

Advisory Note for the Restoration of Ringswell Common

This note includes details on the restoration of Ringswell Common, a Site of Nature Conservation Interest (SNCI) located within the south-east of the historic market town of Marshfield, the Cotswolds Area of Outstanding Natural Beauty (AONB), South Glos, central grid reference: ST 78428 73401 see figure 1.

This advisory note was produced by Martin Smith BSc hon (Grad CIEEM) who is a qualified ecologist with class 2 bat and dormouse licences, on behalf of Martyn Plummer who holds the grazing rights at Ringswell Common.

The note provides information regarding the proposed restoration of grassland to the west of the common (see figure 2) following consultation with Laurie McIntyre from Emorsgate Seeds.

The main aims of this note include the restoration of a calcareous grassland bank and the re-introduction of grazing into the common. Additionally, wood pasture will be created to the east and south, and a section of grassland will be enhanced to the west of the site. This note plans to retain the ecological connectivity, increase the habitat diversity and biodiversity of the common, and promote the sustainable grazing of the common.

Aims and Objectives

- Encourage and promote sustainable farming;
- Increase biodiversity;
- Provide good condition habitats with vegetative structure to Increase carbon sequestration;
- Restore the south-west facing calcareous bank;
- Open-up areas of grassland and woodland for low intensity grazing/browsing;
- Manage woodland and promote shrub layer growth within woodland sections;
- Retain and improve ecological connectivity;
- Provide a mosaic of habitats for a range of wildlife;
- Enable cattle grazing across the site and allow cattle to browse within woodland compartments;
- Provide measures to limit the impact of the works on wildlife and environment; and,
- Provide a safe, welcoming, aesthetic place for the public.

Site Location

The common was located within the Parish of Marshfield, within the Council of South Gloucestershire, and within the Cotswolds AONB. The common is approximately 1.5km east of St Catherine's Site of Special Scientific Interest (SSSI) and within 6km of Bath and Bradford on Avon Special Area of Conservation (SAC).

Figure 1 Ringswell Common at 1,500 scale



Habitat Description

The common was comprised of two sections: the northern section which included all habitats to the north of the Doncombe Brook where it crosses the common and the southern section which runs to the south of the Doncombe. The northern section was split by a track which runs through the centre of the common from north to south. This includes a section of permanent pasture to the west and an area of woodland and scrub to the east.

The common was bordered by an avenue of beech trees to the east which provided a link to the north and to the south and east linking the site to the Ancient Semi-Natural Woodland sites of Marshfield and Cloud Woods, the north-west was bordered by the Doncombe Brook, the south was bordered by permanent pasture, and the north was bordered by the farm track which leads to Pitt farm and residential dwellings. The surrounding landscape was dominated by agricultural land; predominantly arable to the north and pastoral to the south. There were several sections of scrub within the wider environment including a scrub belt which leads to the south-east from the common.

North-Western Section (permanent pasture)

The north-western section (Photo 1 and 2) was comprised of semi-improved grassland which was dominated by agricultural grasses with low herbaceous cover. There were a few scattered ash and an apple tree present and an area of damp grassland adjacent to the Doncombe Brook.



Photo 1: North-west section



Photo 2: North-west section

North-Eastern Section (woodland bank)

The north-eastern section was located on a south-west facing bank which has scrubbed over since it was previously grazed (probably in the 1980's). The bank was comprised of woodland which was dominated by young ash trees with a shrub layer of hawthorn and blackthorn. There were several sections of bramble scrub within the centre of the northern-eastern section and a section of remnant grassland which has not scrubbed over (Photo 3). The grassland section was comprised of tussocky grassland which was characteristic of unimproved species-rich calcareous grassland. common knapweed, agrimony, yarrow, ox-eye daisy, tormentil, wild carrot, ribwort plantain and Woolly Thistle were present, indicating the potential for successful grassland restoration across more of the common.

The woodland to the east of the common was dominated by young ash trees, hawthorn, and blackthorn. There was some field maple and a few apple trees with one located adjacent to the track. The woodland was dense with a closed canopy with low light levels penetrating the woodland floor.

