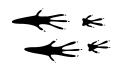


Aston Rowant National Nature Reserve

Talking Trail









Resource Pack for Participating Groups









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Welcome!

Thank you for taking part in the Aston Rowant NNR Talking Trail project! This pack is intended to help you carry out some independent research to build on the knowledge you have gained during your Discovery Days on the site. We hope that this pack will signpost you towards more detailed information about the key themes and species identified to be part of the trail. This will help you to develop your ideas for when you work with the sound and visual artists.

If you are a group leader you might choose to focus on particular themes or to adapt some of the content of this pack to suit your group's needs. Please contact project manager Alistair Will if you do this or if you have any questions. 07920180710.

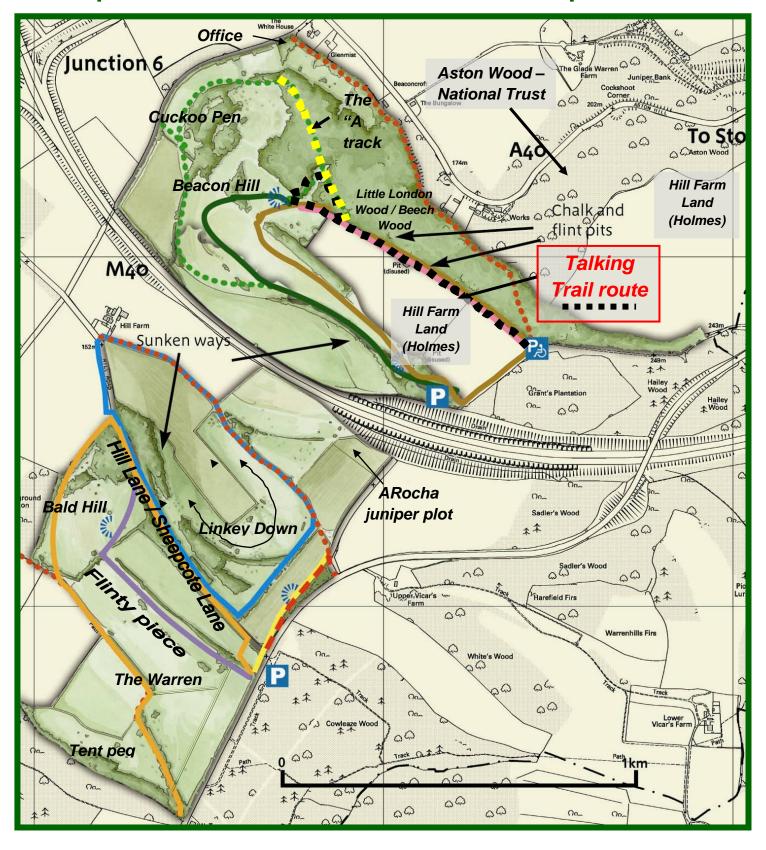
This pack was compiled by Jenny Hanwell & Mick Venters. Any questions please call 01844 351833. Woodland archaeology contributions were made by John Morris, Director of the Chiltern Woodland Project Ltd. 01844 355503.

Aston Rowant NNR Website:

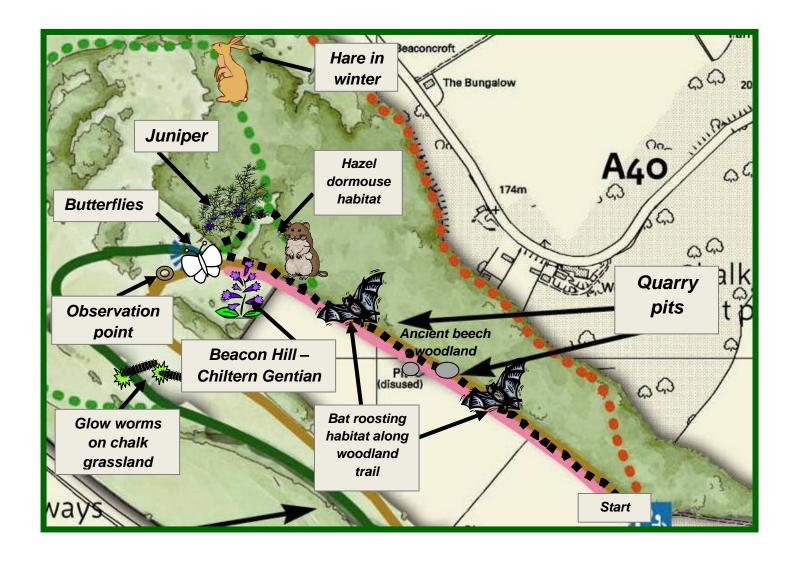
http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/nnr/1006007.aspx

Outdoor Culture Website: www.outdoorculture.com

Map - with local names as referenced in pack.



