

## Biological features: East Dartmoor Woods and Heaths National Nature Reserve, Devon, UK

### Flora

Yarner Wood is dominated by Sessile oak *Quercus petraea*, much of this abandoned coppice. Silver birch *Betula pendula* is common and the understorey contains abundant Holly *Ilex aquifolium* and Rowan *Sorbus aucuparia*. Honeysuckle *Lonicera periclymenum* and Ivy *Hedera helix* occur abundantly, while the ground vegetation is characterised by a dominance of Bilberry *Vaccinium myrtillus*.

Bovey Valley Woodlands is comparatively recent in origin, and generally consists of a mixture of Sessile oak, Pedunculate oak *Quercus robur* and Silver birch which has colonised well drained ground. Alder *Alnus glutinosa*, Ash *Fraxinus excelsior*, Aspen *Populus tremula* and Sallow *Salix sp.* grow with Pedunculate oak and Silver birch on wetter ground. The ground flora varies from a dense cover of Bracken *Pteridium aquilinum* and Bramble *Rubus fruticosus* with a few calcifuge herbs such as Cow-wheat *Melampyrum pratense* and Wood sorrel *Oxalis acetosella* to a herb rich flora including Sanicle *Sanicula europaea*, Primrose *Primula vulgaris* and Dog's mercury *Mercurialis perennis*.

There are no Red Data Book species on the reserve, although several notable species occur. Some of these are rare in Devon, occurring in less than 100 tetrads in the county (see 2003-2008 EDWH NNR Management Plan).

Yarner Wood does not support a notably rich or luxuriant bryophyte flora, and has only six Atlantic species. The Bovey Valley Woodlands have a higher bryophyte interest, possibly because of the relatively higher humidity levels created by the River Bovey. The nationally rare multi-fruited River moss *Cryphaea lamyana* is found on the banks of the River Bovey and is recorded from only ten tetrads in Britain.

Both Yarner Wood and Bovey Valley Woodlands are considered to be of moderate interest for lichens. Over 100 lichen species have been recorded at Yarner Wood, some of which are ancient woodland indicator species and are nationally rare or regionally significant.

Heathland on Trendlebere Down is dominated by Heather *Calluna vulgaris* and also contains abundant Bell heather *Erica cinerea*, Cross-leaved heath *Erica tetralix*, Western gorse *Ulex gallii*, Purple moor-grass *Molinia caerulea* and scrub birch. Trendlebere Down contains valley mire vegetation with Round-leaved sundew *Drosera rotundifolia*, Bog asphodel *Narthecium ossifragum*, Common cottongrass *Eriophorum angustifolium* and Southern marsh-orchid *Dactylorhiza praetermissa*.

### Fauna

#### i) Invertebrates

Butterfly and moth fauna is rich, with 33 butterfly species and over 650 moth species recorded in Yarner Wood alone. Characteristic butterflies include White admiral *Limenitis camilla* and the nationally important High brown fritillary *Argynnis adippe*, while among the

many moths present Orange upperwing *Jodia croceago* and Devon carpet *Lampropteryx otregiata* are notable. Butterflies found in Bovey Valley Woodlands and the heath margins include scarce species such as the Pearl-bordered fritillary *Boloria euphrosyne*, Purple emperor *Apatura iris* and Brown hairstreak *Thecla betulae*. The River Bovey supports a good number of dragonflies, the most abundant of which is the Beautiful demoiselle *Agrion (caleopteryx) virgo*.

In addition, there are significant populations of Red wood ants *Formica rufa* (800 nests with an estimated population of 200 million ants at Yarner Wood).

#### ii) Birds

The breeding bird community contains species typical of western oakwoods, including regionally important populations of Wood warbler *Phylloscopus sibilatrix*, Pied flycatcher *Ficedula hypoleuca*, Lesser-spotted woodpecker *Dendrocopus minor* and Redstart *Phoenicurus phoenicurus*. On the heath, there are breeding Dartford warbler *Sylvia undata* and Nightjar *Caprimulgus europaeus*, Meadow pipit *Anthus pratensis*, Skylark *Alauda arvensis*, Linnet *Carduelis cannabina* and Stonechat *Saxicola torquata*. Wintering Hen harrier *Circus cyaneus* are occasionally seen and have roosted on the reserve in the past. Goshawk *Accipiter gentilis* have also bred close to the reserve in recent years.

#### iii) Mammals

The notable mammal fauna includes Hazel dormouse *Muscardinus avellarinus*, Otter *Lutra lutra* and several species of bat, including Daubenton's *Myotis daubentonii*, Long-eared *Plecotus auritus*, Noctule *Nyctalus noctula*, Common pipistrelle *Pipistrellus pipistrellus* and Soprano pipistrelle *Pipistrellus pygmaeus*, Natterer's *Myotis nattereri*, Greater horseshoe *Rhinolophus ferrumequinum* and Lesser horseshoe *Rhinolophus hipposideros*. The presence of nationally the rare Barbastelle bat *Barbastellus barbastellus* was discovered during surveys carried out in 2002 (Billington 2003). There is a well established population of Roe deer *Capreolus capreolus*, Fox *Vulpes vulpes*, Grey squirrel *Sciurus caroliniensis* and Rabbit *Oryctolagus cuniculus*.

#### iv) Reptiles and amphibians

In the open heath areas Common lizard *Lacerta vivipera*, are common, and also Slow worm *Anguis fragilis* and Adder *Viperus bera*. The ponds and wetter areas provide habitat for Palmate newt *Triturus helveticus*, Common frog *Rana temporaria* and Common toads *Bufo bufo*.

