

Chagford Farm Ecology Summary Report, September 2013

An ecological scoping survey was undertaken of Chagfarm (a meat, dairy and honey free range social enterprise) on the 20th September 2013 by ecologist, Liz Powell. This aim of the survey was to map the broad habitat types present, produce an indicative list of plant species for the site and undertake a habitat suitability assessment and/or look for signs of protected and notable species. The outcomes of the ecological survey are to identify areas of ecological interest for protection and enhancement and to determine any potential conflicts with proposals for Chagfarm such as grazing rotation and fence installation.

Desk study

A desk study was undertaken prior to the site visit to identify areas of ecological interest within 1km of the site. This included checking the Natural England website 'nature on the map' (www.magic.defra.gov.uk) for designated sites and habitats of principle importance. The NBN gateway was also searched for records of protected and notable species.

Rushford Wood SSSI (Site of Special Scientific Interest) is a nationally designated site and is located 70m to the north west of Chagfarm. It is a species rich example of a pedunculate oak and hazel ancient woodland developed on acidic soils derived from granite. Specifically it is designated for it's rich lichen flora of which over 130 species have been recorded. Directly adjacent to Chagfarm is ancient woodland (classified on the ancient woodland Natural England inventory), which has been continuously wooded since 1600 and is therefore a priority habitat and very difficult to recreate. There are recent records of hazel dormice (*Muscardinus avellanarius*), European otter (*Lutra lutra*) and brown long-eared bat (*Plecotus auritus*) roosts located within 1km of the site, all of which are European protected species.

Site Appraisal

Species-rich hedgerows

The site at Chagfarm is bordered on the southwest edge by a species-rich hedgerow associated with an old stone wall. This hedgerow is largely composed of hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), occasional holly (*Illex aquifolium*) and field rose (*Rosa arvensis*). Occasional mature standard trees in the hedgerow include pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*). The northern part of the

hedgerow contains frequent small-leaved lime (*Tilia cordata*), an ancient woodland indicator.

The hedgerow understorey consists of a mixture of calcicole (chalk loving) species including dog's mercury (*Mercurialis perennis*) and the shrub wild privet (*Ligustrum vulgare*) and more calcifuge (acid loving) species such as wood sage (*Teucrium scorodonia*) and bracken (*Pteridium aquilinum*). Evidence of hazel dormouse was found along this hedgerow. This hedgerow qualifies as an important hedgerow under the 'Hedgerow Regulation 1997' due to the diversity of woody species, association with a stone wall and the presence of a protected species (hazel dormouse). Therefore to undertake any works on this hedgerow the local council would have to be notified under the hedgerow regulations 1997.

Woodland

The south of the site (referred to as bank field and wall field) comprises of broad-leaved woodland, a habitat of principle importance. The woodland to the south of the site comprises pedunculate oak and ash woodland with a coppiced hazel, rowan and elder (*Sambucus nigra*) shrub layer. The understorey flora showed signs of both calcareous and acid conditions and included dog's mercury, bluebell (*Hyacinthoides non-scripta*), wood speedwell (*Veronica montana*), common dog violet (*Viola riviniana*) and bracken (*Pteridium aquilinum*). There is occasional hybrid elm species (hybrid species to be confirmed).

There are abundant lichens hanging on the tree branches including bearded lichens (*Usnea sp*), which are indicators of good air quality. Further identification to species level by a lichenologist is being undertaken. It is anticipated that some of the lichen diversity present in the adjacent ancient woodland and Rushford Wood SSSI is also present within the survey site but further survey is required to assess this.

Beech (*Fagus sylvatica*), sycamore and hybrid elm sp (*Ulmus sp*) are dominant around the old quarry in bank field with a luxuriant understorey layer of common nettle (*Urtica dioica*), indicative of wet high nutrient conditions.

On the eastern border of the site either side of the stream in 'Bog field' and 'Top right field' a wet scrub and woodland community has developed dominated by goat willow (*Salix caprea*). Further survey of this woodland is required.

Wetland habitat

The bog field is associated with two natural springs and a small stream marks the northern boundary. This field is a species rich example of a rush pasture, which is dominated by soft rush (*Juncus effusus*) associated with the herbaceous species marsh bedstraw (*Galium palustre*), bog stitchwort (*Stellaria palustre*), greater bird's-foot trefoil (*Lotus pedunculatus*), alternate-leaved golden saxifrage (*Chrysosplenium oppositifolium*) and marsh thistle (*Cirsium palustre*). Tall ruderal vegetation was dominant in patches including hemp agrimony (*Eupatoria cannabinum*) and common nettle. Grasses were a dominant feature of the sward where rushes did not dominate and included Yorkshire fog (*Holcus lanatus*), Timothy (*Phleum pratensis*) and cocksfoot (*Dactylis glomerata*).

The stream on the northern border was choked by fool's watercress (*Apium nodiflorum*) at the eastern edge associated with reed sweet grass (*Glyceria maxima*).

There is water vole (a UK protected species) potential habitat in the rush pasture and the open sections of the stream. A search for signs revealed latrines and feeding remains of field vole at the bottom of tussocks of rushes but no water vole field signs were recorded. However further water vole surveys should be undertaken in the stream and rush pasture to determine presence/absence.