The Talking Trail - route and features



Woodland and Archaeological Features.

Woodland archaeology is the study of the historical features and remains, some of these survive as earthworks in woods. There are two types, those that relate to past management of the wood (including the trees), and those that now happen to be found preserved within woodland.

Historic woodland management features include banks and tracks, sawpits and charcoal hearths. There can also be evidence of local industrial activities such as clay working for bricks, tiles and pottery. The features on the ground can help interpret old maps and other historic documents, leading to a greater understanding of the area.

Trees are particularly long-lived so they can also tell us much about the way they have been managed as coppice stools, stubs or pollards and may be indicators of earlier land uses.

Winter is the best time to see and identify woodland features, as you need to examine them closely on the ground on foot, often this has to be off the paths. So visit from January through to May when vegetation such as bracken, brambles and nettles have died down and before the trees come into leaf. Earthworks can be harder to find in summer due to the shade of trees and development of vegetation. In autumn leaf fall can bury many subtle features. Some features can be picked out by changes in vegetation.

The remains from earlier land uses have weathered and eroded over the years, and may have been buried in places, but they survive better in woods than elsewhere and can reveal much interesting information about the history of the area. Features in woods still exist, as both major and minor earthworks, rather than as buried features in a developed landscape. It is not clear how much woodland archaeology there is, as so little has been surveyed. There is more to be discovered!

At Aston Rowant:

When describing the woodland, John Morris has divided it into four sections as approximately marked on the map below.

Section 1 covers the first part of the Talking Trail route, until just past the quarry pits, and extends right up to the boundary with National Trust land and also Hill Farm land to the northeast. This section is thought to be ancient semi-natural woodland and is characteristic of a typical Chiltern beech wood which has been thinned in the past and contains mature beech with some natural regeneration. This is also the best part of the woodland for bluebells and other woodland flora, including wood ruff, yellow archangel, wood sorrel, wood anemone, celandine and the rare violet helleborine.

This section also contains what is probably a saw pit, near to the outdoor classroom. Saw pits were in use from the 18th to the early 20th century and appear as oval depressions in the ground, usually roughly 4m long by 2m wide. Saw pits were used to cut tree trunks into planks and meant that the timber could be sawn near the where it fell to avoid having to transport the heavy trunk elsewhere. With the trunk positioned over the oval shaped hole, one man used to stand in the bottom of the pit and another used to stand on the trunk, between them they held a long double handled saw. The top sawyer was known as the top dog, and the one in the pit was the underdog. The dogs were actually the metal hooks hat

held the timbers on to a frame. The Chiltern soils were important as they did not cause the sides to collapse or the pit to fill with water, which might be one of the reasons why saw pits are quite rare in other parts of the country. Very little timber was wasted as it was more valuable that it is today.

The pits in this part of the woodland would have been used for quarrying, and are one of the most distinctive archaeological features on the reserve. On one of the pits you can clearly see the entrance and exit route via which chalk, flint and clay would have been extracted. The clay would have been used for tile making and the flint and chalk for building and road mending. The chalk might also have been used for liming fields as a soil improver. The central part of the wood, section 2 on the map is also ancient semi-natural woodland and is shown on an 1811 OS drawing. John describes this area as more varied than section 1, with areas of mature and dying beech, some old coppice trees, and areas of hazel, old yew trees and younger ash that have developed in the last 50 years. The area has some of the characteristics of Chiltern "hillwork" where locals cut firewood. The land might have been divided up into small parcels for lease, and managed by local people in their own style on a small scale.

