ECOLOGICAL APPRAISAL

THE TYNING FRESHFORD BRADFORD ON AVON WILTSHIRE



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Client:

Sue Wingrove For **Freshford Parish Council** Survey date: 3 July 2015 Project Ecologist: Jan Freeborn Contract: 595-15

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1 Introduction

It is understood that the future management of the site is under discussion. For this reason, a further ecological appraisal of the site has been requested, together with suggestions for potential future management options. The site had previously been surveyed on 12 October 2012 when proposals for improved public access were being considered.

2 Executive Summary

The site is an area of improved grassland, currently no longer grazed. The hedge along the northern boundary is likely to be subject to the Hedgerow Regulations 1997 and may be an important hedgerow as defined by those regulations.

Recommendations about potential future management options to maintain and enhance the biodiversity of the site are given in Section 7.

3 Objectives

- To carry out an ecological appraisal of the site
- To evaluate the biological diversity of the site
- To advise on potential future management options for the site with the aim of retaining and enhancing biodiversity

4 Methodology

4.1 Site description

The site surveyed is a rectangular area of improved grassland of approximately 1.1 hectares and approximately 255 metres by 63 metres in dimension. The area is located on a southern valley slope now drained by a partially culverted stream. Until recently the grassland had been summer grazed by cattle.

The western boundary of the site is formed by a line of mature trees, including sycamore. The southern boundary consists of a stock proof post and wire fence beyond which is a quiet rural lane and a linear area of similar woodland. A hedge previously of native species, predominantly hawthorn, forms the northern boundary, together with an adjacent narrow country lane. The eastern boundary is formed by a clipped hedge predominantly of hawthorn and the remains of a stone wall.

4.2 Site location

The site surveyed is located in rural surroundings within the village of Freshford. The immediate countryside to the north is in agricultural use, mainly as pasture. Within 1 kilometre of the site are areas of woodland listed on the National Inventory of Woodland and Trees (England), small areas of Ancient and Semi-natural woodland, a small area of lowland calcareous grassland and a designated traditional orchard.

Figure 1 Location of site surveyed © Crown copyright and database rights 2015 Ordnance Survey licence 100005798 GB GR ST 787 599



Figure 2 Aerial view of site surveyed



4.3 Weather

Weather conditions at the time of survey were warm and sunny.

4.4 Limitations to survey

The site was surveyed at a time of year when grass and plant species were likely to have been in flower. However, the presence of spring and autumn flowering species may not have been apparent.

4.5 Survey

The site was surveyed in the daytime on 3 July 2015 by an experienced ecologist licensed to survey for protected species and trained in Phase 1 habitat and National Vegetation survey techniques.

5 Results



Figure 2 Annotated map of site showing area surveyed

A walkover survey of the site was carried out, followed by more detailed survey of the grassland on the northern site boundary. The site occupied the north facing slope of a valley drained by a small stream. This stream still flowed above ground approximately 50 metres to the west of the site where it entered a culvert. A small area of woodland consisting of native species of tree and including mature sycamore was present on the western site boundary. The southern boundary was formed of stock proof post and wire fencing but beyond this to the south was a quiet rural lane with a wide southern margin of tall grassland forming the edge of area of deciduous mainly native species woodland. The grounds of a local school occupied the north east corner of the site and these were surrounded by a clipped hedge of native species, predominantly hawthorn, covering the remains of a stone wall.

The northern boundary was formed by a hedge, previously managed by clipping, but now unmanaged and predominantly of hawthorn, adjacent to a narrow rural lane. A small layby used for car parking was present at the western end of this hedge outside the site boundary.

The hedge surrounding the school in the north eastern corner of the site was thick and wide as a result of regular clipping and consisted predominantly of hawthorn. The remains of a substantial stone wall could be seen within the hedge interior. The age of this length of hedge was uncertain but there was no associated ditch or bank.

The western site boundary was occupied by a line of mature trees, mainly sycamore, and the grassland in this area showed signs of shading and enrichment of the soil with stands of nettle, making it likely that this area of shade was frequented by cattle.