Subsequently, there was very little ground cover within this section. Species present included a few scattered hart- tongue fern, celandine, and herb Robert. The woodland was assessed to be species poor botanically.



Photo 3: Remnant grassland adjacent to track



Photo 4: Dense woodland left at top of common

Southern section (woodland)

The habitat to the south of the Doncombe Brook was comprised of a wooded track with steep banks, scrub, and several trees. There are a few sections of grass within this section comprised of false oat grass. Additionally, there is abundant scrub comprised of blackthorn, hawthorn, and bramble. This section will be retained, and only limited habitat works are proposed. The southern section will be opened for grazing.



Photo 5: southern section crosses the brook



Photo 6: wooded banks to the south of the site

Why Restore the Common

Sustainable agriculture has a low impact on the environment, provides opportunities to enhance the environment for wildlife, and provides optimal habitat and welfare standards for livestock.

Calcareous grassland has reduced significantly in its range and abundance, especially during the second half of the 20th century and is subsequently a rare habitat. Much of this habitat has been converted due to the intensification of farming following the Agriculture Act 1947. The loss of this habitat has had a significant impact botanical diversity within grassland; for example, calcareous grasslands are species rich and can have over forty botanical species per square metre of turf. The loss of this habitat has a knock-on effect on wildlife and has detrimentally impacted species such as reptiles, insects, bats, and farmland birds. Alternatively, scrub can be common and widespread within the environment and provides a lower value habitat for wildlife and a lower botanical diversity than calcareous grassland.

The woodland to the south of the site is species poor with a closed canopy shading the woodland floor. It was recommended to thin this section and to allow cattle to graze within this area. Cattle browsing and grazing within this section will control the regeneration of scrub, enrich the soil with dung. This would effectively increase the insect abundance within the woodland which in turn would provide a food source for species such as birds, bats, and reptiles. Subsequently, wood pasture is of high conservation value and was assessed to provide an increase in terms of biodiversity on the common.

The project will necessitate the removal of scrub to restore the calcareous grassland bank. However, it was recommended to retain sections of scrub across the site and to retain a woodland belt to the north east of the site as well as large sections of scrub within the area to the south of the site. Scrub is an important foraging and nesting source for a range of species including birds and is an integral part of the plan to retain and encourage the growth of scrub within the post restoration management plan.

Wildlife

The common was assessed to provide habitats for a wide range of species. This includes hedgehog, birds, reptiles, invertebrates, amphibians, small mammals, and bats.

Hedgehog

Baseline

The Common was located approximately 100m from the town of Marshfield which was comprised of a mixture of habitats such as amenity grassland, residential gardens, hedgerows, woodland copses. These habitats provide suitable and foraging habitats for hedgehog.

The common itself was comprised of woodland grassland and scrub and was assessed to be well connected to the wider environment. It was assessed that the common could provide potential foraging and resting habitat for hedgehog.

Post Restoration

The works on the common will increase the botanical diversity of the grassland which will provide better foraging habitats for hedgehog. Additionally, sections of the woodland will be retained and enhanced which will provide ongoing connectivity for hedgehogs. Overall, the proposed works to the common are likely to provide increased habitat value to hedgehog through improving connectivity and foraging opportunities.

Birds

Baseline

The northern-eastern section of the common was comprised of woodland and scrub which was assessed to provide breeding habitats for woodland birds. The site has the potential to support red listed birds of conservation concern such as the lesser spotted woodpecker, song thrush, bullfinches, and dunnocks. The hawthorn and blackthorn were assessed to provide a suitable foraging source for winter thrushes, and it was considered that the woodland and scrub provides suitable habitat for migratory birds. The western section of the Common was comprised of species poor grassland which provides habitat for common and widespread species of bird.

Post Restoration

The proposed restoration will see the removal a section of bramble and blackthorn scrub to restore the grassland bank. Although, some sections of scrub will decrease the amount of foraging and nesting habitat on site for woodland birds the plans do include the retention of the majority of the woodland and scrub which will maintain habitat for species such as winter thrushes.

