

Betchworth Habitat-Type Report #1: Road Verge Corridors

Notes to accompany Road Verge Corridors Movie watch on YouTube

<https://www.youtube.com/watch?v=buKJoQeN4GA>

Introduction

The parish of Betchworth has nearly 17km of roads (Figure 1) most of which have at least one and often two natural verges populated by plants within which numerous animals live. It also has one 1.56km long railway line linking Reigate & Dorking.

With hardly any people walking by, road and rail verges are relatively undisturbed and the soil is often nutrient-poor. These conditions are perfect for wild plants to thrive. Road and rail verges are particularly important during the spring and summer when a huge range of wildflowers and grasses provide a rich habitat for wildlife. The wildflowers attract pollinators such as bees, flies, moths and flower beetles. Other insects and spiders soon follow, as well as snails, small mammals, reptiles, amphibians and birds.

Betchworth Road Verge Corridors Movie

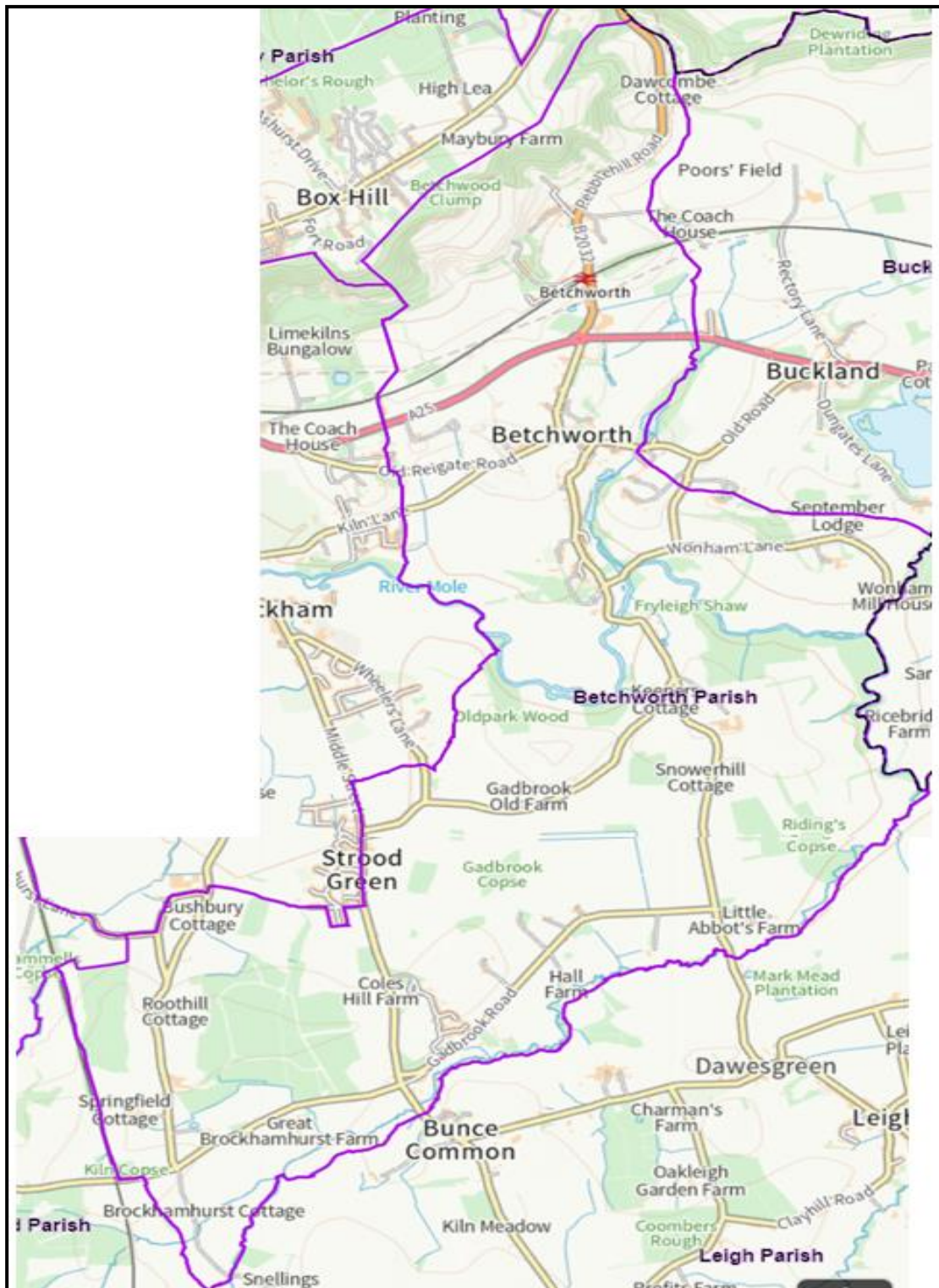
<https://www.youtube.com/watch?v=buKJoQeN4GA> illustrates the main habitat-types displayed in the road verges of Betchworth parish and shows some of the flowers and other plants that can be found in them during April when the movie was made.

