

# **FIRE BEACON HILL LOCAL NATURE RESERVE**

**Public review and consultation on current  
management and future options**

**Information Leaflet**



# **FIRE BEACON HILL LOCAL NATURE RESERVE**

Grid Reference: SY 112 908

## **Introduction**

Fire Beacon Hill Local Nature Reserve (c26 ha) is c3km north of Sidmouth town centre at the southernmost end of East Hill and in the parish of Sidmouth. This area of lowland heath, scrub and secondary woodland was designated as a Local Nature Reserve (LNR) in 1992. All the LNR is designated Common Land. It is within the East Devon Area of Outstanding Natural Beauty and is also a County Wildlife Site.

The northern part of this triangular site is 225m above sea level and is relatively flat but the ground slopes steeply to the south down to 150m. It is bounded to the west and north west by a conifer plantation (Fire Beacon Plantation, owned by the Forestry Commission), to the east and north east by deciduous woodland (Core Hill Wood, owned by the Woodland Trust) and to the south by private farmland.

The reserve is made up of 26.39 ha of dry acidic, lowland heath; acidic grassland and bracken with secondary woodland.

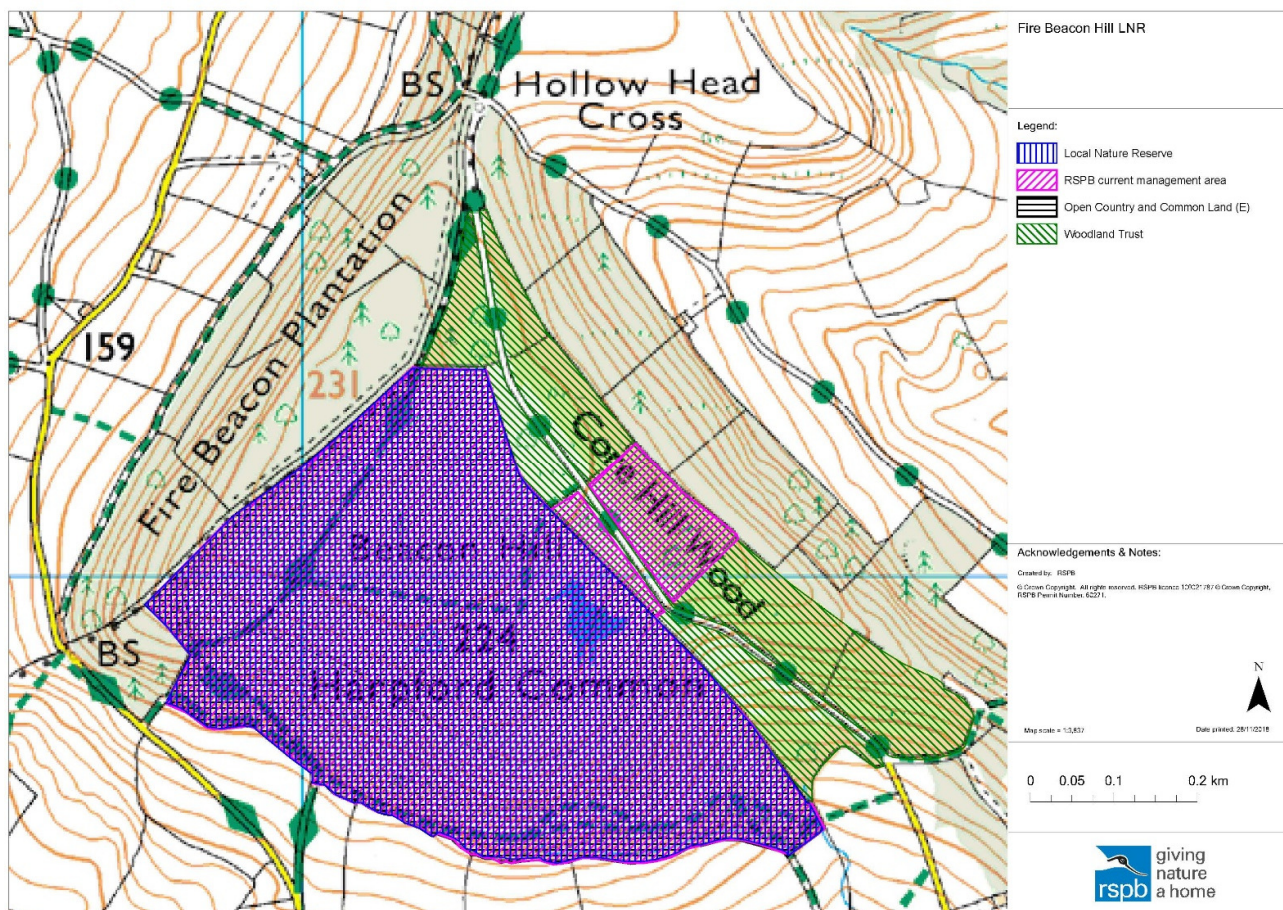
The high and open ground of Fire Beacon Hill LNR, a remnant of once much more extensive areas of open habitats along the East Hill Strip, is prominent in the local landscape. It is a valued site for public access and informal recreation as well as important for nature. Birds breeding on the site include nightjar (a heathland specialist), yellowhammer and linnet. Mammals include dormice in the scrub and woodland areas.