The restoration of the grassland will provide suitable habitat for small mammals which will in turn, provide a food source for birds of prey. The restoration of the western section of grass which provide habitat for invertebrate that birds feed upon. Scrub and woodland will be retained and enhanced to retain a woodland buffer to the north and east. Although, the works will see a significant decrease in terms of potential nesting and foraging habitat for woodland birds it was considered that the restoration works could provide a mosaic of works that could benefit other species such as barn owl, kestrel, and farmland birds.

Reptiles

Baseline

The eastern section of the site was comprised of woodland with very little ground cover providing poor habitats for reptiles. However, there were several clearings with scattered scrub which could provide suitable foraging habitats for species such as slow worm. The southern section was located adjacent to the Doncombe Brook which was assessed to provide suitable foraging habitat for species such as grass snake.

Post Restoration

The creation of a south-west facing grassland bank will provide a grassland, with high levels of sunlight would increase basking spots for reptiles. Additionally, the grassland would provide abundant small mammals which are a food source for reptiles such as adder. Scrubby sections such as bramble should be retained to provide shelter for reptiles. It was assessed that the works on the Common will provide a significant increase regarding habitat suitability for reptiles.

Invertebrates

Baseline

The Common was comprised of a range of habitats which provide a range of habitats for invertebrates. The Doncombe Brook to the south-west was assessed to provide suitable habitat for riparian insects and in turn, for the species that feed upon them. The woodland to the east of the common was species poor and provided low potential habitats for insects. There was a small section of grassland located within the centre of the common which was comprised of tussocky grassland and herbaceous plants which provide a nectar source for insects such as bees and butterflies.

Post Restoration

The works to the west of the common include sowing a St Catherine's seed mix which will increase the botanical species richness which will in turn provide a food source for insects. Removing the scrub to the east and restoring the grassland which also provide a key habitat for insects including pollinators such as butterflies, moths, and bees. The creation of wood pasture is also a valuable habitat for insects provided dead wood for saproxylic insects and dung for detritivores. Planting more apple trees would also provide better habitats for insects and pollinators. Overall, it was assessed that the restoration would increase the habitat suitability for invertebrates and for the species that feed upon them.

Amphibians

Baseline

The clearing to the north-east of the common was assessed to provide some terrestrial habitat for species such as toad. The southern section was comprised of species poor grassland which provides low potential habitats for amphibians. The riparian habitats of the Doncombe Brook and the adjacent terrestrial habitats were assessed to provide some habitats for species such as common frog and the common toad.

Post Restoration

The restoration of grassland could provide terrestrial habitat for newts and toads. An additional enhancement for amphibians could include the creation of log piles within the western section of the common adjacent to the Doncombe Brook.

Small Mammals

Baseline

The remnant grassland to the east was assessed to provide optimal habitat for species such as field vole, and shrews which provide a suitable food source for wildlife such as birds of prey such as barn owls. The woodland and scrub were also assessed to provide habitat potential for species such as wood mouse and yellow-necked mouse. The woodland was species poor with little understorey to support species such as dormouse. The grassland to the west was assessed to provide some potential habitats for small mammals.

Post Restoration

The restoration of the grassland on the eastern bank was assessed to provide a significant increase in habitat suitability for small mammals and for the species that prey on them. The woodland belt to the north will also retain connectivity for arboreal species such as the wood mouse.

Bats

Baseline

The habitats on the common were comprised of a mixture of grassland, woodland, and the riparian habitats of the Doncombe Brook. The woodland to the east of the site was young which provided limited features for roosting bats. Overall, it was assessed that the Common provided suitable foraging habitats for a range of bat species including the rarer horseshoe bats.

Post Restoration

Restoring the eastern section of the common to cattle grazed grassland will improve foraging opportunities for bats. Especially, horseshoe bats which depend upon dung flies which feed upon cow dung. The restoration of the grassland will also increase the habitat structure on site and the diversity of habitats. This will increase the invertebrate abundance onsite which will provide a food source for bats.

