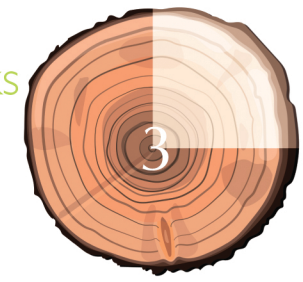
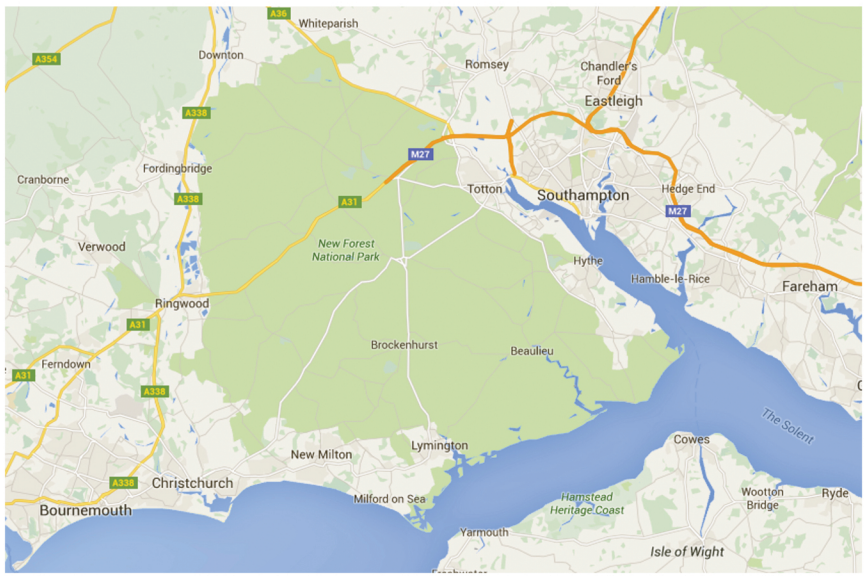
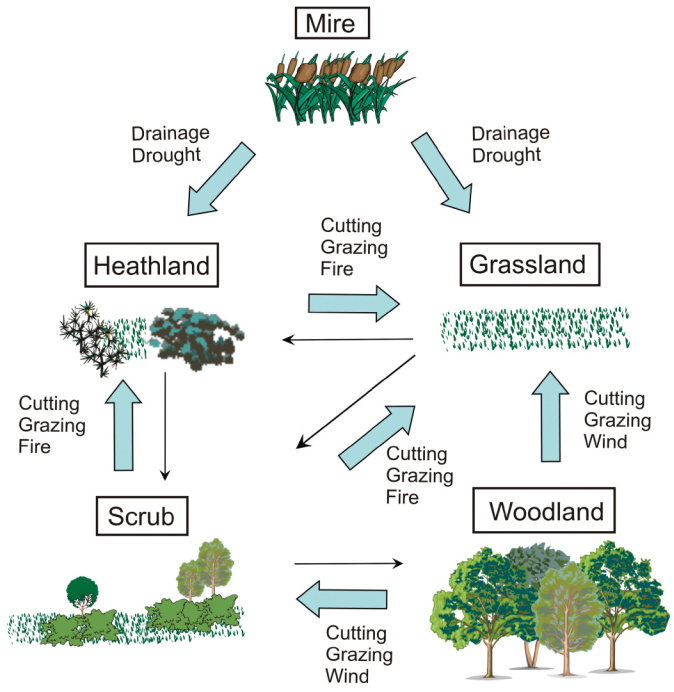


The ecology of the New Forest



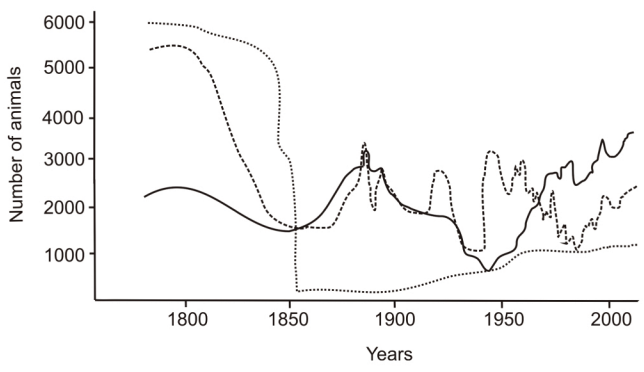
Map of the New Forest. Source: Google Maps.



