resulted in small patches of enriched soil, but the majority of the area was kept at low fertility because grazing removed plants and their nutrients. The animals themselves were eventually removed reinforcing the low soil fertility. This low fertility allowed many rare species to thrive; increasing fertility would allow more vigorous species to outcompete the slow-growing (often uncommon) species. [fertilization of species-rich grassland by farmers results in the similar loss of rare species]. In the absence of animals, conservation of the site requires that the vegetation be cut and the 'arisings' (the cut material) removed, if it is left in situ it will increase soil fertility. On the Fleam Dyke this removal is relatively easy because it can be raked down into the ditch and left to rot or be burned – the soil in the bottom of the ditch is already much more fertile than that on the slopes and top of FD because material has moved downslope for centuries resulting in deeper more fertile soil. A result of this fertility in the bottom of the FD ditch is that nutrient demanding plants such as elderberry, burdock and nettles are common – a flora of less conservation interest; though Nettles and Burdock are both important food sources for some butterflies. On the RR removal of cut material is more difficult because there is no deep ditch with nutrient-rich soil, so often arisings are completely removed from the site (which is expensive), or are burned on metal sheets, or are transferred to sites under tall trees and shrubs.

The conservation done over the last two years 2020-2022

On the Roman Road there have been several conservation actions.

- 1) Between Worsted Lodge and Deadman Hill, and on the short, narrow, piece of species rich grassland opposite the golf course hedge, the 'grass' has been cut and the arising removed in the autumns of 2020 and 2021 (and for 9 years previously), paid for by the Natural England 'conservation enhancement scheme'.
- 2) The SW verge for about 100 m from Mount Farm back toward Cambridge has been cut and the more robust plants (like Mugwort) dug out for the last five years by Hunts Wildlife organised by Julia Napier and paid for by the Friends; which now has a more interesting flora.
- 3) The verges from about 100 - 800 m NW of Mount Farm have for at least 20 years been cut and shrubs killed, by the mid-week volunteers of the Wildlife Trust organised by Iain Webb.
- 4) Hemlock along the RR has been continuously removed by Hunts Wildlife and Richard Fowling.

On the Fleam Dyke there have also been several conservation actions

- 5) Parts of the area from Mutlow Hill to the railway cutting, which have patches of species-rich chalk grassland, have been cut and the arising removed each winter, by Hunts Wildlife organised by Julia Napier and partly paid for by the Friends.

- 6) An area immediately SE of the A11 has had the shrubs cut and the arising burned in the adjacent ditch in January and February 2022. This was done by Hunts Wildlife and paid for by a “COVID Recovery related Community Chest Grant” from South Cambs; Mike Foley, Richard Fowling and volunteers from the FRRFD and the Wildlife Trust burned the arisings.



Fleam Dyke looking East from near the A11 in May 2021 (left) and February 2022, showing scrub clearance and an ash pile from burning the arisings.

Butterflies on Fleam Dyke – the Effect of Extensive Scrub Clearance at the NW end.

In the autumns of 2017 and 2018, scrub was cleared and seeds of the grass Upright Brome scattered, on a large section of Fleam Dyke from near the Fulbourn end to Mutlow Hill. The clearance was financed by Historic England. The original plan was for it to be sheep grazed, which would eventually result in the restoration of a species-poor chalk grassland. However, few sheep were put on the site and only for a short time because some shrubs were, as planned, not removed (chalk grassland sites often have patches of scrub). A result is that extensive areas that had scrub removed have been colonised by Brambles, Clematis, Roses and some other woody species. The effects of this scrub cutting and ‘scrubby’ regeneration on butterfly populations has been the subject of some discussion.

To examine this in detail, butterfly data have been extracted from records made by Roger Lemon and other volunteer recorders for two areas. The first area was a large section between the pumping station and the gate before Mutlow Hill; before the scrub clearance there were some areas of chalk grassland between the pumping station and Mutlow Hill, which supported a healthy population of Chalkhill Blues but a larger area within this section was covered by scrub, which has now been cleared. The second section was between the A11 and Bedford Gap, which was subjected to only a small amount of scrub clearance in the study period; in the latter area there was a lot of chalk grassland with small but significant amounts of scrub.