The southern boundary of the site was occupied by post and rail stock proof fencing, beyond which was a narrow margin of grassland adjacent to a quiet country lane. Beyond the lane to the south was a wider

area of linear grassland along the edge of a small area of broadleaved woodland mainly of native species of trees and shrubs.

5.1 Area of improved grassland

The area of improved grassland sloped steeply upwards towards the south but showed some evidence of terracing in the eastern section. The origin of this terracing was uncertain but could represent the remains of more extensive terracing destroyed when the school which occupies the north east corner of the site was constructed.

With the cessation of summer grazing, a tall grass sward had developed. This grassland was botanically species poor but some flowering herbaceous species were present including occasional Smooth hawksbeard *Crepis capillaris*, Meadow vetchling *Lathyrus pratensis*, Bird's foot trefoil *Lotus corniculatus*, Meadow cranesbill *Geranium pratense*, Clustered dock *Rumex conglomeratus*, Hogweed, *Heracleum sphondylium*, Cow parsley *Anthriscus sylvestris*, Common knapweed *Centaura nigra*, Field bindweed *Geum urbanum* and Ladies' bedstraw *Galium verum*. Grass species identified included frequent Perennial ryegrass *Lolium perenne*, Crested dog's tail *Cynosurus cristatus* and occasional Yorkshire fog *Holcus lanatus*, False oatgrass *Arrhenatherum elatius* and Rough meadowgrass *Poa trivialis*. Stands of nettle *Urtica dioica* were locally abundant on areas of enriched soil.

5.2 Hedge on the northern boundary

The hedge along the northern boundary of the site was thick and wide as a result of previous regular clipping and was approximately 2 metres in height and 1.5 metres in width and 366 metres in length. The age of this hedge was uncertain, although some evidence of traditional management was seen in the form of thick horizontal branches suggesting past management by laying.

In accordance with hedgerow survey methodology, two 30 metre lengths of the hedge were surveyed, one to the east and one to the west of the grassland gate. As suggested by hedgerow survey methodology, the western section was 30 metres from hedgerow end (the node at which the hedgerow joined the line of mature sycamores forming the western site boundary). For completeness, a further 30 metre length of hedge was surveyed to the east of the grassland gate. Because of the height of the grassland along the southern edge of the hedge sections surveyed making access difficult, the sections were surveyed from the northern roadside edge.

5.2.2 Section 1 (west of the grassland gate)

Woody species identified within this 30 metre section included hazel *Corylus avelana*, blackthorn *Prunus spinosus*, sycamore *Acer pseudoplatanus*, elder *Sambucus nigra*, elm *Ulmus europea*, field maple *Acer campetris*, hawthorn *Crataegus monygyna*, and dogwood *Cornus rubra*. Within the hedge canopy wild hop *Humulus lupulus* was seen twining.

5.2.3 Section 2 (east of the grassland gate)

Woody species identified within this 30 metre section included horse chestnut *Aesculus hippocastanum*, native privet *Ligustrum vulgare*, hazel *Corylus avellana*, field maple *Acer campestris*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, sycamore *Acer pseudoplatanus*, blackthorn *Prunus spinosus*, dogwood *Cornus sanguinea* and ash *Fraxinus excelsior*.

Herbaceous species identified within the field layer of both sections included comfrey *Symphytum officinale*, nettle *Urtica dioica*, hogweed *Heracleum sphondilium*, ivy *Hedera helix*, Herb Robert *Geranium robertiana*, seedling ash *Fraxinus excelsior*, cleavers *Galium aparine*, Hedge garlic *Allaria petiolata*, Hedge bindweed *Calystegia sepium*, silverweed *Potentilla anserina*, field rose *Rosa arvensis*, Broad leaved dock *Rumex obtusifolius*, Herb bennet *Geum urbanum*, Perennial ryegrass *Lolium perenne*, False oatgrass *Arrhenatherum elatius*, Yorkshire Fog *Holcus lanatus*, Cock's foot *Dactylus glomerata* Timothy *Phleum pratense* and Rough meadow grass *Poa trivialis*

6 Conclusions

The site surveyed is an area of species poor improved grassland on a north facing slope and is currently no longer summer grazed. At the time of survey, this cessation of grazing had permitted a tall grass sward to

develop and the herbaceous plant species present to flower and set seed. However, without some form of appropriate management, the biodiversity of the grassland is likely to decline.