Vegetation dynamics in the New Forest. The black arrows indicate ecological succession, the blue arrows indicate different forms of disturbance.

Species group	No. species of conservation concern	Estimated total no. of species	Approx. percentage of total number of species in Britain
Birds	37	302	17%
Mammals other than bats	3	19	35%
Bats	13	13	81%
Reptiles and amphibians	12	12/13	92%
Fish	>2	22	88%
Invertebrates	544	5000-10,000	17-33%
Dragonflies and damselflies	9	31	69%
Saproxylic beetles	53	326	55%
Butterflies and moths	72 RDB, and 192 NN	1488 (of which 33 are butterflies)	66%
Other invertebrates	403 including Coleoptera, Hymenoptera, Diptera, Orthoptera, Hemiptera, Crustacea	1539 Coleoptera, 22 Orthoptera, 296 taxa of macro-invertebrate recorded from Forest streams	
Vascular plants	72 RDB, 43 nationally rare or scarce	Approx. 540	36%
Lichens	64 RDB, plus 78 other	421	18%
Fungi	89	2600	22%
Bryophytes	33	326	32%

Species richness of the New Forest. Source: Newton (2010).



Numbers of large herbivores in the New Forest. Source: Newton (2011) using data provided by the New Forest Verderers.

The New Forest is widely appreciated as an important part of our national heritage. It is a very popular visitor attraction, receiving around 13 million day visits a year. Perhaps less well known is its importance for wildlife. It is considered to be one of the most important places for nature conservation in Europe, on account of the size, diversity and quality of wildlife habitats present. For example, the New Forest contains more than a quarter of all of the lowland heathland in England, three quarters of the valley mires in NW Europe, and extensive areas of ancient pasture woodland. Nowhere else do these habitats occur together on so large a scale.

These habitats support exceptionally large numbers of species. More than two thirds of the British species of reptiles and amphibians, butterflies and moths, fish, bats, dragonflies and damselflies are found in the New Forest. Even for those groups that are less well represented, at least one sixth of all British species have been recorded in the area. In every group considered, the New Forest is home to species of national conservation concern, and in some groups, the numbers of such species is very large; for example 115 vascular plant species, 264 butterflies and moths, and 142 lichens.

But what are the effects of current climate change on the wildlife of the New Forest?

And how might climate change affect its value to people?

The New Forest is has developed under the influence of large populations of free-ranging herbivores, including deer and livestock (principally cattle and ponies). The present character of the New Forest is strongly dependent on its history as a medieval hunting forest, and the long-term survival of a traditional commoning system. In recent years, around 6000-7000 ponies, cattle, donkeys, pigs and sheep have been pastured on the Open Forest, which are owned by about 550 local people ('commoners') who possess commoning rights. The numbers of different animals have fluctuated a great deal over time. The number of ponies in the New Forest is currently believed to be at an all-time high.

Grazing and browsing by large herbivores, together with human activities such as cutting and burning, have a major effect on the dynamics of vegetation. Plant communities also change over time through the process of ecological succession. Together, these processes of succession and disturbance have created a complex mosaic of vegetation, which is one of the main characteristics of New Forest landscapes. This complexity is one of the main reasons why the New Forest supports so many species.

Over the past 900+ years, the New Forest has survived many external shocks. These include:

- Major crises in public health during the Medieval period, including the European Famine of 1315–21 and the Black Death of 1346–53.
- A period of significant climate change (1550-1850) referred to as the 'Little Ice Age'.
- The English Civil War and two World Wars
- Many changes in governance

In many ways, as an ecological system, the New Forest has been remarkably resilient to the changes that have occurred in the past. This can partly be attributed to its distinctive land use pattern and its spatial heterogeneity. Nevertheless, at least 170 species have been lost from the New Forest in recent decades, mostly because of changes in land use.