Summary

The restoration of the common will see a reduction in scrub habitat which has encroached on the grassland since grazing has ceased on the site. The scrub is an important feature for wildlife at the site level. However, the majority of the scrub habitat will be retained in situ with no change.

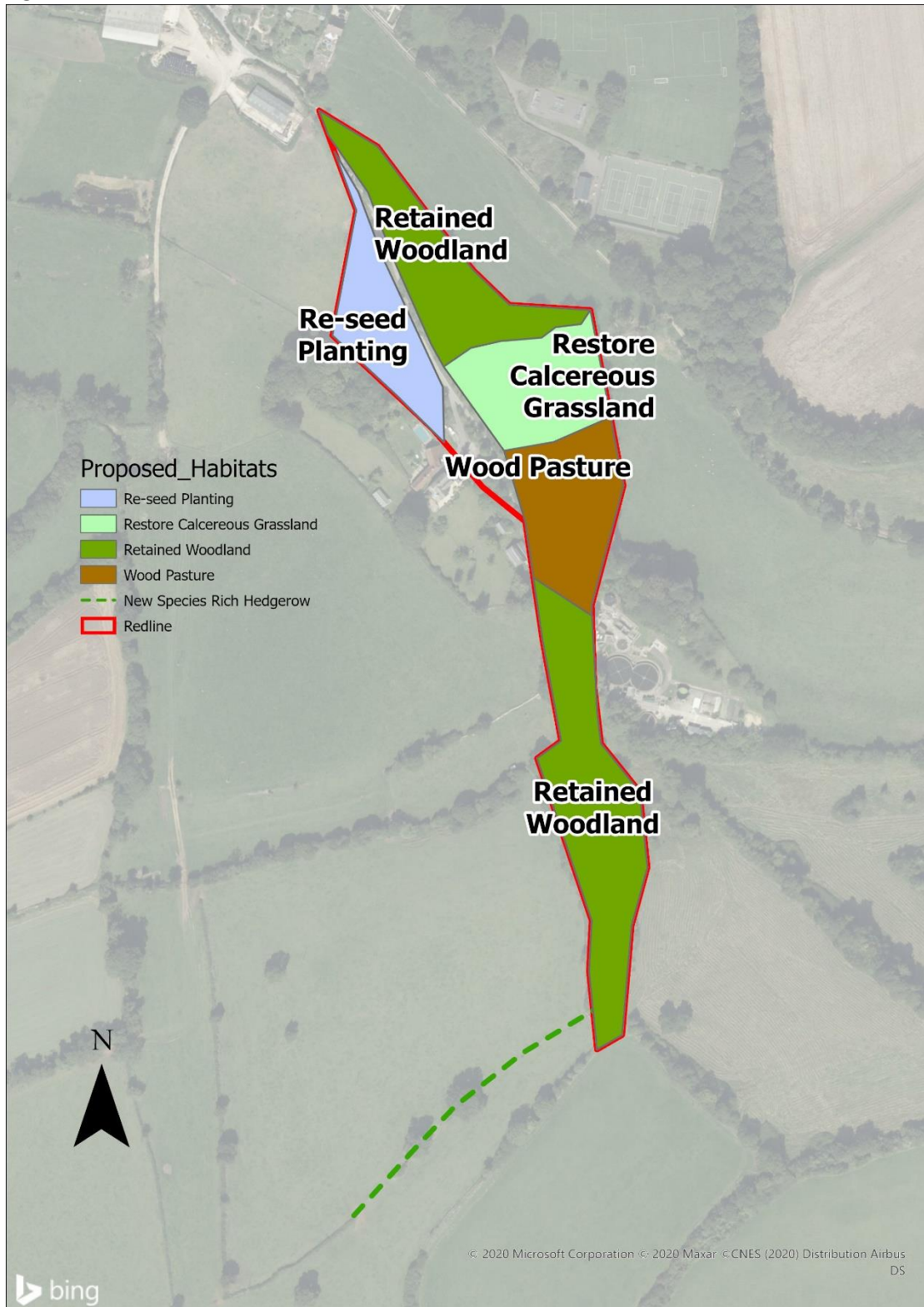
It was assessed that the enhancement and restoration of grassland alongside the incorporation of wood pasture would provide benefits for a range of species notable invertebrates, bats, and birds.