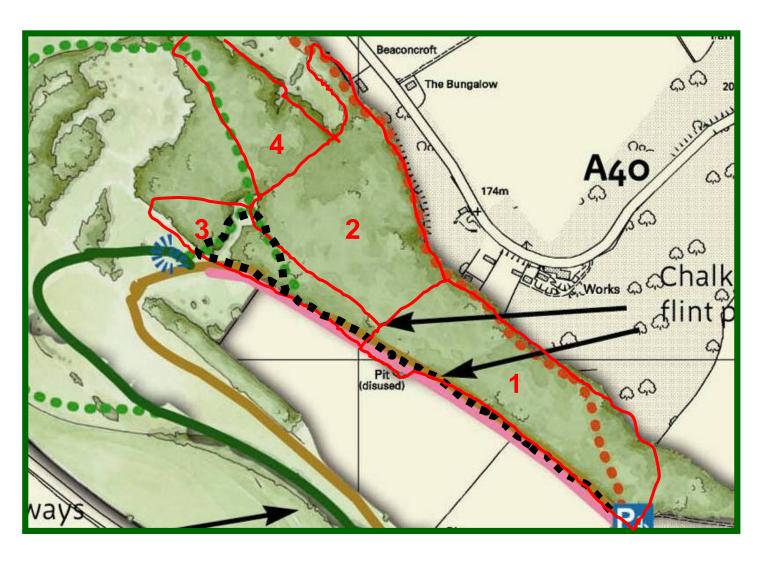
Boundary banks are also found in this section, near to the boundary with the National Trust land.

Section 3 is a more recent woodland area at the top of Beacon Hill with some large, spreading beech offering some interest, and also a distinctive whitebeam which has been recognised here: http://www.chilternsaonb.org/explore-enjoy/interactive-map.html#567. This area also contains a cluster of large beech trees which all appear to have been pollarded in the same way, there are also some juniper shrubs in this area. A fairly large area of this section was thinned and coppiced in 2010, and a single elm tree was discovered in the middle. The trail runs parallel to the edge of this area before it emerges out onto the chalk grassland, and passes a distinctive oak tree with low, moss-covered branches.

Outside of this woodland section, right on the top of Beacon Hill, you can see what was probably an observation point in World War 2. This depression in the ground is now marked by an overhanging whitebeam tree. Nearby there is another, smaller depression which is likely to have been the latrine. There is also evidence of some practice trenches on top of the hill, to the north of the observation point.

Section 4 is outside the trail route and is also more recent woodland on grassland and recent thinning has opened up patches of this grassland for wild flowers and butterflies. This area and the adjoining parts of section 2 also have some evidence of possible surface quarrying, near the "A-track". This looks like a series of unusual parallel banks along the contours on the top of the hill and also at 90 degrees to this straight down the hill.

Elsewhere on the reserve you can see hollow ways / sunken ways.



Web links:

Excellent pages from the Chiltern Woodlands Project showing what Chiltern woodlands, like that at Aston Rowant, would have looked like during different periods of history.

http://www.chilternsaonb.org/about-chilterns/woodlands/history.html

Ancient and native woodland guide - New from the Forestry Commission in 2011 is 'Managing ancient and native woodland in England', a guidance document that brings together all of current best practice into one downloadable resource: www.forestry.gov.uk/anwpracticeguide.

The UK Forestry Standard, Forestry Commission: Edinburgh (2011) The governments' approach to sustainable forest management See www.forestry.gov.uk/pdf/fcfc001.pdf/\$FILE/fcfc001.pdf

http://www.forestry.gov.uk/pdf/FCGL003.pdf/\$FILE/FCGL003.pdf - Historic Environment quidelines (2011) - includes current regulations

www.magic.gov.uk for the ancient woodland inventory

http://www.victoriacountyhistory.ac.uk/publications-projects/epe

http://www.bl.uk/onlinegallery/onlineex/ordsurvdraw/c/zoomify82304.html

- British Library has Ordnance Survey drawings this link is to Oxhey Woods

<u>http://www.heritagegateway.org.uk/Gateway/</u>
To search national and local Heritage Environment Records

Further information can be found on the English Heritage website http://www.english-heritage.org.uk/

John's excellent book, The Cultural Heritage of Chiltern Woods, is available here: http://www.chilternsaonb.org/Products/3/24/The-Cultural-Heritage-of-Chiltern-Woods.html



Juniper

Ecology:

Juniper is most common in Scotland and northern England. It is slow growing and bushes can live for 120 years. Seedlings don't always survive as they get shaded out by faster growing plants and are eaten by rabbits. Juniper is evergreen and only female plants have berries which start off green and ripen to black.

Juniper survival is also important because other creatures depend on it, including several rare moths including the juniper pug. Due to its dense foliage juniper provides shelter and a good nesting site for birds such as the goldcrest and the song thrush. Juniper berries are eaten by birds including the ring ouzel, and seeds are spread this way.

