The state of nature conservation

Measuring changes in nature conservation

The Lake District National Park is rich in wildlife and geological features. Species of European importance in the Lake District include the dormouse and otter, eight species of bat, the great crested newt, vendace, the natterjack toad and floating water plantain. We also have nationally important populations of red squirrel and red deer.

The fells represent a significant part of England's upland dry heath, wet heath, blanket bog and mire. Arctic-alpine communities and the vegetation of rocky ledges and screes are particularly noteworthy. Freshwater habitats give the Lake District a unique identity and some of our rarest plant and animal species rely on good water quality. There is proportionately more ancient semi-natural woodland than in most other areas of the UK, with western acidic oak woods, ash, alder and yew woodlands, and extensive stands of juniper. Species rich northern hay meadows, limestone grassland and limestone pavements add another dimension.

Geological and geomorphological sites include examples of mineralisation, volcanic activity, glacial and sedimentation processes. A number of sites are used as reference standards, fundamental to geological study worldwide.

Areas accounting for 18% of the National Park are designated as Sites of Special Scientific Interest for their biological and/or geological importance.

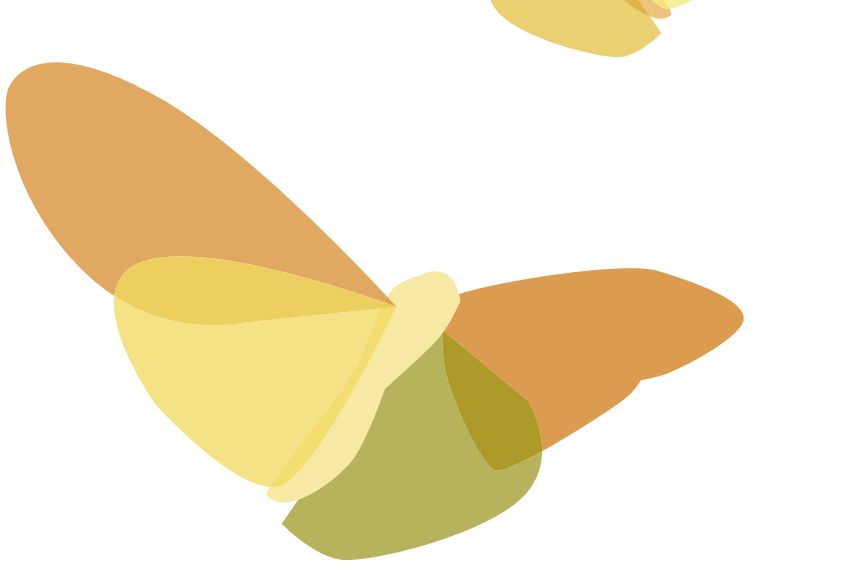
Over the last 15 years habitats and species have benefited from changes in national agricultural and forestry policies to promote more environmentally sympathetic management, for example, through the Lake District Environmentally Sensitive Area Scheme. Climate change could have a significant effect in the future – whether this is beneficial or detrimental remains to be seen.