The LNR is owned by Sidmouth Town Council and is managed on the Council's behalf by the Royal Society for the Protection of Birds (RSPB). RSPB also manages an area of heathland within Core Hill Wood. The RSPB has managed the LNR since 1994. Initially management included manual removal of some scrub and trees to restore open habitats – a very labour intensive procedure. Current management includes seasonal grazing on parts of the LNR by cattle that are contained by temporary electric fencing. This grazing restores and retains the open heathland and other open habitats, together with some scrub and woodland. Without such management, the site would be rapidly colonised by bracken, dense scrub and trees, leading to the eventual loss of open heath and grassland and associated wildlife, and making it difficult for people to use the site.

There are two public footpaths, including the East Devon Way walking route, and one public bridleway running through the LNR which is also registered common land.

The Site as a whole is regularly used by walkers, dog-walkers, naturalists, horse-riders, mountain-bike riders and people enjoying the magnificent views over Sidmouth and to the west. East Devon District Council Countryside Service hold educational visits to the Reserve and has produced an audio guide, in partnership with Natural England and Sidmouth Town Council.





### Timeline of RSPB management at Fire Beacon Hill LNR

1994	RSPB first worked with East Devon District Council and Sidmouth Town Council. Early management was removal of much encroaching sycamore from the southern slope.
1997	Fire Beacon Hill LNR entered into a Countryside Stewardship scheme which enabled ongoing management of the nature reserve, including scrub and bracken control and bare ground creation.
2008	Assisted by RSPB, Sidmouth Town Council successfully applied for a Higher Level Stewardship (HLS) agreement that enabled native breeds to be grazed on the nature reserve from 2010.
2010	First grazing of Fire Beacon Hill under RSPB management. Grazing has continued since then annually on the site, with traditional breeds of ponies (Exmoor and Dartmoor) and cattle (Galloways and North Devons).
2018	End of the HLS agreement. Sidmouth Town Council applies for the new Countryside Stewardship higher tier scheme.
End 2018	Start of public review and consultation on future management options for Fire Beacon Hill LNR.

## **A possible vision for the future of Fire Beacon Hill?**

Fire Beacon Hill falls within the Blackdowns National Character Area (Natural England 2014). One of the objectives relevant to Fire Beacon Hill is to “*Protect and manage the open, exposed character of the ridgetop plateaux and the associated rich cultural heritage. Plan for the restoration and extension of semi-natural habitats and promote and create opportunities to enhance public understanding and enjoyment, for example by . . .*

- *Encouraging management and re-creation of the heathland commons and restoration of more prominent conifer plantations to semi-natural habitats,. . .*”

The RSPB is keen that future management at Fire Beacon Hill contributes further towards this objective.