It is understood that there is a long tradition of grazing on the the site with some properties in the village having grazing rights and grazing of the Tyning has become an intrinsic part of the culture of the village.

The Tyning is also registered as a village green with rights of public access and this may be a factor when considering future management options for the site.

Previous summer grazing has prevented the development of the grassland into a summer flowering meadow with greater botanic diversity. However, this grazing has helped to maintain low nutrient levels in the soil which inhibits the dominance of tall, aggressively growing grass species likely to shade out finer native grasses and herbaceous species. Grazing removes high nutrient plant material produced in summer which would otherwise fall and decompose resulting in nutrients from the plant material entering the soil and soil nutrient levels to increase.

The hedge on the northern boundary is likely to be subject to the Hedgerow Regulations 1997 and because of the assemblage of native woody species present, this hedge may be considered as important as defined by these Regulations. However, it is possible that the number of woody species present may have been enhanced by a planting scheme at some time in the past. This previously clipped hedge had been allowed to grow into a taller structure more likely to provide shelter and a source of food for insects and other invertebrates and for common bird species. Taller hedges which produce nectar through flowering of the woody species present and fruits and berries as these flowers set seed will support a wider range of invertebrates, small mammals and common bird species by providing shelter and sources of food.

The area of woodland directly to the south of the Tyning is listed as deciduous woodland on the Priority Habitat Inventory. Future management of the Tyning is likely to have an implication on the biodiversity of this area of woodland since the resources required by wildlife species change in response to weather conditions and time of year. This results in wildlife species moving from one habitat to another to seek shelter or hunt for food during their annual life cycles. Reduction or enhancement in the biodiversity of one habitat may therefore have a consequential effect on the biodiversity of another by negatively or positively affecting the ability of a species to survive or thrive in that habitat. If the quality of habitat on which a species depends during one part of its life cycle declines, this may ultimately affect the long term ability of that species to survive in the area in the long term.

7 Recommendations

Decisions for the future management of the Tyning should be landscaped based, taking into account not only the site itself but its role as part of the mosaic of habitats present in the immediate and wider surrounding area.

The duty of care of public authorities with regard to the conservation of biodiversity when exercising their functions should also be a major consideration when making these decisions. Public authorities have a Duty to have regard to the conservation of biodiversity in exercising their functions. This Duty was introduced by the Natural Environment and Rural Communities Act and came into force on 1 October 2006. The Duty aims to raise the profile and visibility of biodiversity, clarify existing commitments with regard to biodiversity, and to make it a natural and integral part of policy and decision making. <u>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69311/pb12585-pa-guid-english-070516.pdf</u>

Guidance for Public Authorities on Implementing the Biodiversity Duty

It is recommended that a management plan in consultation with all stakeholders be drawn up in relation to future management options of the Tyning which should include proposals for a monitoring programme and a review process. This management plan should include, if necessary, the drawing up of formal grazing agreements with clear objectives aimed at maintaining and enhancing site biodiversity, rather than the apparent previous ad hoc casual arrangements.

These recommendations do not take account of financial considerations relating to the suggested management options, though in reality these may be an important factor.

The following management options for the management of the Tyning and surrounding hedges are therefore suggested for consideration.

7.1 Non-intervention

Non-intervention (no management) will result in a gradual increase of nutrient levels in the soil as each year's growth of vegetation decomposes and returns nutrients to the soil. This will result in colonisation by aggressively growing tussock forming grass species which will shade out finer grasses and herbaceous species leading to increasing levels of soil nutrients. This is likely to result in eventual colonisation of the site by hawthorn and blackthorn scrub and possibly other native shrub and tree species.