At Aston Rowant:

Juniper is a priority species in the UK Biodiversity Action Plan. Aston Rowant NNR is one of the strongholds for Juniper in southern England. Waterperry Gardens propagate young junipers from cuttings taken from the reserve and each year between 50 and 80 bushes are planted to boost the existing population, which currently numbers 1400. Juniper bushes are planted by the local community through public events or by voluntary groups such as Sonning Common Green Gym or the ARocha Chiltern Gateway Project, who take care of a large enclosure of juniper on the site. A survey was undertaken by volunteers in 2010 to map all of the junipers on site and record their condition.

History and folklore:

Juniper berries are still used to flavour gin and are used like pepper in cooking, but people have had a long connection with the plants. In the past juniper was used for a wide range of medicinal purposes and the earliest recorded use of juniper berries occurs in an Egyptian papyrus dating back to 1500 BC, in a recipe to cure tapeworm infestations in people's stomachs. The Romans too used the berries for air purification and stomach troubles, while

mediaeval herbalists used them for a wide variety of conditions including the treatment of flatulence. Juniper was also thought to kill bacteria and fight infections.

A lot has been written about Juniper in myth and folklore. The smoke of the burning juniper leaves was supposed to protect people from plague. In addition, it was claimed that it would prevent "faeries" from stealing children and was thought to have a power to repel evil spirits.

Web links for further information:

http://www.british-trees.com/treeguide/junipers/nbnsys0000004634

http://apps.kew.org/trees/?page_id=144

http://www.treesforlife.org.uk/forest/mythfolk/juniper.html

http://www.telegraph.co.uk/earth/earthnews/8896915/Return-of-gin-berry-bushes-to-England.html

http://www.whitedragon.org.uk/articles/juniper.htm



Red Kite

Ecology:

There is a lot of information available online about the Red Kite. Rather than repeating large volumes of information here, please refer to the numerous detailed web links below. They are a real success story in terms of reintroduction in the Chilterns. Between 1989 and 1994, kites from Spain were imported and released into the Chilterns by the RSPB and English Nature (now Natural England) on land neighbouring Aston Rowant NNR. Red kites started breeding in the Chilterns in 1992 and now there could be over 600 breeding pairs in the area.

At Aston Rowant:

Since the reintroduction, Aston Rowant NNR is one of the best places to see Red Kites in the Chilterns; kites are seen flying over the reserve all the time and there can be some spectacular views of them. Red kites like to nest in tall trees, which are present on the site and at least 3 pairs of red kites breed on site annually, all in beech trees.

Web links for further information:

http://www.chilternsaonb.org/about-chilterns/red-kites.html

http://www.redkites.net/

http://www.redkites.co.uk/

http://www.rspb.org.uk/wildlife/birdguide/name/r/redkite/index.aspx

The Chilterns Conservation Board has produced an excellent Red Kite Education Pack for schools. Contact Cathy Rose for a copy.



Chiltern Gentian

Ecology:

The Chiltern gentian, as its name suggests, is restricted to the Chiltern Hills in the UK and it widely spread across the AONB. It can be found more widely in calcareous sites in central Europe, its scientific name being *Gentianella germanica*. The Chiltern Gentian is the county flower of Buckinghamshire.

The Chiltern gentian does not grow everywhere in the Chilterns and is a good indicator of the best chalk grasslands. Where it is found, it can be very numerous, and is found in very dense colonies of 100-1000 plants. Chiltern Gentian is nationally scarce and is currently found on 88 sites in England. It has shown a decline since the 1940s due to agricultural improvements including ploughing, and development of scrub woodland.

The Chiltern gentian is often confused with the autumn gentian, which is often found with it. The autumn gentian is smaller and less bushy and often hybridises with the Chiltern gentian. The easiest way to distinguish a Chiltern gentian is by measuring it, the flower, measured from the bottom is an inch or more in length.

At Aston Rowant:

Chiltern gentians are doing well at Aston Rowant NNR and are found in their thousands. The best places to see them are Flinty piece and Beacon Hill in August and September, where their dried out remains can be spotted for many months afterwards, even into the following year.

The Chiltern gentian is not grazed by the rabbits, deer or sheep thanks to the fact that it contains a bitter substance.

History and folklore:

The bitter roots of the gentians were crushed and used as a purgative in medieval times, due the bitter substance contained within them. They were also used as an antidote to poison.