## **Consultation – we’d like to know what you think**

After nearly 25 years of RSPB management of this important area, it is time to review the current situation and to think about possible options for the future. These options could include:

- continuing with the current management on Fire Beacon Hill LNR?
- changing the management on Fire Beacon Hill LNR in some way (eg to graze over more of the site)?
- finding out if our neighbours WT and FC are interested in any coordinated management approach and better linkages between the sites that could see more integration of habitats, eg, restoration of more heathland and open ground habitats via not re-planting more conifers as existing ones are felled, protecting existing veteran broadleaved trees and consideration of ‘wood pasture’ grazing management?

An important first step in any possible change is to find out what users of Fire Beacon Hill LNR and the adjacent land think so we are holding events on 4, 12 and 13 December.

We’d like to know what you value about Fire Beacon Hill LNR, how you use the site, what you think of the current habitats and management and what you would like to happen in future so please complete the questionnaire at these events or e-mail [FBHconsultation@rspb.org.uk](mailto:FBHconsultation@rspb.org.uk) to have one sent to you.

**Please send us your views and comments to [FBHconsultation@rspb.org.uk](mailto:FBHconsultation@rspb.org.uk) by 9 February 2019.**

Once we know what people think, we can consider how we can make any changes that would benefit nature and people and then propose some options for public consultation in spring 2019.

## **Next steps**

By the end of February 2019, we’ll have reviewed and summarised all the comments received. We’ll use these to inform our proposals for future management and publicise these for further consultation in spring 2019.

The owner and managers of Fire Beacon Hill will give serious consideration to any views and opinions expressed by the consultees before making final decisions on the way forward. Any changes that require an application for Common Land consent will obviously be preceded by public consultation.

## Background information

### Looking into the past – the history of Fire Beacon Hill

The prominence of the Local Nature Reserve overlooking Sidmouth and the coastal region to the west makes it likely that it had ancient significance. There are records of prehistoric burial mounds on or in the vicinity of the Reserve but their precise location is unknown.

As the name suggests, Fire Beacon Hill was used as a lookout and beacon, possibly from the 11<sup>th</sup> century, and formed part of the national chain of beacons which warned of the approach of the Spanish Armada in 1588. In the nineteenth century the remains of an ancient beacon at the end of the ridge were still visible. Today all traces of the beacon have disappeared but it is thought to have been similar in structure to that which can still be seen at Culmstock.

There is some difficulty in tracing the precise history of the Reserve due to it being included within the description of Harpford Common. However it would appear that it originally formed part of the lands of the Manor of Harpford. The Manor was in the possession of Otterton Priory until 1011 when it passed to the Dinham family who held it until the Tudor period. The Manor subsequently passed to the Rolle family, the present day owners of Clinton Devon Estates.

By the time of the preparation of the Tithe Map of 1839, the area known as Beacon Hill was recorded in the Tithe Apportionments as being Common in the ownership of the Landowners of Harpford. In 1932, after parish boundary reorganisation, the Reserve was transferred from Harpford Parish to the Urban District of Sidmouth and after further reorganisation was transferred in 1980 to the current owners, Sidmouth Town Council.

The Reserve has been common land for many centuries. A survey of Lord Dinham's lands in 1566 refers to his tenants having rights of pasture (ie to graze their livestock) and pannage (allowing pigs or other livestock into a woodland to feed on fallen acorns and other tree seeds). By the eighteenth century there is also reference to rights of turbary (to cut turf for fuel). These traditional uses, which included grazing, burning and the removal of turves, bracken and scrub for fuel and animal bedding prevented woodland from re-establishing and the continual removal of nutrients from the system maintained the poor soils and open heathland vegetation.

There has been much legislation relating to common land over the centuries and this was consolidated with the Commons Registration Act 1965 and the creation of Commons Registers. The Reserve was included in Devon County Council's Register under unit CL213 and no rights over this common land were registered.