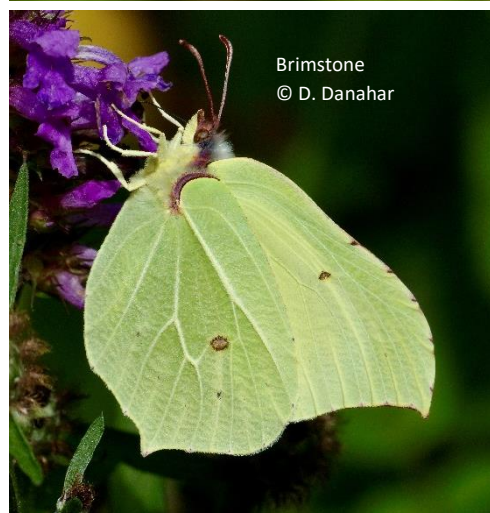
Populations of all butterfly species vary from year to year, mainly as a result of weather conditions, so in making a before and after comparison, data were taken from the three years before the clearance (2015, 2016 and 2017) and three years after clearance (2019, 2020 and 2021). Data from 2018, which fell between the two stages of clearance, were not included.

It has not been possible to examine the results statistically but total butterfly numbers showed increases in both areas under consideration, by 12% in the cleared NW section and 21% in the SE section. Therefore, it appears that the clearance did not have a dramatic effect on overall butterfly numbers. However, some individual species gave interesting results.

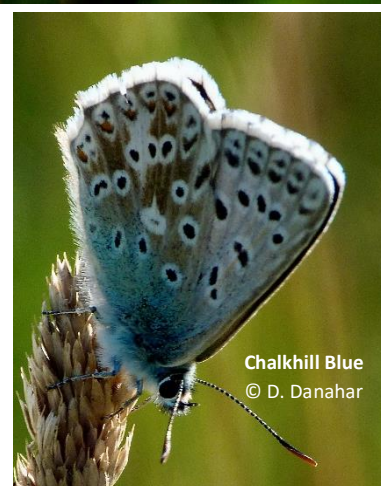
The most interesting is an apparent dramatic impact on the Green Hairstreak. Before the clearance, this species was virtually confined to the NW part of the Dyke and very few were recorded SE of the A11. Following the clearance, numbers in the NW section showed a 63% reduction but in the SE section, the number of records increased from one to thirty. It is encouraging that the loss of suitable habitat in one location appears to have possibly resulted in a movement of the population to a more suitable area for this species.



Other species with a requirement or preference for habitat with some tree or scrub cover, particularly the Brimstone, Holly Blue, Speckled Wood and Ringlet have produced lower numbers in the cleared area but the Speckled Wood is also down in the section SE of the A11. Most other species have not shown significant changes in numbers in the cleared area but one, the Small Heath has shown an increase compared with a small reduction SE of the A11.



It may be worth noting that our major habitat specialist species, The Chalkhill Blue, which is present in large numbers on the chalk grassland, showed good increases in both areas under discussion and the number of Marbled Whites has increased dramatically, confirming that from very low numbers prior to 2018, this species has become well established in the last three years. This probably reflects a geographical spread, as numbers have also increased on the Roman Road.



In conclusion, the results are complex but indicate that with the possible exception of the Green Hairstreak, the scrub clearance has not had a dramatic impact on butterfly numbers.

Another thing of interest. An anonymous donor has given the Friends £ 3,000 towards the £4,000 cost of three new information boards for the Fleam Dyke – to replace the current boards that show serious signs of their age! We are very grateful for this substantial donation.

Written by Edmund Tanner and Roger Lemon with help from Peter Grubb and Julia Napier; 9 March 2022