Web links for further information:

Most web based information is brief or largely photographic but some might be interested in this detailed scientific report on the distribution and current status of the species.

http://www.watsonia.org.uk/25_4_McVeighGentianella.pdf



Frog orchid

(Also known as long-bracted green orchid)

Ecology:

In southern England, the frog orchid flowers June-August on unimproved, short grazed chalk grassland. It is very unusual in that its green flowers look a little frog-like when you look closely due to the petals and upper sepals forming a greenish hood. The photo below shows how the flowers could be described as looking like a leaping frog, but it really depends on your imagination! The flowers have been reported to be very faintly honey scented.

At Aston Rowant:

Frog orchids are nationally scarce but are widespread across southern chalk downland and on northern upland pastures. Despite this they are locally common in certain locations, reaching good numbers. They do well at Aston Rowant NNR and continue to due to careful management of the chalk grassland. They are found in their hundreds at the Bald Hill end of Flinty Piece, and also on Beacon Hill. However, most people will never see them, given their colouring and also their size. Frog orchids can reach 20cm tall, but on Aston Rowant they are normally 5-10cm due to shallow soils and exposed conditions. Once you see your first one you will find you are surrounded by them.

History: In some parts of the country frog orchid habitats were ploughed over when tractors took over from horse power. The frog orchid is sometimes associated with ancient ground workings such as quarries, and even battlefields.

Web links for further information: There is very little further information available on this easily missed orchid. Most online references seem to be by those striving for the perfect photo of this unusual flower.

http://www.wildflowerfinder.org.uk/Flowers/O/Orchid(Frog)/Orchid(Frog).htm

Interestingly someone has written "Song of the Frog Orchid!" http://www.goodmusicpublishing.co.uk/info/default.aspx?id=GM075



Hazel Dormouse

Ecology:

The hazel dormouse has disappeared from half its former range in England and is now found mainly in the south, with tiny populations in Northumberland and Cumbria. Dormice spend up to half the year hibernating. During the summer, they weave compact nests in cavities or low shrubs and raise litters of up to eight babies. No accurate figures exist although it is estimated that there are about 45,000 dormice in England and Wales.

Dormice are active between May and October, but they are rare and nocturnal and so rarely seen. They are most likely to be found in broadleaved woodland in southern England. Conservation efforts for the dormouse are focused on improving hedgerow and woodland management, to provide the best habitat, and connecting small woods together, to allow dormice to move across the landscape. There have also been several successful reintroductions to lost parts of its range, with the first one (1993) still going strong.

At Aston Rowant:

50+ Dormouse boxes are erected and monitored annually, at a range of locations on the site, but even this does not give us an accurate reflection of the population. The last sighting of a dormouse was a juvenile male in a nest box, in the area owned by Thames Water on the south side of the reserve. Dormouse next boxes look a little like bird boxes, but they have the entrance hole on the side facing the tree trunk.

Web links for further information:

http://www.dormice.org/

http://www.ptes.org/dormousemonitoring/

http://www.bbc.co.uk/nature/life/Hazel Dormouse

http://io9.com/5879556/snoring-dormouse-is-so-adorable-your-head-will-explode

http://88.208.205.92/index.php?option=com_content&view=article&id=217&Itemid=250



Glow worm

Ecology:

Robin Scagell leads glow worm walks on the reserve, and has surveyed the site for glow worms for many years. This is his website and it tells you literally everything about glow worms! http://www.glowworms.org.uk/

At Aston Rowant NNR:

Glow worms are not a protected species but here they feature as part of the extremely diverse assemblage of invertebrates associated with the chalk grassland. This invertebrate diversity is recognised as a specific designated feature of the SSSI. Glow worms can be seen across the reserve in July, especially on the slopes of Beacon Hill and the fields at the base of the hill, running parallel with the Ridgeway. Glow worms feed on small snails, and these are found in abundance on the reserve, especially the brown lipped and heath snail.

Other Web links for further information:

http://www.uksafari.com/glowworms.htm

This informative video made by a film student in 2011 includes footage from the reserve http://vimeo.com/31952006



Bats – noctule, pipistrelle, brown long eared.

Ecology:

There are 18 species of bats resident in the UK - that's more than a quarter of our mammal species. 3 species are known to be present on Aston Rowant NNR from records, but there have been no recent surveys.