The Common Land at Fire Beacon Hill appears on the Commons Register (1965) as Harpford Common with Mutter's Moor under registration no.CL213. No commons rights or commoners are registered. Under the Countryside and Rights of Way Act 2000 (CROW Act) the public has a legal right of access to and over Common Land.

The adjacent land owned by FC and the WT is not registered Common Land. Core Hill Wood is open access land (Countryside and Rights of Way Act 2000). Core Hill Road, an ancient routeway from Sidmouth to Honiton, runs through the WT land.

Fire Beacon Hill enjoys stupendous views over Sidmouth and the coast which have long attracted visitors. In 1810 the Rev Butcher referred to there being a 'fine panorama' and John Taylor Coleridge, the half brother of the poet Samuel Taylor Coleridge, wrote of his walks with John Keble, "*There, on the short green turf we often rested and enjoyed a view which for beauty, variety and extent is not easily to be surpassed. Down deep on the left lay Sidmouth and the blue sea*".



Administrative boundaries have changed many times over the centuries. The western boundary of the reserve is believed to be part of an Anglo-Saxon land boundary and today remains the boundary between the parishes of Ottery St Mary and Sidmouth. The eastern boundary of the land owned by the WT also includes an ancient parish boundary which today separates the areas of Sidmouth parish known as Sidmouth North and Sidford Village.






### **What lies beneath – the geology of Fire Beacon Hill**

Fire Beacon Hill is part of the East Devon dissected plateau, comprising calcareous Upper Greensand capped by clay-with-flints and chert (in part Eocene) and overlying Keuper Marls.

Fire Beacon Hill shows on the 1:50,000 geological map <sup>(1)</sup> as the southern end of East Hill, the westerly ridge of a dissected plateau, stretching north towards Honiton. Separated by a steep sided valley which now contains the A3052, the ridge continues through Mutter's Moor to the sea, where the underlying rocks are exposed in the cliffs.

Beneath the ridge and underlying the valleys of the Otter and the Sid, are the Middle Triassic (Ladinian) Sidmouth Mudstones, deposited in a semi-desert environment. These were tilted and faulted then eroded before the rocks which now create the ridge were deposited on top. The Early Cretaceous (Albian) Upper Greensand Formation, sitting unconformably on the Triassic red sands and mudstones, is a sequence of calcareous and glauconitic sands with varying amounts of tabular and nodular chert. It is divided into three members, but these are not distinguished on the 1:50,000 map. The Greensand is interpreted as near-shore or shallow marine deposits <sup>(2)</sup> and represents the Chalk sea encroaching from the East, which would eventually cover the whole area. Where the Greensand sits on clay-rich mudstones landslips are common, and this is recorded on the southern slope of the Reserve. The top of the Greensand is a deeply eroded, karstic Tertiary erosion surface <sup>(3)</sup>, with the Greensand decalcified to varying depths below. On this surface the Clay-with-flints is mapped as capping the ridge. The Clay-with-flints is a complex deposit, which

has been subject to various interpretations. Gallois (2009) <sup>(4)</sup> divides it into two: the undisturbed red-brown clay with up to 50% cobbles of flint and chert, which are unweathered at least in the lower layers, which is labelled Clay-with-flints *sensu stricto* and is interpreted as the remains of *in situ* solution of layers of Middle and Upper Chalk as well as part of the Greensand itself, caused by tropical weathering during the Paleocene Eocene Thermal Maximum, leaving behind only the insoluble clays and flints. This date is applied because coastal sections of the Clay-with-flints ss are affected by Miocene faulting. But this pristine deposit is seldom found, and much of the material mapped as Clay-with-flints contains sand and quartzitic pebbles which are probably the remains of later Tertiary deposits, reworked during the extreme cryoturbation and ongoing solution caused by periglacial conditions during the Pleistocene. This mixed deposit is named as Clay-with-flints *sensu lato* and similar materials form the extensive Ice Age Head deposits (unbedded reddish-brown gravelly clays) which mantle the steep slopes on the lower parts of the East Hill ridge, obscuring the Sidmouth Mudstones below.

