

Chapter 1: Introduction to Derbyshire's Natural Capital Strategy

Natural capital can be defined as the stocks of natural assets which include geology, soil, air, water and all living things. Our environment is our life support system sustaining and providing our food, fuel, building materials, fresh air, clean water; and as such is fundamental to the functioning and stability of our economy. It is from this natural capital that humans derive a wide range of services, often called ecosystem services, which make human life possible and enjoyable.

Our environment functions as a dynamic system. The land, water and biodiversity it supports are all interconnected; changes in land use such as housing developments not only affect the local environment, but can have implications for the functioning of the environment at a wider landscape scale, and implications for the local and national economy.

The effects of climate change, declines in biodiversity, and increasing population pressure, together with growing scientific understanding of how our environmental systems function, have shown that the earth's resources are finite and need to be carefully managed; they are integral to decision making, and integral to the future health and stability of our economy.

The level of ecosystem services provided by an area of land depends heavily on the land cover or habitat present in that area, and how resilient those habitats are in the face of the many pressures they face, such as pollution, invasive non-native species, and climate change. Natural habitats form the most resilient ecosystems, and provide a wide range of ecosystem services. Resilient habitats adapt to pressures and demands, either by resisting, recovering or adapting to external pressures, whilst retaining their ability to deliver the same level of ecosystem services, now and into the future.

Resilient ecosystems:

- preserve and regenerate soil
- control floods
- mitigate droughts
- pollinate crops
- store carbon
- operate the hydrological cycle
- fix nitrogen
- recycle nutrients
- filter pollutants
- assimilate waste
- maintain a genetic library

It is important to understand how ecosystem services are being delivered in an area, as they underpin our well-being, our prosperity, health, culture and identity. Although they



are often hidden from view, they can be spatially modelled and mapped, and valued in monetary terms by way of a natural capital account, allowing us to realise the true value of nature and the environment.

Our environment is important not only at the local scale, but at the broad landscape scale also. Landscapes have evolved over time as a result of both natural and cultural processes, and these different combinations of natural and human factors can be used to describe the landscape character of an area. The landscape character of Derbyshire is distinct, recognisable and has consistent patterns of elements, such as hedgerows, heath and arable land, in the landscape. It is these patterns that give each locality its 'sense of place', making one landscape different from another.

The Natural Capital Strategy for Derbyshire describes the current status of the natural assets in the county using the best available data. The strategy identifies where our natural capital is resilient and performing well in supporting our population. It identifies opportunities to adjust land management to increase the benefits we get from nature in Derbyshire; this will allow us to understand how and where to invest in maintaining and enhancing natural capital in our landscape, whilst maintaining its distinct landscape character. The rationale of the strategy is shown in Figure 1.



Figure 1: Rationale for the Natural Capital Strategy for Derbyshire

Derbyshire's Natural Capital Strategy comprises:

- a natural capital baseline assessment with:
 - baseline habitat and ecological network maps
 - ecosystem service stock maps
 - baseline landscape character and cultural heritage assessment
- natural capital baseline accounts
- a monitoring plan for updating the natural capital accounts and habitat map
- analysis of the predicted impacts of climate change on natural capital of the county;
- proposed land management actions to maintain and enhance natural capital that align with landscape character
- identification of funding mechanisms to attract investment for natural capital projects
- this report, which includes conclusions, recommendations and technical appendices

The work has been completed by Environment Systems Limited together with eftec Limited and SLR Consulting Limited, with input from key stakeholders in the county. It covers the geographical county of Derbyshire (Figure 2), including Derby City and the area of the Peak District National Park (PDNP), shown in green, that falls within the county.





Figure 2: Area covered by the Derbyshire Natural Capital Strategy, showing Local Administrative Districts