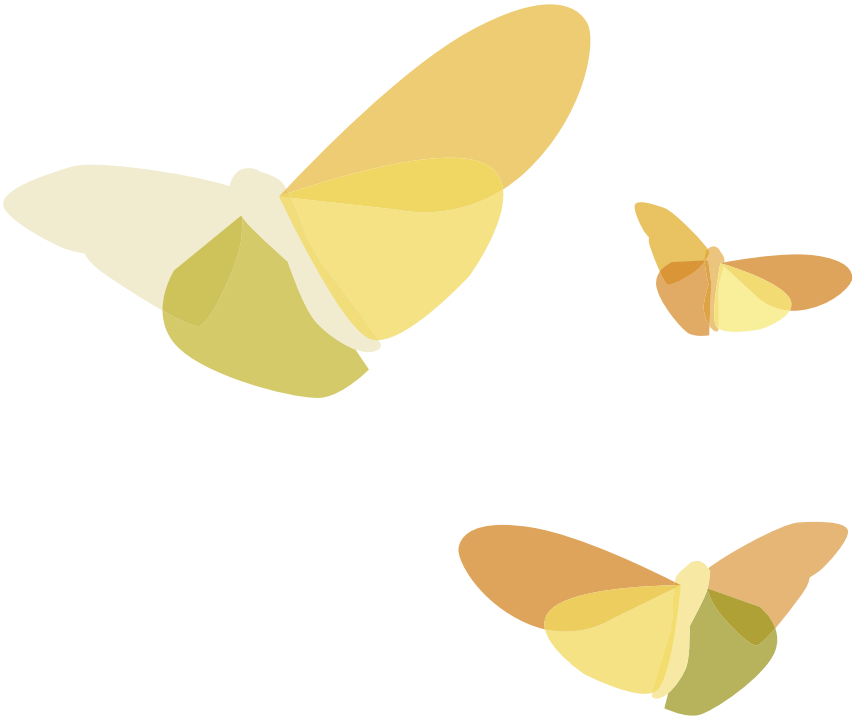
Key indicators used to monitor change will be:

SOP4
Changes in distinctive endangered or indicative species and habitats
1. Measures of the status of selected groups of species from the Cumbria Biodiversity Action Plan
2. Measurement of two habitats from the Cumbria Biodiversity Action Plan

SOP5
Changes in Sites of Special Scientific Interest.
1. Condition of SSSIs

SOP6
Changes in water quality
1. Measurements of water quality (still and running)





SOP4
Changes in distinctive, endangered or indicative species or habitats

The Cumbria Biodiversity Action Plan reflects both national and local biodiversity priorities and targets, and lists priority actions for a range of habitats and species. Management of one species or habitat can adversely affect another. A strategic view needs to be taken as to what the priority is for management in different areas. We will examine the distribution and abundance of the following selected species and habitats as a measure of the health of the wildlife of the National Park:

Butterflies
Upland bird species
– raven, ring ouzel and birds of prey
Valley bottom breeding waders
– lapwing, redshank, curlew and snipe
Hay meadows
Woodland

Different species of butterfly use different food plants and habitats. The greater the number of butterfly species present, the greater the variety of habitats that must be present to support them. A measure of the distribution of individual species gives some indication of the extent of their preferred habitat.

Comparison of data for butterflies shows that between the periods 1995-1999 and 2000-2004, numbers of species declined in 17 out of 30 sample areas within the National Park. Seven areas showed an increase in numbers and six showed no change.

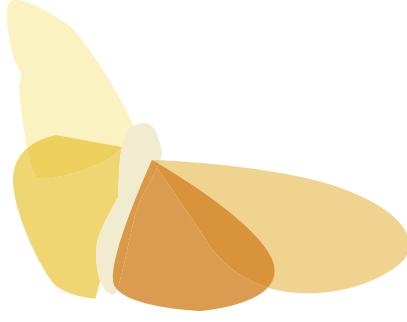
Change in number of butterfly species. Based on 30 sample areas, 1995-2004

How has it changed?

– 51%

There has been a decline in butterfly species in over half the sample areas between 1995 and 2004

Source: Tullie House Museum, 2005



Working with Cumbria Bird Club, we will create a system for monitoring upland bird species (represented by raven, ring ouzel and birds of prey) and valley bottom breeding waders (represented by lapwing, redshank, curlew and snipe). Any changes in the status of the individual species and, by inference, the condition of their main habitats will be noted.

Assessing the current extent and quality of species-rich hay meadows will require new field surveys. This is likely to be over a two-year period.