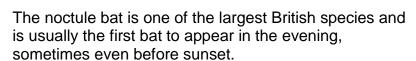
Bat Conservation has produced a comprehensive fact sheets on these bat species, which can be found here, along with recordings of each species:

http://www.bats.org.uk/pages/uk_bat_species.html

Top facts from Bat Conservation:



The pipistrelle is Britain's (and Aston Rowant's) most common bat, it is only 4cm long and weighs about 5 grams - less than a 2p coin, yet it can eat up to 3,000 insects in a night.







A brown long-eared bat's ears are nearly as long as the body but not always obvious: when at rest they curl their ears back like rams' horns, or tuck them away completely under their wings leaving only the pointed inner lobe of the ear visible.

At Aston Rowant:

The beech woodland where the trail is set provides a good habitat for bats as there are plenty of roosting opportunities in the trees. Intensive management and loss of suitable trees for roosting is a major factor in the decline of some bat species so the woods at Aston Rowant are managed with this in mind. Standing deadwood with cracks and holes is left to provide summer bat roosts, as far as we know bats are hunting and roosting but not breeding here. The woods border a field that is used for cattle grazing and this woodland edge habitat offers good opportunities for the bats to hunt for insects, which are also drawn in by cow dung.

3 species have been recorded on the reserve. The common pipistrelle, the brown longeared bat and the noctule. The latter two are BAP (biodiversity action plan) species.

History and folklore:

There are many myths and misconceptions relating to bats and much has been written about them in folklore. Usually around vampires, when asked to name a species of bat this is the first that children come up with, although most will never see one, they do not live in the UK (or even Transylvania) and they only rarely feed on human blood. However many people still think that bats suck your blood and get stuck in your hair!

http://www.batcon.org/index.php/media-and-info/bats-archives.html?task=viewArticle&magArticleID=626

http://www.bu.edu/cecb/bats/bat-facts-and-folklore/#Myths

http://www.leevalleybats.org.uk/bats.htm

Web links for further information:

Download the Bats for All resource pack:

http://www.bats.org.uk/pages/batsforall.html

This interactive map is a fun way to learn more about bat habitats http://www.bats.org.uk/pages/bat trail.html

http://www.bbc.co.uk/nature/life/Common Noctule



Silver-spotted skipper

Ecology:

Butterfly conservation have created an excellent fact sheet: http://www.butterflyconservation.org/uploads/silver-spotted_skipper(1).pdf

It begins with this useful overall description:

This rare skipper is restricted to chalk downs in southern England where it can be seen darting low over short turf, stopping frequently to bask on bare ground or feed on flowers such as Dwarf Thistle. It can be distinguished by the numerous silver-white spots on the undersides of the hind wings, which can be seen quite easily when it rests with wings in a characteristic 'half-open' posture. The species has declined rapidly over the last 50 years but has re-expanded substantially since 1980.

At Aston Rowant:

The Silver Spotted Skipper is a UK BAP (Biodiversity Action Plan) Priority Species and so is of primary conservation concern at Aston Rowant NNR. The butterfly is surveyed annually during August and the results reported to Butterfly Conservation, numbers have steadily increased over the last 30 years and the species is doing well on this site. The skipper benefits from the scrapes left by rabbits at Aston Rowant, and the impact of grazing animals, which creates conditions suitable for egg laying. A careful grazing regime is in place on the reserve to create ideal conditions for the butterflies.

The best place to see Silver Spotted Skipper is the southern slopes of Bald Hill, the chalk down-land with steep slopes, bare patches and short turf suit the species well. Sheeps fescue, a type of grass, is the sole food plant for the Silver Spotted Skipper, and it can be found across the site.

History and folklore:

Web links for further information:

http://www.ukbutterflies.co.uk/species.php?species=comma



Chalk-hill blue

At Aston Rowant:

Butterflies are surveyed throughout the season and the results are sent to Butterfly Conservation. Chalkhill blue is faring rather well on the NNR at present, numbers having risen steadily over the last thirty years. Volunteer efforts are currently being put into mapping the distribution of horseshoe vetch, the food plant of the chalkhill blue. Like the silver-spotted skipper, the best area of the site for the chalkhill blue is the southern slopes of Bald Hill.