This would lead to the creation of additional scrub habitat on the site but loss of the improved grassland. Biodiversity normally increases in proportion to different types of present since different habitats will support a more varied range of plant and animal species including insects and other invertebrates and bird species.

Left unmanaged, scrub habitat usually succeeds to woodland. If woodland were to become established on the Tyning, this would increase the area and age range of trees and would in effect become an extension of the deciduous woodland priority habitat present to the south and create connectivity to the small areas of woodland to the west. The biodiversity of any habitat can be enhanced by an increase in area.

Non-intervention would permit the development of a tall hedge on the northern site boundary, providing shelter and food for insects and other invertebrates and common bird species and improved connectivity with the small areas of woodland to the west.

7.2 Resumption of previous management (summer grazing)

Resuming summer grazing on the site is likely to lead to a return to the previous status guo with the hedges on the northern site boundary being closely clipped in order to provide a stock proof barrier.

Although maintaining low levels of nutrients in the soil, summer grazing can prevent the development of a flower rich summer sward and plants from setting seed but the intrinsic landscape value of cattle grazing in a summer field giving a rural feel to the village would be maintained.

Light stocking rates can somewhat reduce the disadvantages of the effects of summer grazing of grassland.

Autumn and winter grazing (September to March) 7.3

The aim of autumn and winter grazing is to create a short sward in spring which will allow finer grasses and herbaceous plants to grow, flower and set seed. By September most plant species will have set and dispersed seed. Most grassland herbs are dormant in the winter and so are not directly affected by winter grazing and more vigorous grasses can be weakened. Moderate trampling breaks up the litter layer exposing ground for colonising by annuals the next spring. Winter grazing will not remove any nutrients which are locked up in plant roots but will help to avoid enrichment of the soil since the thatch of fallen summer vegetation will be grazed off.

However, vegetation nutrient levels are lower in autumn and winter which may result in livestock welfare issues. Supplementary feeding is not normally recommended as part of conservation grazing schemes since this can result in local enrichment of the soil from the remains of the feed itself and from concentrated deposits of dung and local disturbance of the soil. Light stocking rates of hardy animals can reduce the welfare disadvantages of autumn and winter grazing.

7.4 Mechanical mowing

Mechanical mowing of this sloping site could be considered. However, in order to replicate the effects of grazing to which grassland is adapted and to maintain and enhance the biodiversity of the site, mowing would be best done twice a year in early autumn (September/October) and early spring (March). It would be important to remove all cut vegetation to replicate the effects of grazing by cattle in maintaining low soil nutrient levels and in order to avoid increase of nutrient levels in the soil which will occur if arisings from mowing are allowed to decompose and add nutrients to the soil. Mowing in September/October would remove the nutrient rich summer growth of vegetation and prevent a smothering thatch from forming on the sward. By this time, the plant species present would have set and dispersed their seeds. Further mowing in March would remove any early grass growth and create a short sward which will allow the finer grass and herbaceous plant species to begin to grow, seeds to germinate and seedlings to develop. © Chalkhill Environmental Consultants Tel. 01380 725670

Mechanical mowing could be used to further enhance the biodiversity of the grassland through creating a range of grassland heights by varying the mowing schedule in different areas. Particularly important would be the creation of tussocky grassland which would provide a structured edge to the woodland on the western site boundary, along the southern edge of the roadside hedge on the northern boundary and a wide margin of tall grassland and herbaceous species along the southern site boundary to the north of the area of deciduous woodland.

Mechanical mowing of the grassland through the summer months to maintain a low sward height is likely to result in an overall loss of biodiversity of the grassland area. Such a mowing regime will prevent the flowering and setting of seed of any herbaceous plant species and inhibit their ability to photosynthesise by removing growing leaves and stems. Regular mowing is likely to favour the grass species present which are adapted to grazing pressure through having a growing point close to the soil. This will result in a species poor grass dominated sward with poor botanical diversity with few flowering herbaceous species.