Pleistocene	Head Clay-with-flints <i>sensu lato</i>	2.6 MY - present
		
Miocene		23-5.3 MY
		
Eocene	Clay-with-flints <i>sensu stricto</i>	56 – 33.9 MY
Palaeocene		65.5 – 56 MY
Cretaceous	Upper	Chalk
	Middle	
	Early	
Upper Greensand		145.5 – 65.5 MY
		
Triassic	Middle Sidmouth Mudstone	251-199 MY

#### References:

- (1) British Geological Survey (2004) England and Wales Sheet 326 "Sidmouth" Solid and drift
- (2) Durrance, E M and Laming, J D C (1982) "The Geology of Devon" University of Exeter
- (3) Edwards, R A and Gallois, R W (2004) "Geology of the Sidmouth District" NERC
- (4) Gallois, R W (2009) "The Origin of the Clay-with-flints: the missing link" Geoscience in South-West England, 12, 153-161.

### Lowland heathland – what is it and why is it important?

Heathland is a well-known habitat type in the lowlands of the UK. It occurs on acidic, impoverished, dry sandy or wet peaty soils, and is characterised by the presence of a range of dwarf-shrubs. These include various types of heather and gorse, as well as bilberry.

Heathland is home to numerous highly specialised plants and animals. It is particularly important for reptiles, especially large lowland heathland blocks in southern England. The more widespread of these reptile species, adder, common lizard, grass snake and slowworm are present at Fire Beacon Hill LNR. A number of scarce birds use lowland heathland as their primary habitat, such as the nightjar and Dartford warbler, both these species breed at Fire Beacon Hill. Many scarce and threatened invertebrates and plants are found on lowland heathland.

Heathland also has high intrinsic appeal and provides a special sense of wilderness.

Lowland heathland is a priority for nature conservation because it is a rare and threatened habitat. It declined greatly in extent during the last two centuries. Devon has one fifth of the lowland heathland left in SW England, with c4,000 ha. The UK lost 84% of its once extensive lowland heathland areas while in England it is

estimated that only one sixth of the heathland present in 1800 remains. In east Devon, heathland extent declined by 60%.

So where has it all gone? Land use change to forestry, enclosed farmland, mineral extraction, built development including roads, houses and industrial estates has all destroyed massive areas of lowland heathland in southern England.

Despite legislative protection for much of the remaining heathland, it still faces major pressures. Among these is decline in traditional management or no management which presents a real threat of loss of the special heathland plants while habitat fragmentation has caused a decline in many species' range and abundance.



### **Background to heathland management**

Heathlands are open, heather-covered landscapes on poor, acid soils, maintained through the constant activities of people and their farm animals. In the absence of management, most heathland will rapidly revert to bracken, scrub and trees, and eventually will disappear under woodland.

Since medieval times, heaths have been used by local communities for grazing their animals, usually combined with burning to create fresh growth for spring grazing; for collecting bracken for animal bedding; cutting turves, small timber and gorse for fuel; lopping larger timber; digging sand and flint for tracks; and cutting the heather for thatching and other uses. These activities, which for centuries kept the heathlands open, have now largely ceased. It was this multiplicity of uses, often random, sporadic and uncoordinated, that created and maintained a mosaic of vegetation structures and ages which was so good for wildlife.

The collection of sand and flints by hand created small bare areas in which solitary bees and wasps could dig their burrows and lay their eggs, gorse cutting to fuel bread ovens resulted in a continual source of dense young re-growth for feeding and nesting birds such as linnets, stonechats and yellowhammers.



But above all it was the management of the heather communities by cutting, burning and grazing that perpetuated the plant and animal communities of the extensive dry heaths. This process provided the right conditions for the associated and characteristic plants and animals of pioneer, building, mature and degenerate heath. These heathland communities were further modified by the effects of grazing animals that created the right niches for the enormous diversity of heathland organisms by their grazing and trampling. These activities created habitats that met the specialised requirements of heathland invertebrates, reptiles and birds for feeding, reproducing and finding shelter and protection from predators. They also helped maintain the balance between heather domination and the encroachment of trees and scrub or the invasion of grasses.