Some thoughts and ideas from Geoff Jones and the Aston Rowant NNR wildlife survey volunteers, linking the chalkhill blue with the history of the site, through the food plant of the caterpillar:

"The caterpillar of this butterfly is dependent on the horseshoe vetch plant. Most specimens of this plant are found on the south and south-west facing slopes of sunken ways.

Sunken ways were routes used by cattle drovers who took cattle from the good grazing land in the midlands, even Scotland, to places of high population, such as London. Their feet eroded the soft chalk creating deep sunken ways. A number of spectacular examples of these are found at the reserve.

There is still some uncertainty over the origins of sunken ways. As yet, there is no agreement when these routes were first used. More evidence exists on the early history of the famous route that follows the chalk scarp, which passes through Lewknor, the Icknield Way. The name Icknield was first recorded in the early medieval period. From the first written records in the 12th C. they were convinced that the route was an ancient one. Currently, the view is that the route was definitely in existence in Saxon times (views are divided over it being Roman) and it definitely ran from Princes Risborough in the east to Wallington in the west. Unfortunately, there is no good evidence that it is a prehistoric trackway or a trackway that extended further east into East Anglia or further west than Wallington. It may not even have been a single track in the Chilterns and there is a suggestion that there was a 'higher' and 'lower' way between Ivinghoe and Lewknor.

The Icknield Way and Aston Rowant's sunken ways were being used at the same time, so the scarp above Lewknor (Aston Rowant) was an important 'crossroads' for droving, trade and social mobility for many centuries.

Nobody is in doubt that the sunken ways were used by cattle drovers who took large herds of cattle south to feed populations there, such as London, over several or many centuries. Not only did the cattle produce the distinct landscape feature of the sunken way, in doing so they provided a habitat for species that require a hot climate, more like southern europe than the UK. This is true of the horsehoe vetch, though quite common in southern europe, here in the UK it is right on the edge of its geographical limit and is pretty much confined to south to south-west slopes in chalk grassland, especially in sunken ways, where it stands a chance of getting the long, hot summers needed to flower and set seed, which is far from guaranteed. The flowers are often grazed before seed can be produced and, if the summer is an old-style, British summer the seed does not have time to fully ripen before winter. Luckily the plants are quite long-lived and are certainly capable of surviving for 40 years and possibly much longer.

The plant has another big problem. Its seeds are heavy and it is not at all clear how they are spread around. There is plenty of modern evidence that it does not spread – a problem for the conservation of some butterflies, such as the chalk hill blue. But, the drovers may have played a role. It is suggested that the seeds of the horseshoe vetch can be carried in mud on the feet of animals. Did the drover's cattle distribute it? We might need to thank the drovers for the chalk hill blue we now have on the reserve."

Web links for further information:

http://www.butterfly-conservation.org/Butterfly/32/Butterfly.html?ButterflyId=74



Brown hare

At Aston Rowant:

Due to historic problems with hare coursing, and also the short turf, hare are not common at Aston Rowant. They are however of conservation importance and are a BAP (Biodiversity Action Plan species). When they are seen, it is usually in winter when they inhabit parts of the woodland, particularly in the Beacon hill area.

History and folklore:

http://www.endicott-studio.com/rdrm/rrRabbits.html

Web links for further information:

http://www.mammal.org.uk/index.php?option=com_content&id=224

http://www.bbc.co.uk/nature/life/European_Hare

http://www.hare-preservation-trust.co.uk/

http://www.wildlifetrusts.org/species/brown-hare



Ring Ouzel

Ecology:

Slightly smaller and slimmer than a blackbird - male ring ouzels are particularly distinctive with their black plumage with a pale wing panel and striking white breast band. The ring ouzel is primarily a bird of the uplands, where it breeds mainly in steep sided valleys, crags and gullies, from near sea level in the far north of Scotland up to 1,200m in the Cairngorms. (RSPB)

At Aston Rowant:

Ring ouzel visit Aston Rowant annually in Spring, on their way to northern England, Scotland and Scandinavia for the summer. There are usually 6-12 sightings year as the birds stop off at the reserve, usually on Linkey Down. Ring Ouzel like to eat juniper berries and therefore the conservation of juniper also benefits this bird.

Web links for further information:

http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/ringouzelfeature_aspx

http://www.rspb.org.uk/wildlife/birdguide/name/r/ringouzel/index.aspx

http://www.ringouzel.info/

http://blx1.bto.org/birdfacts/results/bob11860.htm

http://www.birdsofbritain.co.uk/bird-guide/ring-ouzel.asp