Devon Local Nature Partnership

Devon Nature Recovery Network

Why we need the Devon Nature Recovery Network and the national context

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February 2022

State of Nature

The State of Nature reports produced by a collaboration of UK conservation and research organisations in 2013[1], 2016[2] and 2019[3] have highlighted a significant decline in species and habitats. Since the 1970s, 41% of species monitored have declined, with 15% facing extinction.

While there are many causes of these species' losses, the single biggest reason lies in widespread habitat loss caused by changes in land use in England. Since medieval times, a long-term decline of semi-natural habitats has taken place through agricultural intensification and enclosure[4]. This decline increased during the agricultural and industrial revolutions and continued into the twentieth century, with semi-natural enclosed grasslands declining by 97% in England and Wales between the 1930s and 1980s[5]. By 2021, the Natural History Museum's Biodiversity Intactness Index[6] rated the UK in the bottom 10% of countries globally with only 53% of its native wildlife remaining. Even those habitats that do remain are often in poor condition. For example, while in Devon we have lost almost half our hedgerow network[7], reflecting the national picture, in 2006 only 22% of the UK's remaining hedgerows were in a favourable state[8].

In 2017 Devon's Local Nature Partnership produced the State of the Environment report for Devon and Torbay[9]. This highlighted that 69% of Devon's SSSIs were in unfavourable status and only 28% of County Wildlife Sites were in favourable condition and positive management. SSSIs and CWSs represent Devon's best habitat and yet two-thirds of this vital network is in unfavourable condition.

Three species are known to have gone extinct in Devon since 1998 – orange upperwing moth, Irish ladies tresses and a ciliate straplichen. A further 10 species are in danger of going extinct including the globally threatened white-clawed crayfish and freshwater pearl mussel as a result of poor river water quality and the impacts of invasive non-native species.

Protected areas

Historically, the nature conservation sector response to the decline of nature has focussed on protecting the remnant areas of priority habitat. Approximately one million hectares (about 8% of England) [10] of such areas have been variously designated. Statutory sites such as Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Local Nature Reserves (LNR) offer the site legal protection and demand positive management. However non-statutory sites such as County Wildlife Sites may inform decision making (e.g. they are a material consideration in planning decisions) but carry little weight legally. Designation, both statutory and non-statutory, is no guarantee of good condition of habitat.

Larger areas covering whole landscapes have also been designated as National Parks and Areas of Outstanding Natural Beauty (3,142,068Ha or 23.5% of England[11]) but this has not resulted in better outcomes for nature. The Glover Review[12] highlighted that SSSIs within protected landscapes are faring worse than those outside these areas.

A key place where habitats have a higher likelihood of sustained long term positive management for nature is in nature reserves managed by environmental NGOs, some Local Authorities and Natural England. This group of sites totalling 286,577Ha (2.15% of England)[13] are often also designated sites.

There are also large areas of Priority Habitat (see Further Information on Habitats) that are not designated and, while some are mapped, many receive no recognition or protection from agricultural change or built development. These areas form networks of habitat across our landscapes and often form the critical links between designated sites.

While designated sites play a critical role in protecting wildlife and acting as a last refuge for vulnerable and threatened species, it is clear that they have not been sufficient in preventing the overwhelming loss of nature in the UK and that a more substantial change of approach is required to reverse declines.

Climate Change

The UK Climate Projections 2018 (UKCP18) predict that climate change is expected to lead to an increased chance of warmer, wetter winters and hotter, drier summers along with an increase in the frequency and intensity of extreme weather[14]. This continues the trends outlined in UKCP09, from which the Inter-agency Climate Change Forum predicted that the key effects on biodiversity from climate change[15] would be:

- Warmer waters (freshwater and marine) will affect the functioning of ecosystems and species, who rely directly on water temperature to regulate their temperature;
- Changes to hydrology leading to drying out of wet habitats and flashiness of rivers leading to greater erosion – coastal areas will be subject to greater storms and higher sea-levels creating erosion and coastal squeeze;
- Northern and cold-loving species will continue a trend of retreating north and to higher altitudes, with ever-more restricted ranges where uplands are isolated, including the likelihood of local extinctions;
- Southern warmth-loving species will generally spread across landscapes moving north and taking in higher altitudes – this includes the likely spread of invasive non-native species;
- Marine cold-water species will likely become squeezed against coasts, with associated changes in ecosystems affecting reliant species (e.g. predator-prey relationships);
- The timing of natural events (phenology) will change, leading to life-cycle changes in species which will likely create a lack of synchronicity between species which are reliant upon each other (e.g. food plant-herbivore and predator-prey relationships). This could lead to changes of ecosystems.

Clearly, habitats that are fragmented and isolated are at greater risk as there is little space for movement of species or adaptation of the habitat.

Nature recovery, however, offers an important way of mitigating and adapting to climate change, with habitats (and the soils under them) soaking up carbon and water, slowing flows and cleaning the water. Trees and plants can offer localised temperature reductions and capture humidity. Coastal marine habitats help capture carbon while limiting the effects of storms by soaking up energy and reducing coastal erosion.

Making Space for Nature

In 2010, Professor Sir John Lawton headed up the government review of wildlife sites and ecological networks in England[16]. This document highlighted the need for a step-change in conservation and proposed the need for ecological networks to enable nature's recovery. Lawton proposed that large-scale habitat restoration and creation was required, re-establishing ecological processes and networks, and demanding more, bigger, better and joined-up habitats in order to achieve this. This approach has formed the bedrock of nature

recovery approaches since, including landscape-scale projects and now the Nature Recovery Network.

National policy and legislative framework for the Nature Recovery Network

In January 2018, the UK Government published its 25 Year Environment Plan[17] to set out its approach to protecting and enhancing wildlife and the environment. This sets out the Government's intent to develop a 'Nature Recovery Network providing 500,000 hectares of additional wildlife habitat, more effectively linking existing protected sites and landscapes, as well as urban green and blue infrastructure'.

The Devon NRN is one of many local NRNs being developed across the country that together make up the national NRN. The NRN will provide a single focal point for delivery of and investment in wildlife and environment protection and enhancement.

The Environment Act 2021[18] (section 104) 'underpins the government's approach to establishing the NRN', requiring 'responsible authorities' (as yet still to be defined but likely to be local authorities, protected landscapes or Natural England) to 'establish spatial mapping and planning tools to identify existing and potential habitat for wildlife and agree local priorities for enhancing biodiversity in every area of England' – known as Local Nature Recovery Strategies.

Ecological network mapping approaches

Development of county-wide and some regional biodiversity mapping approaches have been ongoing since the early 1990s. This has been carried out by Wildlife Trusts, Local Environmental Records Centres, local authorities and Local Nature Partnerships, with a variety of approaches and large differences in availability of data.

Since the 25 Year Environment Plan, these pieces of work are becoming ever more important and recognised as leading the way in the development of an NRN.

Developing a Devon Nature Recovery Network Map

In 2016, Devon Wildlife Trust began investigating the potential for developing a Devon ecological network map, carrying out a review of the approaches adopted by other counties and starting to get an initial understanding of the data available in Devon for replicating these.

From 2018 and the launch of the 25 Year Environment Plan, the term Nature Recovery Network Map was adopted and the work was brought under the Local Nature Partnership, in order to ensure relevance to and input from the key user groups.

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