The modern heathland manager must replicate the variety of past managements to maintain the diversity of habitats to cater for the needs of the specialised flora and fauna. However, today the heaths are now widely used for recreation by people, often with dogs, leading to disturbance to ground nesting birds, particularly nightjar, erosion and compaction of soils, soil enrichment from dog waste and conflicts between different users.

A further modern complication is enrichment of the impoverished heathland soils from atmospheric nitrogen. Enrichment causes deterioration in the heather communities from drought and frost damage, insect attack and premature aging, resulting in the invasion of grasses and loss of heather communities. It can also encourage tree and scrub encroachment and the spread of bracken.

### **Management techniques**

In order to replicate past management the heathland manager has a limited range of options, including physical removal of trees and scrub, burning, cutting and grazing.

### **Scrub control**

Physical removal of trees and scrub is a continual but relatively uncomplicated process. Deciduous species grow back unless the stumps are treated with a suitable chemical. Scrub re-growth can also be reduced by grazing.

### **Burning and cutting**

Burning and cutting can reduce the accumulated nutrient load by some 25-35% and are relatively easy to do. Both techniques however leave behind a uniform habitat with little or no structural variety, generate an even-aged area of recovering vegetation, and are one-off processes that can be repeated on the same ground effectively only after a substantial number of years. If carried out sensitively and on a relatively small scale, both cutting and burning can create large scale variety and diversity in the age and structure of the vegetation, and can also provide areas that act as firebreaks in the event of wild fires.

In East Devon we are allowed to burn/swale the heath up until the end of March. It is often quite difficult to find the correct weather window to allow burning, in recent years we have only managed to burn a relatively small areas on the north east side of Fire Beacon Hill.

### **Grazing**

Under the terms of the Higher Level Stewardship agreement Sidmouth Town Council has been grazing with cattle suitable for the conditions, to suppress scrub and grasses during the main growing season. Stocking densities are in the region of six animals for the grazing period which is generally May to November, and are adjusted dependant on the season and type of stock.

Grazing is a sustainable, low-input, traditional method of management creating small-scale vegetation mosaics and microhabitats for plants and invertebrates. This is essential for maintaining the richness and diversity of heathlands. Grazing would also

help to control invasive species such as birch and purple moor grass. Cattle trampling can help control bracken by breaking up the litter and damaging young fronds, especially following mechanical management.

Native breeds are well adapted to grazing semi-natural vegetation on difficult terrain. Generally traditional breeds of cattle are docile and well suited to cope with poor forage. Exmoor ponies can also live on rough vegetation, generally ignore dogs and people, and eat very little heather.



We currently graze in six electric fence loops and these fences are put up, moved around and then taken down at the end of autumn. The total grazing area at the moment is approximately 10 hectares, this includes some of the Woodland Trust land in Core Hill. Over the eight or so years of recent grazing of the site we have used a variety of breeds, Galloways, North Devons, Welsh Blacks and both local breeds of native ponies, Exmoor and Dartmoors.

Grazing had the added advantage of producing a saleable product – local and sustainably produced meat from the cattle!

### **Bracken management**

Bracken was once harvested for animal bedding but now has no commercial uses. Bracken can quickly become overly dominant on a site and management is necessary to prevent it spreading and out-competing less vigorous species. Since the RSPB's first involvement on the site in 1994, we have adopted an integrated approach to bracken control, here on Fire Beacon Hill we have deployed all the tools from the box. The aim is not to eradicate this plant but to prevent its total dominance over the site. In recent years, with the additional licencing of Asulox (the chemical appropriate for bracken control) we have used our cut and collect system along with mechanical rolling to control the spread of bracken and to reduce its vigour. It is hoped that now the plants' rhizomes are stressed sufficiently we can apply an herbicide in the next few years.