7.5 Hedge creation/management/planting scheme

The biodiversity of the site and connectivity with adjacent habitats would be improved by the planting of a thick hedge of native trees and shrubby species along the southern site boundary where a post and wire stock proof fence is currently present. Such a hedge is likely to provide a corridor along which wildlife species can migrate and provide shelter and a source of food in the form of nectar, seeds and fruits for insects such as butterflies and other invertebrates and common bird species. Management of this hedge should permit the development of a tall thick structure and allow the tree and shrubby species to flower and to set seed.

Management of the on the northern site boundary through a relaxation of clipping in order to permit a thick tall structure to develop and to allow the tree and shrubby species to flower and to set seed would also enhance biodiversity.

Consideration could be given to a planting scheme of native tree and shrubby species known to grow well in the area along the western site boundary which is currently dominated by sycamore and where nettle is locally abundant. A mixed planting scheme of shrubby species would provide structure to the woodland edge and support a wider range of insects and other invertebrates, small mammals and common bird species. However, if grazing were to be reintroduced to the site, this area would require fencing off from grazing animals so that it could become properly established.

Records exist of traditional orchards in the area and consideration could be given to planting a small orchard of traditional varieties, perhaps in the area to the south of the school. Fruit trees can provide a shelter and a source of nectar and fruits for insect and common bird species during the spring and summer. In the winter and autumn fallen fruit can provide food for small mammals and common bird species which will not only eat the seeds but also invertebrates such as slugs, snails and woodlice which are attracted to fallen fruit. Fresh fruit could also be picked which could promote an understanding of the use of local resources, the consumption of a healthy diet and preparing meals from fresh ingredients.

7.6 Impacts of public access

Public access can have an impact on sites managed for conservation when damage to vegetation by trampling can occur, although often paths are created by public access and the resulting short sward, particularly along the edges, can be colonised by plant species less able to compete with taller growing species. Public access for dog walking can lead to local enrichment of the soil by the deposition of dog faeces which will encourage the growth of aggressive, tall grass species and a dog walking policy should be drawn up in order to avoid this occurring. Dog faeces also present a public health risk, especially to children.

7 APPENDICES

Appendix 1 Summary of Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are the main regulations aimed at protecting hedgerows in their own right.

It is against the law to remove most hedges without permission. Removal is uprooting or otherwise destroying a hedgerow. Serious damage to the root system or over-maintenance resulting in the death of the hedgerow counts as removal.

There are a number of exceptions, including essential work carried out by the utilities and emergency access. Proper maintenance, including drastic looking measures such as coppicing, severe pruning and laying is allowed without specific permission.

The regulations only cover hedgerows that are at least 20m long or, if shorter, connected to other hedgerows at both ends or part of a longer hedgerow. They must be in or adjacent to common land, village greens, SSSIs, LNRs, or land used for agriculture, forestry or breeding or keeping of horses, ponies or donkeys.

Garden hedges and former hedgerows that have grown to a line of trees are not covered by the regulations. Trees within a hedgerow are considered to be a part of the hedge.

Hedgerow removal

A landowner who wishes to remove a hedgerow must serve a Hedgerow Removal Notice in writing on their local planning authority. The authority then has 42 days to determine whether or not the hedgerow is 'important' (see below) under the regulations, and whether or not to issue a Hedgerow Retention Notice.

If the hedgerow is not 'important', the authority cannot refuse a permission to remove it under these regulations. If the hedgerow is important, it should be protected. However, the authority does not have to issue a retention notice if they are satisfied that circumstances justify the removal.

The authority must consult the local parish council in England or community council in Wales and consider their views when making the decision, but they do not have to consult anyone else. If a hedge is removed without permission (whether important or not) the land owner may face an unlimited fine and may have to replace the hedge.

A hedge retention notice is permanent, although a planning authority may withdraw it at any time. If these regulations allow the removal of a hedgerow, this does not over-rule any prohibition or restriction imposed by other agreements or regulations.

What is an important hedgerow?

To qualify as 'important', a hedgerow must be at least 30 years old and meet at least one of the following eight criteria, which identify hedgerows of particular archaeological, historical, wildlife and landscape value.