Overall, sections of scrub will be removed from areas where the topography offers value towards other habitats, and some scrub will be retained on the steeper areas. There will be a small net loss of scrub at the site, but this is a common habitat type that is valuable at site level only. The loss of the onsite scrub will allow the restoration of other higher value habitat types (calcareous grassland) at the site for the benefit of biodiversity.

Restoration

The plan includes the restoration of a calcareous grassland bank whilst retaining two sections of woodland to the north and south of the site. The western section should include fruit tree planting and potential reseeding the area to improve the grassland. A hedgerow will be planted to the south of the common to connect the common to the wider environment.

Figure 2 Restoration Plan



Recommendations

The following recommendations relate to the restoration plan key displayed in figure 2 and are detailed below.

Reseed and planting (north-west)

The existing grassland to the west of the site was comprised of species poor grassland with scattered trees. After consultation with Laurie McIntyre from Emorsgate seed it was recommended to sow a species rich grassland mix following the methodology.

Grassland

- Cut and remove vegetation in late summer;
- Scarify hard to create 50% bare soil (ideally when the ground is dry);
- Sow at 2g/m² in September using a complete meadow mixture (St. Catherine's mixture was recommended);
- Firm in to achieve good seed/soil contact;
- Graze with livestock Autumn until the end of March; and,
- Leave to grow until it is cut again in late summer (when it is cut, it is important that the vegetation is also removed), continue management with aftermath grazing through until March.

It was also recommended to plant six fruit trees on vigorous root stock and two English oak trees within this section.

Fruit trees

Guidance was provided within the Natural England Technical Information Note (Natural England, 2020).

Trees should be of M25 vigorous root stock and preferably from local varieties; available from: <http://www.adamsappletrees.co.uk/>

- five trees should be planted at traditional spacings. Within existing orchards these should follow and reinforce the original planting pattern.
- Traditional standard dessert and cider apple orchards usually have a planting density of between 100-150 trees per ha with 8-10 m between rows and 7-9 m between trees within the rows.
- Tree guards should be used to ensure that the root avoid excessive shaking before the roots are established.
- Wooden fencing or hazel hurdles will be installed to prevent cattle or deer damaging the trees

Oak trees

Two bareroot oak trees will be planted within this section.

- Wooden fencing or hazel hurdles will be installed to prevent cattle or deer damaging the trees
- Trees will be planted in the winter months;
- Stakes and ties will be used if necessary.

Restore Calcareous Grassland (east)

A section of scrub including bramble, hawthorn, and blackthorn will be removed to enable the restoration of calcareous grassland within the centre of the site. This will include most of the bank to the east of the track and a section within the centre of the site to the north of the patch of remnant grassland.

Restoration

- Remove scrub and remove trees in the winter, outside of the breeding bird season (March – September);
- Remove all ash trees as recommended by Common Biodiversity officer;
- Retain selected trees such as apple, oak, beech, and elm where feasible or practical to do so;
- Maintain a woodland link to the east of the site; and,
- The only trees being removed will be hawthorn, blackthorn, and ash.

Management

- Low density cattle grazing in the spring and autumn (<5 head);
- Cattle may need to be excluded until the grasses have taken hold;
- Control blackthorn and bramble encroachment on bank.

Wood Pasture

A section of woodland to the south-east of the site was comprised of ash, blackthorn, and hawthorn. Subsequently, this section was heavily shaded with little ground cover providing low potential habitats for wildlife.

- Remove approximately 50% of the trees including all ash trees as recommended by the common Biodiversity officer to enable light to reach the woodland floor;
- Retain trees such as apple and field maple;
- Encourage grasses to take hold within this section;
- Retain some deadwood onsite by creating wood piles and dead hedging;
- The grass may take a while to establish within this section and the cattle may have to be excluded until the roots take hold; and,
- Cattle should graze and browse within this section at low stocking rates.