Grassland- top field

Grassland is the dominant habitat in the top field, which is split into a lower and upper field by a large wooded gully. The grassland has been left unmanaged prior to pig grazing and therefore tussocky grasses such as cock's-foot and Yorkshire fog have become dominant with tall ruderal vegetation including common and creeping thistle and common nettle. There are large swathes of bracken particularly in the lower field. The finer less competitive grasses include common bent grass (*Agrostis capillaris*), smooth meadow grass (*Poa pratensis*) and sweet vernal grass (*Anthoxanthum odoratum*). There were a few more competitive wildflowers including black knapweed (*Centaurea nigra*), sheep's sorrel (*Rumex acetosella*), meadow vetchling (*Lathyrus pratensis*) and musk mallow (*Malva moschata*).

The field shows signs of enrichment but the botanical diversity could be improved by topping the competitive weeds and subsequent grazing. Ground disturbance by pigs will open up the sward to aid regeneration from the seed bank or any potential wildflower seeding operations.

Dormice

Dormice are a European protected species and are in decline across Europe. The habitat is optimal for dormice in the hedgerows and woodland on the site. There is a diversity of woody species including abundant hazel, a principle food source for dormice, and connectivity to a large area of ancient woodland where hazel dormice has previously been recorded. Evidence of hazel dormouse was recorded within the hedgerow from the presence of gnawed hazelnuts comprising the distinctive neat circular opening without ridges on the rim of the opening but with teeth marks around the edge of the opening.

Water voles (Arvicola amphibia)

Water voles and their places of rest are fully protected under UK law. Water voles require foraging habitat to include rushes, grasses and sedges with limited disturbance near a water body. This is provided in the bog field and further surveys for water vole should be undertaken to determine potential impacts to this species.

Bats

All bats and their roosts are fully protected under European and UK law. The farm buildings have open roof spaces, which are drafty and open to the elements. This limits the suitability of buildings for bats that require large roof voids such as brown long-eared species. The buildings do provide limited roosting potential for crevice dwelling bat species such as pipistrelles in the cracks in the stonework above barn door lintels. Mature trees in the hedgerow bordering wall field provide suitable cavities for bat species such as noctule. The site will provide ideal foraging habitat for a number of bat species.

Badgers (Meles meles)

Badgers and their setts are protected by the 'The Protection of Badgers Act 1992', which makes it illegal to disturb a badger in its sett or obstruct access to an active sett. A disused four-hole badger sett is located in the wooded gully between the two top fields. No recent badger field signs were recorded (such as hair, footprints, bedding outside worn pathways or latrines), which either shows that the sett has been abandoned or it is used infrequently throughout the seasons. It is likely to be the former as access has been restricted to the sett by electric fencing for pig grazing.

Birds

All breeding birds and their nests are fully protected under UK law. There is potential for farmland birds such as yellowhammer, grey partridge, linnet, and corn bunting to be present in arable headlands along hedgerows. These are all red list birds (birds of conservation concern). There is also potential for birds that require mature trees with cavities such as greater spotted woodpecker and little owls to be present. There is potential kingfisher (a schedule 1 species afforded special protection) nesting habitat along stream in overhanging willow.

Further Surveys

This was a very brief initial scoping survey and further surveys would be required to assess the biodiversity of the site and presence of any notable or protected species. The following surveys could be undertaken in the next survey season between April and September:

- Water vole
- Dormouse
- Bat survey
- NVC (National Vegetation Classification)- Phase 2 botanical surveys
- Lower plants- mosses and lichens survey
- Bird survey

Potential Impacts

Dormice hibernate just under the leaf litter from November to February and therefore pigs could uncover a hibernating dormouse by grubbing up roots and soil. Dormice build nests in the canopy for breeding and are therefore less vulnerable outside of the hibernation period. (I will do some further research on the conflict between pigs/wild boar in dormice habitat and see if there has been much research done on the subject and what the potential impacts are as I'm not sure!)

If water voles are present in the bog field or nearby stream then any grazing in this area will make the habitat less suitable as they are very sensitive to disturbance.

Impacts to badger sett include erection of electric fencing reducing connectivity to suitable habitat and foraging areas.

Mitigation/Enhancement

- Bat boxes on buildings and trees, creation of roost feature in building (artificial roof void using ply wood on south facing wall to create the right conditions for a maternity roost). Bats will help reduce insect population and potential infestation of livestock!
- Erection of dormouse boxes in the woodland and nesting tubes in the hedgerow. Both are useful tools for monitoring dormouse populations but have also been shown to aid conservation of the species by improving potential nesting habitat. Creation of brush fences to create more protected hibernation sites. Any hedge improvement or coppicing should take place in the winter when dormice not in the canopy.
- Erection of barn owl boxes at apex of eaves of buildings or in open fields on poles.
- Monitoring of all wildlife boxes annually by licenced ecologists/ willing volunteers!
- Sowing of wildflower seed in top fields to improve botanical diversity after grazing and removal of weed species