#### v) Fish

Salmon occur as juveniles in the section of the River Bovey passing through the reserve, however adult numbers are restricted by a weir at Parke, which acts as a barrier to fish migration. Salmonids are also affected by over fishing and the increasing acidification of Dartmoor.

#### Communities

Wet woodland flushes (W4 *Betula pubescens* - *Molinia caerulea*) occur throughout the woodland, but especially in Wanford Wood.

The alder community (W7b *Alnus glutinosa* – *Fraxinus excelsior* – *Lysimachia nemorum*) occupies the stream valleys, where Alder and Downy birch *Betula pubescens* comprise an open canopy with scattered Rowan, Ash and Grey willow *Salix cinerea* in the understorey. Royal fern *Osmunda regalis* is locally frequent with Golden saxifrage *Chrysosplenium oppositifolium*, Lady fern *Athyrium filix-femina*, Common skullcap *Scutellaria galericulata* and the moss *Hookeria lucens*.

A wide strip of base soil in Wanford Wood supports an ash-maple community (W8d *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis*). This is a secondary community developed from an open wood pasture where ash would have been dominant. Many large ash trees remain but Sycamore *Acer pseudoplatanus* and Beech *Fagus sylvatica* have grown up to the canopy.

The oceanic oak bramble community (W10c *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus*, *Hedera helix* sub community), typical of the western side of Britain, contains Pedunculate oak as the most common species, with some Beech and Ash, over a sparse understorey. Ivy is the most distinctive feature, with occasional patches of ferns (*Dryopteris filix-mas*, *Dryopteris dilatata*), Woodruff *Galium odoratum* and Wood millet *Milium effusum* also occurring.

Another oceanic oak bramble community (W10e *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus*, *Anemone nemorosa* sub community) occurs in the more fertile valley bottoms and southern slopes of Yarner Wood and in Neadon Cleave and Water Cleave in Bovey Valley Woodlands. It is characterised by a predominance of Pendunculate oak, with occasional beech, Birch, Rowan and Ash. Holly is the principal shrub, with Bramble and Bracken abundant and, where the canopy is open Foxglove *Digitalis purpurea*.

The sessile oak-birch woodland community (W11a *Quercus petraea*-*Betula pubescens*-*Oxalis acetosella*, *Dryopteris dilatata* sub community) is quite extensive on the boulder littered floodplain of the Becka Brook, with Wood sorrel, Common dog violet, Creeping soft-grass, Hairy wood-rush and St. John's-wort present in the herb layer.

The beech-bramble community (W14 *Fagus sylvatica* – *Rubus fruticosus*) is found in a small area of beech plantation on the lower slopes of Wanford Wood.

The majority of Yarner Wood and the steep slopes of Houndtor Wood (Bovey Valley Woodlands) comprise W16b Oak/birch woodland (*Quercus* spp. – *Betula* spp. – *Deschampsia flexuosa*). The understorey consists of Birch, Rowan, Holly, and Beech, while the herb layer includes Bilberry, Heather and Wavy hair-grass *Deschampsia flexuosa*.

Compartment 13 contains mixed broadleaf-coniferous woodland, which is known as Black Wood. It was planted on open heath and gorse in 1868, and consists of Scots pine *Pinus sylvestris* and Larch *Larix decidua*, with some Corsican pine *Pinus nigra* (var. *maritime*) and Sweet chestnut *Castanea sativa*. The herb layer still shows its moorland origin, with Purple moor grass and Heather. Successive thinning has resulted in the development of a shrub layer of Birch, Pendunculate oak, Rowan, Holly and Sweet chestnut.

Coniferous woodland was planted in the 1950-60s as small stands (mainly of Douglas fir *Pseudotsuga* sp. and Sitka spruce *Picea sitchensis*) in Bovey Valley and Yarner woods, although much of this has now been clear-felled and natural regeneration allowed to take place. Mature larch (at least 90 years old) still stands in Wanford Wood.

Lowland heath (H4d *Ulex gallii* - *Agrostis curtisi*, *Scirpus cespitosus* subcommunity) is the principal vegetation on Trendlebere Down and in Compartments 31a and 31b of Yarner Wood. Dominant species are Purple moor grass, Heather, Gorse, Bracken and Cross-leaved heath, with variation dependent on soil and burning frequency.

Trendlebere Down also supports the bristle bent-bell heather sub community *Agrostis curtisii*-*Erica cinerea*, H4a. On deeper soils and adjacent to scrub and woodland the density of Bracken increases, resulting in the development of the community U20b *Pteridium aquilinum*-*Galium saxatile*, *Vaccinium myrtillus*-*Dicranum scoparium*.

Dry acid grassland exists in small quantity in Trendlebere Combe, defining the boundary between mire and heath. The *Festuca ovina*-*Agrostis capillaries*-*Galium saxatile* grassland, Typical sub-community (U4a) here supports abundant Common dog-violet with extensive Bracken, marking a transition to U20b *Pteridium aquilinum* - *Galium saxatile* community. Where this grassland exists alongside roads and is enriched beside verges, it has developed into the *Holcus lanatus*-*Trifolium repens* sub community (U4b).

The principal community in Trendlebere Combe is valley mire (M21a *Narthecium ossifragum*-*Spagnum papilloosum*, *Rhynchospora alba*-*Spagnum auriculatum* sub community), found on gently sloping ground either side of the stream in the combe. Pale butterwort *Pinguicula lusitanica* is present, with abundant *Sphagnum* spp. and Bog asphodel.

Mire vegetation (M25a *Molinia caerulea* - *Potentilla erecta*, *Erica tetralix* sub community) occurs in a small combe to the north-west of Trendlebere Combe and in compartment 32 of Yarner Wood, and consists of deep peat with tussocks of Purple moor-grass and Heather, and patches of Bog myrtle *Myrica gale*.