

'Young Explorer'

Assessing the biodiversity management of LNR calcareous grassland: Darland Banks in Kent.

Sometimes the best place to explore is nearby.

Describe the project

Conducted in summer 2019 as A-Level Geography coursework which achieved 56/60 marks. I live nearby so have had some wonderful experiences: an adder, man orchids (largest population in Britain!), swooping bats and once counting ~60 glow-worms.



Man Orchids. 30/05/18



Adder. 11/05/18

Darland is managed by Kent Wildlife Trust and a team of cattle. I used 6 transects of 10 quadrats each, recording the plant species, slope incline, invertebrate species in 5 minutes, maximum sward height, soil texture, pH, and vegetation cover. The species data was used to find Simpson's Diversity Index (SDI). I also conducted butterfly counts (for *Big Butterfly Count*, too), a tree survey and (unfortunate!) moth trap. As scrub encroachment threatens plagioclimax chalk grassland, I compared biodiversity in grazed vs non-grazed areas – SDI of the former was 0.73, the latter 0.34. I was delighted by some fabulous species, such as what I'm convinced was an Adonis blue.

What impact could your project make?

With correct management, small chalk grasslands could be created in roadside verges, private land and parks on calcareous soils to form 'nature stepping stones' to aid oft-localised populations, especially declining invertebrates to help avoid the impending insect crisis. Although grazing animals are the best for minimising scrub encroachment, machinery can be used if implemented sensitively.

The Darland Banks illustrates how small nature reserves are still extremely valuable. The area is flanked by housing, roads and agriculture, it's only 45 hectares, supports dog-walkers, and yet it has the largest population of man orchids, for example. It sparks hope for urban biodiversity, as the reserve is located in the dense Medway Towns in Kent. It's been invaluable for my mental health too as a quiet refuge– imagine if all urban communities had such access? Cattle in calcareous grasslands can also form symbiotic relationships with local farmers, making such livestock more sustainable.

Where do you want to take the project in the future?

Calcareous grasslands are an undervalued ecosystem; in winter they look like 'scrubby wasteland', without the majesty of a forest! Yet, they have been called the "European equivalent of tropical rainforest" (Professor David Bellamy). I would love to compare biodiversity with other UK ecosystems like coppiced woodland etc. – which is richer? Do they interact? I focussed on Darland, so I'd be interested to investigate other chalk grasslands. Similarly, I didn't have the scope to even begin to look at mammals/ birds.

Moths!! I was unabashedly eager to construct a moth trap so I was soul-crushed to be greeted with *one harvestman spider*, after multiple attempts. There were more moths in the kitchen.

I would be interested to explore human geography. I could easily produce a vivid map of emotional cartography here and as we are beginning to understand the worth of nature on the psyche, this could be an interesting direction: grasslands in comparison with *shinrin-yoku*.