### **Woodland management**

Coppicing is the cutting down to ground level of broad-leaved tree species; multiple stems then grow from the `stool' created at the base of the trunk. Coppiced trees can be re-cut over cycles of 10-30 years, often depending on the species involved and if there are any commercial or other uses for the cut material.

Active coppice management has been re-established in the woodland glade in the south eastern corner of Fire Beacon Hill. Here hazel, birch and willow have been coppiced over the past 8-10 years, and this has been followed up with additional thinning, edge scalloping and the introduction of grazing in the glade.

We have also removed invasive non-native species from the woodland edge including laurel and rhododendron.

### **Wood pasture**

Wood pasture, which is not part of current management at Fire Beacon Hill, is defined as a mosaic habitat valued for individual park-like trees particularly veteran and ancient, and the fauna, flora and fungi it supports, including a number of species that only occur in wood pasture and parkland. Grazing animals are fundamental to the habitats existence and many sites are also important historic landscapes.

Key features of wood pasture are:

- Ancient/veteran trees – some of the oldest living organisms in the UK, mostly open crowned and hollowing.
- Grazing animals – the dung contributes to invertebrate and fungal diversity; while grazing controls young trees and shrubs, maintaining a semi-open habitat.
- Microhabitats – large diameter hollows in trees, other decaying wood, rot holes, ageing bark and fallen but regenerating trees; these support a wide range of specialised (including saproxylic) invertebrates, lichen and fungi.

Nectar sources for invertebrates.

- Open grassland or heathland ground vegetation.



- Continuity – long-lived individual trees and management.

Wood pasture is a diverse habitat supporting rich communities of species, including fungi, hole-nesting species of birds such as woodpeckers, and invertebrates including some rare beetles and butterflies that need the shelter and structure of lightly-grazed 'open' wooded areas.

Wood pasture is a habitat that probably dates back to the original wildwood or to Neolithic livestock keepers. In 1086 wood pasture commons appear to be the predominant woodland type (Rackham, 2006). It often resulted in widely-spaced pollarded trees with animals grazing the open areas, including areas of heathland and grassland, between.

One possible option for any extended management at Fire Beacon Hill LNR that RSPB is keen to explore is to extend grazing management over the whole site and possibly link with the adjacent land, including consideration of grazing over more of the Woodland Trust's Core Hill Wood (an area of which is already grazed by RSPB). As well as being the best means of continuing to manage the existing heathland and other open habitats on the LNR, introducing a 'wood pasture' system, including possibly on adjacent land, could have other benefits, for nature and for people.

### **Wildlife at Fire Beacon Hill**

**Birds** Many of the heathland specialist species found on other and larger open heathland sites in southern England are present at Fire Beacon Hill. Key birds include Dartford warblers, stonechats, yellowhammers, linnets, with the elusive nightjar appearing late in the spring. Most of these nest in gorse and other scrub while the nightjar nests on the ground. The woodland edge and surrounding farmland support dunnoek, bullfinch, wren, blackbird, robin, tits, thrushes, and tawny owl – and some of these also use the open heathland.

**Reptiles** We've recorded four reptile species in our site monitoring: common lizard, slowworm, adder and grass snake.

**Invertebrates** We have recently established a butterfly transect route and are starting to carry out some other insect monitoring. Notable butterflies include grayling and small heath butterflies, both are lovers of sunny, open habitats.

**Mammals** We monitor dormice monthly, as part of a national recording scheme, with over fifty dormice boxes being along the southern edge of the nature reserve and in the Woodland Trust site reserve. Good numbers breed in the woodland edge. Over the years we have recorded several species of bats including, Natterers, lesser horseshoe, grey long eared, two types of pipistrelle and babastelle. Bark crevices and holes in the older trees around the boundaries of Fire Beacon Hill will be roost sites for some of these. There are also several active badger setts on the southern slope.

### **Plants**

The heathland species include ling and bell heather plus cross-leaved heath in the wetter areas, and common or European gorse and western gorse. Unusually for east Devon, bilberry is also present. The willow carr woodland at the bottom of the southern slope is of local interest.