Plant Diversity Maps for the Roadside Verges in Levens Parish

A survey was carried out in 2011 into the diversity of plant species growing in the Levens verges, with a view to mapping diversity.

The verges were divided up into relatively homogeneous sections and lists of species, as complete as possible, were recorded for each section. This involved repeated examination of each section throughout the year. This document presents the data obtained, presented in the form of summary maps.

Additional separate PDF files describe:

1. Details of the sections of roadside verge examined, including OS grid references obtained using a GPS.
2. A list of plant species present in each section.
3. The species diversity, in descending order, of the various roadside verge sections in Levens. The diversity for each section is measured simply by dividing the number of species present by the linear length of road examined.

Three maps are presented below.

The first (Map 1) illustrates the measured differences in plant species diversity between the different verges within the Parish. It is based on actual data and indicates which verges are of the highest conservation status. These are the verges that require the most sensitive management to maintain their diversity.

The second and third maps require a little interpretation. They use the known ecological requirements of the species growing in each verge sector to predict the relative wetness and fertility of the underlying soil in which they are growing. This involves the calculation of Ellenberg wetness and Ellenberg fertility scores, standard ecological measurements. The wetness (Map 2) and fertility maps (Map 3) illustrate where, on the basis of the plants growing there, we would expect to find variation in soil wetness and fertility. These predictions can be compared with our prior knowledge of these sites.

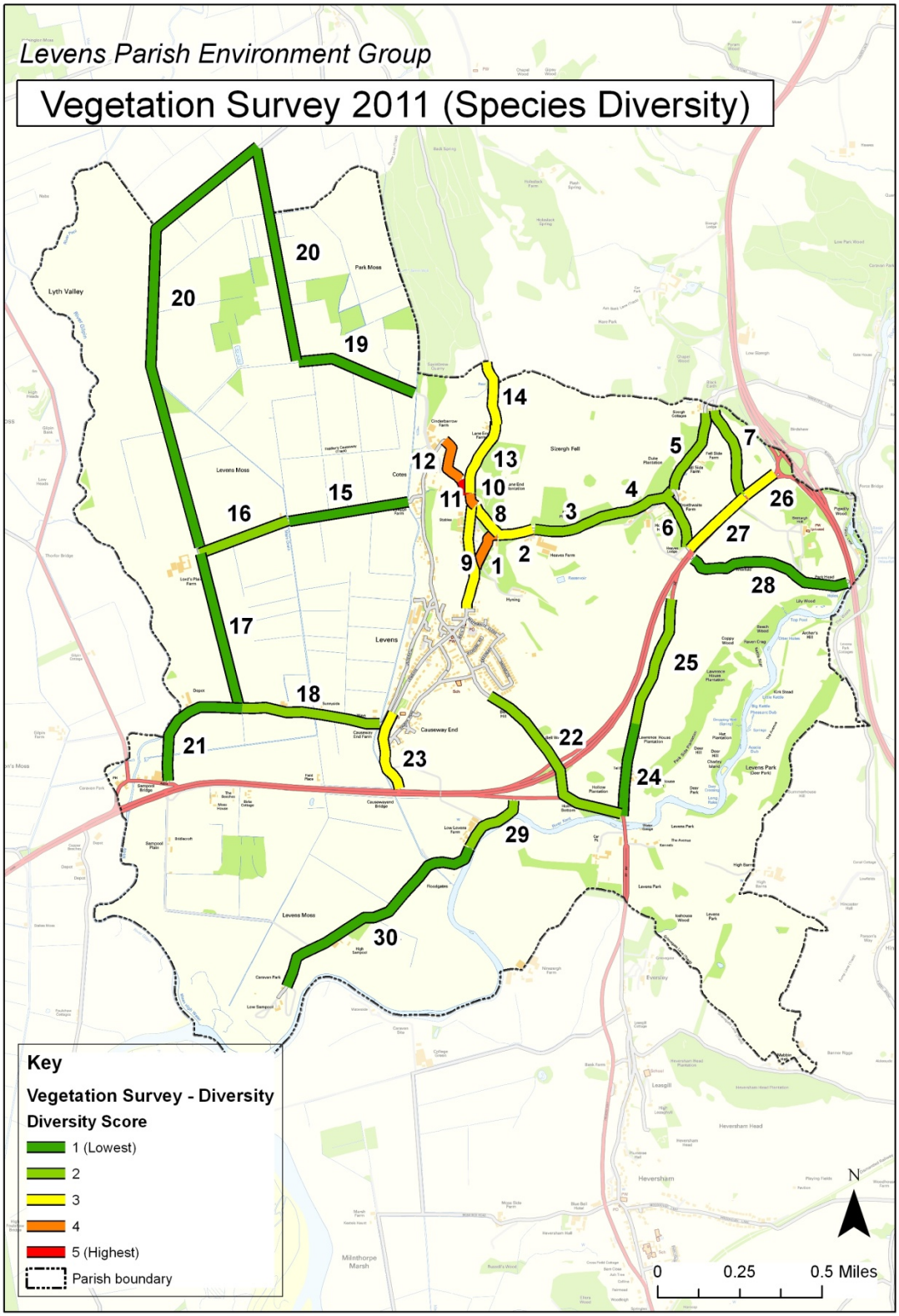
What do the maps show?