- The hedgerow marks the boundary of a historic parish or township existing before 1850.
- The hedgerow incorporates an archaeological feature.
- The hedgerow is a part of or associated with an archaeological site.
- The hedgerow marks the boundary of or is associated with a pre-1600 AD estate or manor.

• The hedgerow forms an integral part of or is associated with a field system pre-dating the Enclosures Act.

• The hedgerow contains a listed species. These have to be listed the Wildlife and Countryside Act 1981 either in Part I of Schedule 1 (birds protected by special penalties), or Schedule 5 (other animals) or Schedule 8 (plants). In addition, species listed in certain red data books qualify. Unfortunately, the list of birds was published in 1990, and does not include species such as song thrush and linnet, whose numbers have declined more recently.

The hedgerow includes, on average, in a 30 metre length one of:

- o at least 7 woody shrub and tree species listed in the regulations (see the list below).
- o at least 6 woody species and has at least 3 associated features.
- o at least 6 woody species including a black-poplar tree, large-leaved lime, smallleaved lime or wild service tree. In northern England, the number of woody species is reduced by one

• The hedgerow runs alongside a bridleway, footpath, road used as a public path or a byway open to all traffic, and includes at least four woody species, on average, in a 30 metre length and has at least two associated features.

The associated features are:

- o A bank or wall supporting the hedgerow along at least half of its length.
- o Less than 10% gaps.
- o On average, at least one tree per 50 metres of hedge
- o At least three species from a list of 57 herbaceous woodland plants, including bluebell, primrose, wild strawberry and assorted ferns and violets (see list below).
- o A ditch along at least a half of the length of the hedge.
- o A number of connections with other hedgerows, ponds or woodland.
- o A parallel hedge within 15 metres of the hedgerow.

Woody shrub and trees species

Alder, crab apple, ash, aspen, beech, downy birch, silver birch, black-poplar, blackthorn, box, broom, buckthorn, alder buckthorn, butcher's broom, bird cherry, wild cherry, wild cotoneaster, downy currant, mountain currant, dogwood, elder, elm, gooseberry, gorse, dwarf gorse, western gorse, guelder rose, hawthorn, midland hawthorn, hazel, holly, hornbeam, common juniper, large-leaved lime, small-leaved lime, field maple, mezereon, pedunculate oak, sessile oak, osier, Plymouth pear, wild pear, grey poplar, white poplar, wild privet, rose, rowan, sea-buckthorn, wild service-tree, spindle, spurge-laurel, walnut, wayfaring-tree, whitebeam, willow, yew.

Woodland plant species

Barren strawberry, bluebell, broad buckler fern, broad-leaved helleborine, bugle, common cowwheat, common dog violet, common polypody, dog's mercury, early dog violet, early purple orchid, enchanter's nightshade, giant fescue, goldilocks buttercup, great bell-flower, greater wood-rush, hairy brome, hairy woodrush, hard fern, hard shield fern, hart's tongue, heath bedstraw, herb paris, herb-robert, lady fern, lords-and-ladies, male fern, moschatel, narrow buckler-fern, nettle-leaved bell-flower, oxslip, pignut, primrose, ramsons, sanicle, scaly male-fern, small cow-wheat, soft shield fern, sweet violet, toothwort, tormentil, wild strawberry, wood anemone, wood avens/herb bennet, wood false-brome, wood horsetail, wood meadow-grass, wood melick, wood millet, wood sage, wood sedge, wood sorrel, wood speedwell, wood spurge, woodruff, yellow archangel, yellow pimpernel.





Disclaimer All reasonable effort was taken to ensure an accurate assessment of the situation at the time of the survey. However, the absence of recorded presence or sign should not be taken as an absolute guarantee that the site was not being used by a particular species. There is also no guarantee that any particular species will not use the site at any time in the future. Survey results may be weather or seasonally dependent. Any interpretation of legislation is based on our understanding and experience of the law. The relevant statutory authority can provide a more definitive interpretation.

This report is the responsibility of Chalkhill Environmental Consultants. It should be noted, that whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.