Corridors are necessary for a healthy environment in a fragmented landscape

Road and rail verges are fantastic examples of plant and wildlife corridors[1]. These are linear features that provide a safe habitat that connects different parts of the landscape. Such corridors provide opportunities for plants and animals to move from place to place. Wildlife corridors include hedgerows, tree lines, ditches, streams and rivers, gardens and transportation structures like road and rail verges. As Britain's landscape becomes more fragmented these corridors are essential for protecting wildlife, promoting movement and preventing populations from becoming isolated. They encourage genetic diversity by allowing plants and animals to mix. Without corridors, populations become isolated. This makes them weaker genetically and more vulnerable to any sudden changes in their environment. Many of these road-based corridors have been established for hundreds of years. Many road verges in open countryside are associated with hedges that form their own habitat and with ditches carrying water. Road verges often support a greater diversity and abundance of plant species than various adjacent habitat types—possibly because they receive more (locally produced or dispersed) seeds. Verges also have a similar diversity and greater abundance of insects than comparable habitats such as grasslands and provide important nesting and foraging habitats for birds [2].

In the parish of Betchworth the pattern of roads provide one north-south corridor that connects Betchworth to the northern parish of Box Hill and the southern parish of Leigh and five east-west corridors which connect Betchworth to the parish of Buckland in the east and Brockham in the west. The N-S corridor of vegetated verges is interrupted as the road passes through Betchworth and verges are replaced by walls, tarmac and pavement.

Figure 1 Map of the roads & railway line in the parish of Betchworth outlined in purple



The geology influences the soils which influence the plants that grow in them. Most of the parish has free draining slightly acid loamy soil [3]. The soil overlying the chalk in the Betchworth Hills in the north of the parish, is "free draining, slightly acid but base-rich (calcareous)." Further to the south the soils are likely to be more acidic on the Upper Greensand, Gault Clay, Lower Greensand and alluvium of the Mole Valley in which Betchworth village is located.

Road verges support two main habitat-types A) Deep shaded, tree lined verges in road cuts with a flora that is typical of woodlands typically these verges have a lot of ground cover ivy. The second common environment B) is characterised by well lit, grassy verges, open to fields or sometimes backed by hedges with a flora that is more meadow like. There is also a transitional habitat C) where trees provide some shade but allow sufficient light through to ground level to enable grasses and flowers to grow (Figure 2).

Figure 2 Three habitat-types recognised in the road verges of Betchworth



Another factor influencing the plant life in the verges is the aspect. On the east west road corridors south facing slopes are sunnier and warmer than the north facing slopes especially where the roads have steep banks (Figure 3).

Figure 3 East-west road showing north face in deep shade and south face bathed in light.



In the open countryside in the southern part of the parish there is a consistent bank, ditch and hedge structure (Figure 4) to road verges. All ditches periodically contain water but some contain water most of the time. Such a structure creates three different habitats, suggesting that these corridors might be home to the greatest diversity of plants and animals.

Figure 4 Bank-ditch-hedge structures. The ditch on the right contains water most of the time.



Road verge flora

In the well lit grassy verges the flora is similar to that which would be found in meadows (Figure 5). There are many species of grasses, broad leaved plants like nettles, hogweed, sticky willy and wildflowers - edible garlic mustard, cow parsley, dandelion, are ubiquitous with borage, red campion, buttercup, cuckoo flower, celendine, cowslips, bluebell, forget-me-nots less common accompaniments.

Figure 5 Typical flora of well-lit grassy verges – **A** blue flowering green alkanet,, nettle, cow parsley, red campion, grasses and hogweed **B** grasses, nettle and dandelion **C** garlic mustard **D** grasses, nettle and cow parsley



In the shady, tree lined verges the flora is similar to that found in woodland areas – typically a ground cover of ivy, ground elder, nettles, ferns such as the lady fern and asplenium scolopendrium, and horse parsley. These are sometimes accompanied by woodland wildflowers like wood anemone, bluebells, and where there is sufficient light, garlic mustard, cow parsley, dandelion and forget-me-nots.