Retained Woodland

This includes the section of the common which leads to the south of the Doncombe Brook and the northern section towards Pitt Farm. This section will be retained with no habitats works recommended.

- Low density cattle grazing in the spring and autumn;
- Ensure section doesn't become poached;
- Promote scrub growth and dead wood within section; and,
- Sections may need to be opened up to enable cattle to browse within section.

Creation of Species Rich Hedgerow

250 trees will be ordered from I dig to create a species rich hedgerow to connect the southern edge of the common with an existing hedgerow south-west, see figure 2. This section includes a typical management cycle for hedgerows.

Creation

- The hedgerows will be planted when the trees are dormant between November and March;
- Vegetation at the ground level will be cleared before the hedgerow is planted;
- The hedgerow will be planted with bare root stock and will include species of local provenance such as 50% hawthorn, 25% blackthorn, 15% field maple, 2% privet, 2% bird cherry, 2% sweet cherry, 2% guelder rose, 1% crab apple, and 1% holly;
- The hedgerow should be planted in zig zag lines at two-foot intervals;
- Tree guards should be used where necessary; and,
- electric fencing will be installed either side of the hedge to prevent grazing from cattle or sheep.

Management Cycle (20 Year)

- The hedgerow should be frequently trimmed within the first 5 years to ensure dense structure;
- The hedgerow should then be cut on rotation once every three years on alternate sides (left/top/right) to ensure high fruit production; and,
- When required the hedgerow will be allowed to grow up for rejuvenation before laying or coppicing to repeat the cycle.

Restoration/Management

- All gaps within the hedgerows will be planted with whips of native woody species such as hawthorn, blackthorn, field maple, privet, and hazel;
- The hedgerows will be maintained with high basal density – this will be achieved by allowing bramble and other scrub species to grow at the base of the hedgerows. ‘Neat’ hedgerows will be avoided. This will provide foraging and nesting habitat for birds, hedgehogs, and invertebrates;
- Infrequent cutting of hedgerows to allow fruit and nut production which will benefit a wide range of faunal species. Cutting will be undertaken on a three-year rotation; and,
- The hedgerow will be cut between January – February to avoid impacts on wildlife and to ensure high fruit production.

General Recommendations

- All works that may impact nesting birds such as tree and scrub clearance must be undertaken within the winter outside of the nesting bird season (March – September);
- Keep fires and paths to a minimum;
- All trees will be removed with hand tools (chainsaws) and the scrub will be removed with tractor;
- Cattle should be grazed at a low stocking rate and their impacts should be monitored to ensure that over grazing does not impact the common;
- Temporary electric fencing should be erected along the stream within the western field to mitigate the impacts of cattle on the Doncombe stream;
- Horse grazing would also compliment the grazing regime at a low density <2head;
- Sheep should not be grazed on the common;
- All fence posts should be removed;
- Open access should be encouraged;
- Native cattle are docile and hardy and are therefore ideal for conservation grazing projects. Native suitable breeds include Aberdeen angus, Hereford, British white, belted Galloway, longhorn, redpoll, or Dexter;
- Works will be undertaken in a cold spell and within dry weather (if possible) to mitigate the impacts of erosion on the Doncombe Brook;

Further info

Buglife, calcareous grassland - <https://www.buglife.org.uk/resources/habitat-management/lowland-calcareous-grassland/>

Emorsgate seeds - <https://wildseed.co.uk/>

Grazing animal Project - <https://www.rbst.org.uk/gap-information>

National Trust conservation grazing - <https://www.nationaltrust.org.uk/woolbeding-countryside/features/conservation-grazing>

Natural England (2012) *Carbon storage by habitat: Review of the evidence of the impacts of management decisions and condition of carbon stores and source*. Available from: <http://publications.naturalengland.org.uk/publication/1412347>

Rodborough and Minchinhampton commons - <https://www.nationaltrust.org.uk/minchinhampton-and-rodborough-commons/features/restoring-grasslands>

Woodland Trust Grazing within woodland - <https://www.woodlandtrust.org.uk/media/1824/wood-wise-woodland-conservation-grazing.pdf>