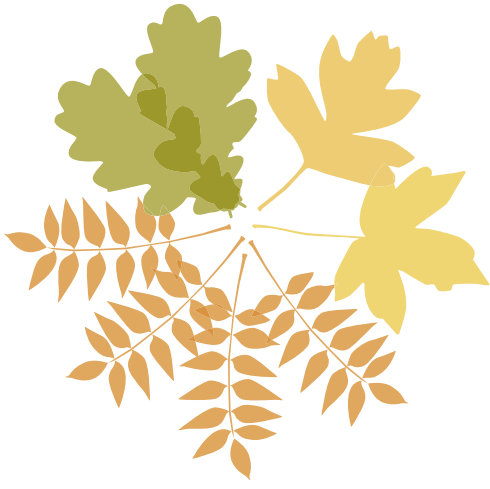
Although accurate information is available on the distribution of woodland, an assessment of woodland condition is an essential but more complex task. Different woodlands can be managed in different ways. Each approach may be beneficial for wildlife, landscape and cultural heritage – and each approach will have its own definition of what good condition is. Therefore any assessment of woodland condition depends largely on that woodland's specific management objectives. We will develop a process to measure changes in woodland condition.

SOP5
Changes in Sites of Special Scientific Interest

There are 132 Sites of Special Scientific Interest (SSSIs) in the National Park. Of these, 84 are notified for their biological interest, 37 geological and 11 a combination of both. As many as 45 of these sites have international recognition as Natura 2000 sites which include 18 Special Areas for Conservation and two Special Protection Areas. There are also three Ramsar Sites – Wetlands of International Importance.

Measuring the condition of these areas is clearly important and allows us to understand more about what is needed to improve the wildlife of these sites. In some cases, the condition of a particular site may be directly linked to a decline or increase in an indicative species, such as heather. It also allows comparison with other National Parks and other parts of England. The national statutory target is to get 95% of SSSIs in favourable condition or unfavourable recovering by 2010.

There have been significant improvements over the last two years as English Nature's Wildlife Enhancement Schemes have been established on large upland sites. The largest areas still in an unfavourable condition are large freshwater sites where the issues are complex and a shift to improving condition will take longer to achieve.



Lake District National Park: SSSI Condition, April 2005

Favourable 20%

Unfavourable Recovering 19%

Unfavourable No Change 39%

Unfavourable Declining 22%

TOTAL SSSI AREA = 42,000HA

Source: English Nature, 2005

SOP6 - Changes in water quality

There are 9,158 km of watercourses in the Lake District National Park and 58.28sqkm. of still water in the form of the 18 main lakes. The condition of this resource is important to so many aspects of the National Park – water is after all one of the most identifiable elements of the Lake District. The maintenance and, where necessary, restoration of high water quality in the lakes, rivers and tarns is an essential element of the future management of the National Park.

The routine census of water quality has been based on the rivers. An example of the criteria used to assess this is the River Ecosystem Class.

While there is some very detailed information available on some of the lakes and tarns, we will begin collecting information on both rivers and standing waters through the European Water Framework Directive. The Water Framework Directive uses Environmental Quality Standards to measure the Ecological Status of the different freshwaters – both designated and non-designated sites. The information will provide an indication of the quality of catchment management and its effect on freshwaters. It will also identify areas where restoration is required and how this can be achieved. Monitoring programmes will begin in 2006 with an interim overview of significant water management issues in 2007. The first River Basin Management Plans are due to be produced in 2009.

LENGTH OF WATER COURSE IN NATIONAL PARK BY RIVER ECOSYSTEM CLASS		**LENGTH** (km)	**% OF TOTAL STRETCH LENGTH**
1	water of very good quality suitable for all fish species	749.7	80.2
2	water of good quality suitable for all fish species	27.4	2.9
3	water of fair quality suitable for high class coarse fish population	19.1	2.0
4	water of fair quality suitable for coarse fish population	1	0.1
5	water of poor quality which is likely to limit coarse fish population	137.7	14.7
TOTAL STRETCH LENGTH (km)		**934.9**	

Source: Environment Agency, 2005