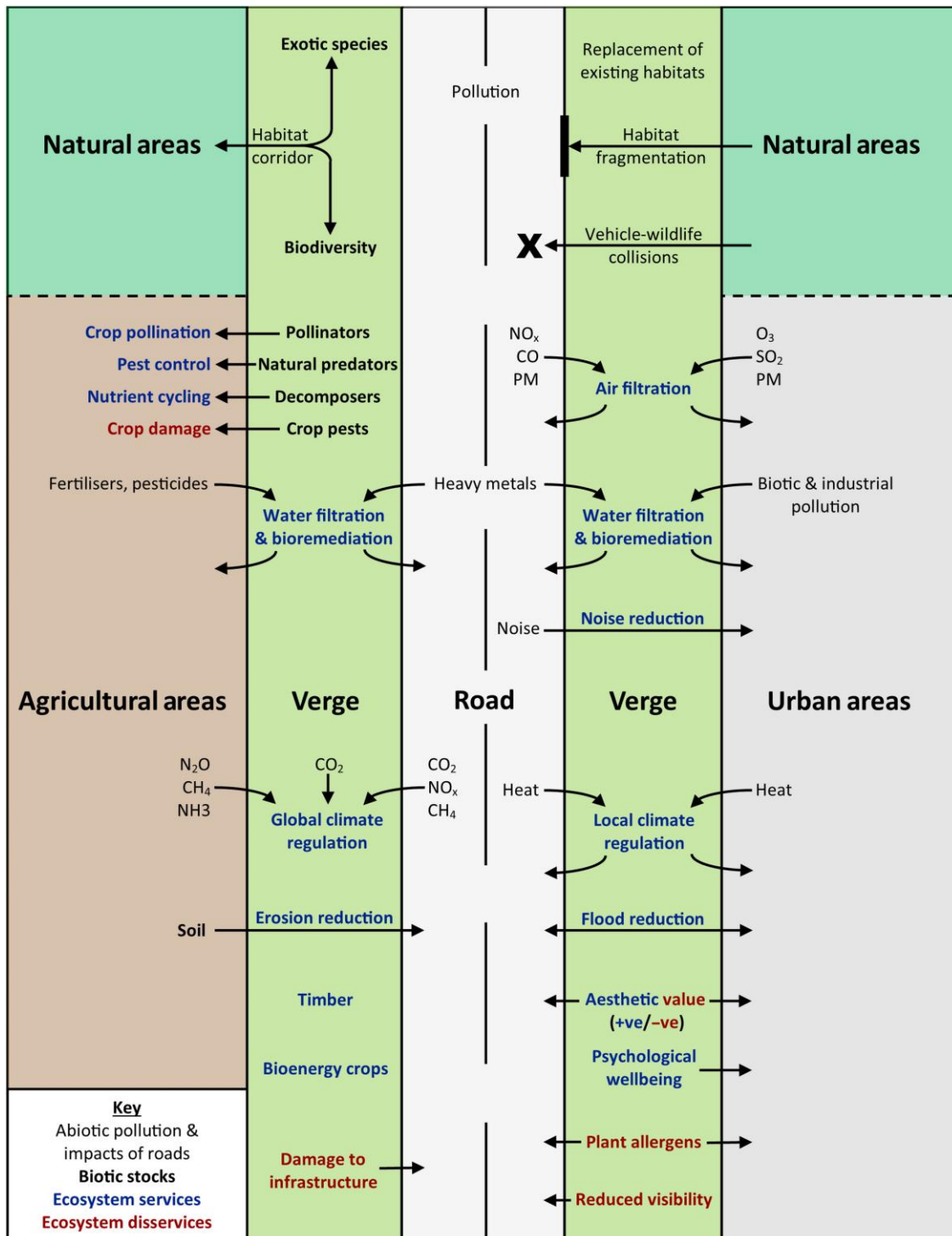
Figure 6 Typical flora of shaded wooded verges **A** – dense ground cover of ivy with minor lady fern and asplenium scolopendrium. **B** – lady fern, bluebell, ivy and grasses **C** ground elder, ferns, nettle, bramble, horse parsley, blue flowers?? **D** ivy, ferns, ground elder, cow parsley



Ecological impacts

The ecological impacts of roads and the ecosystem services (ES) and disservices that may be provided by road verges are summarised in Figure 7 [2]. Road verge ES might address some of the environmental problems caused by roads (e.g. pollution) and provide further benefits to surrounding landscapes. Each broad landscape type (agricultural, urban and natural areas) demands a different set of ES, which should be the target of management to enhance ES provision by road verges.

Figure 7 Summary of ecological impacts (positive and adverse effects) of road verges showing variations according to their context [2]



Sources

- 1 What is a wildlife corridor? COUNTRYFILE Available at:
<https://www.countryfile.com/wildlife/wildlife-stories/guide-to-britains-road-verges-history-why-they-are-important-and-threats/>
- 2 Phillips, BB, Bullock, JM, Osborne, JL, Gaston, KJ. Ecosystem service provision by road verges. J Appl Ecol. 2020; 57: 488– 501. Available at:
<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.13556>
- 3 <https://en.wikipedia.org/wiki/Betchworth>