It is beyond the scope of this account to provide a very detailed interpretation of the data. The important things to note are:

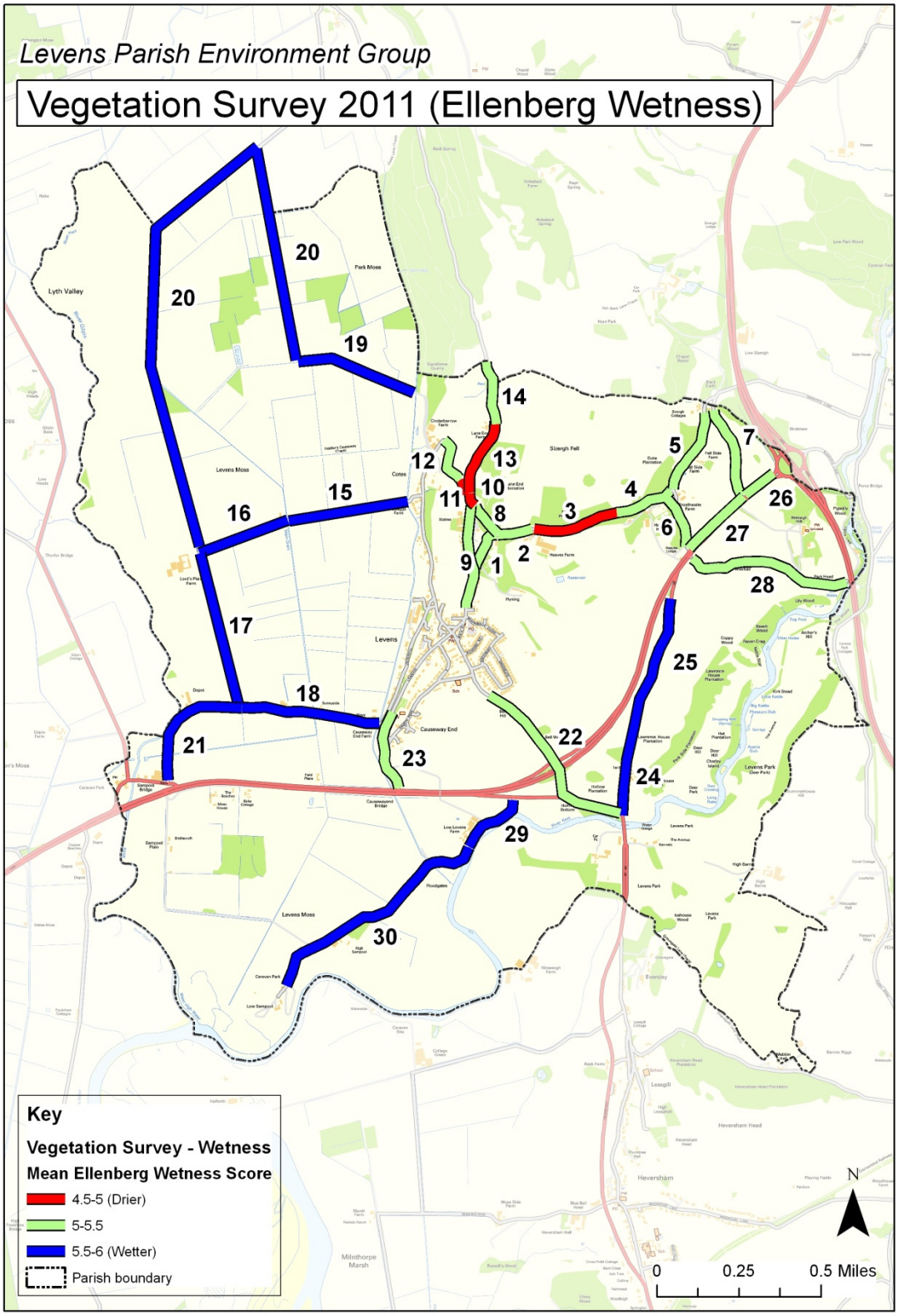
- There is huge variation in plant diversity among the different verge sections in Levens Parish.
- Some verge sections are exceptionally species rich whereas others are species poor.
- In general the highest species richness is found on the limestone verge sections on Sizergh Fell. The lowest species richness is found on The Plain and in the Kent Valley.
- Areas of the highest species richness occur where the soils are well drained and are of relatively low fertility.
- Lowest species richness occurs on the wetter, more fertile soils of the plain, although some species occur commonly here that are not found on the limestone.

- The most species rich sites occur around The Crossings and represent an extension of the species rich grassland and scrub of the Sizergh estate. Other pockets of diversity occur on limestone outcrops by the A590 below the Strickland Arms.
- Repeat cutting probably helps to maintain this diversity by preventing scrub encroachment.
- Diversity is higher on the western aspect of Sizergh Fell compared with the east aspect, presumably as a result of greater exposure to warming sunlight.
- The Ellenberg wetness and fertility maps similarly show a distinction between Sizergh Fell and The Plain and confirm that in general the plants of the raised limestone areas prefer the drier less fertile soils whereas those of the drained mossland and river valley prefer wetter more fertile soils.
- The species lists for each verge sector should be examined if a more detailed understanding of the species present is required.

Map 1



Map 2



Map 3