

BTO Research Report No. 525

**Will Woodlands:
A Reconnaissance Survey of Habitat
Composition, Configuration
and the Wild Bird Potential
of Three Developing Woodland Sites**

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A Report carried out by the British Trust for Ornithology

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CONTENTS

	Page No
List of Tables.....	15
List of Images.....	18
1. EXECUTIVE SUMMARY	3
2. INTRODUCTION.....	5
3. SITE ACCOUNTS	7
3.1 Site 1 Manor Farm, Yatesbury	7
3.1.1 Potential of the site	7
3.2 Site 2 Broom Hill.....	9
3.2.1 Potential of the site	9
3.3 Site 3 Hazel Manor	11
3.3.1 Potential of the site	11
4. OVERVIEW AND GENERAL CONSIDERATION	13
4.1 Final Considerations.....	14

LIST OF TABLES

	Page No.
Table 1 A selected list of woodland and farmland species with the potential to occur on the developing Will Woodlands sites.	15
Table 2 Yatesbury: woodland and farmland species recorded in the surrounding 10km square area.	19
Table 3 Broom Hill: woodland and farmland species recorded in the surrounding 10km square area.	23
Table 4 Hazel Manor: woodland and farmland species recorded within the surrounding 10km square area.	28

LIST OF IMAGES

	Page No.
Yatesbury: site map	17
Yatesbury images	18
Broom Hill: site map	21
Broom Hill images	22
Hazel Manor: site map	25
Hazel Manor images.....	26

1. EXECUTIVE SUMMARY

1. The BTO paid a single visit in December 2008, to view three woodland plantation sites owned by the Will Woodlands, which is a charitable company.
2. The visit to each site was a 'look-see' reconnaissance visit to view the scale and configuration of the sites (almost 600 hectares in all) and their context in terms of locality and their adjacent landscapes. No formal bird surveys were carried out, though a record was made of characteristic bird species seen.
3. Each one of the woodland sites was well planned with respect to topography and the surrounding landscape. Each site, though very different in character, supported varying age plantations of mainly native broad-leaved tree species, arranged with complementary woodland rides and green space areas. On each site, there was some mature woodland of varying composition, and valuable as existing habitat in contrast to the plantation blocks.
4. The report considers the context of the surrounding countryside and the species that have been recorded in the vicinity to predict potential recruitment to the woodland sites and their likelihood of supporting particular assemblages of birds. Focus falls on species that, i) through their song or their behavioural characteristics, have clear aesthetic value, perhaps being evocative of the habitat they occupy, or ii) currently have a vulnerable conservation status.
5. Most comments are of a general nature, being applicable to all of the woodland plantations blocks across all sites, though progress will depend on localised management and landscape effects. Site-specific recommendations would require more thorough direct observations of the current bird species assemblages and their associated habitats. The report therefore emphasises which principle factors influence and underpin the richness and abundance of species that use developing woodlands through to maturity. Farmland management for birds is also given consideration for two sites, Yatesbury and Broom Hill.
6. One fundamental principle is the need to create or encourage conditions for structural variation to develop within the woodland blocks, to create varied habitat profiles and to encourage or allow, on parts of the sites, semi-natural regeneration of field and shrub layers. The juxtaposition of rides and woodland edge could be used effectively in this way. Reduced management intervention, perhaps within the heart of selected woodland blocks, would allow semi-natural, variable-age regeneration, through competition between trees, shrubs and other plant species. Another important component is standing dead wood, which is associated mainly with mature woodland.
7. Apart from their overall aesthetic quality, the Will Woodlands sites have enormous potential to develop as sites of important conservation value within their respective counties. This sentiment extends to all taxa – mammals, birds, insects and plants etc, such that close consideration might be given to local conservation objectives for woodland fauna and flora. As relatively undisturbed sites, they also have significant potential to contribute towards research and education within developing woodland mosaics.
8. Maximum overall benefit from the three sites would be facilitated by careful and reliable assessments of progress and species responses to change, related to habitat development and management practice.

2. INTRODUCTION

This report is based on a single winter visit in December 2008, to each of the three English sites managed by Will Woodlands, in Wiltshire, Dorset and Somerset. Together the sites occupy close to 600 hectares of established or newly planted woodland. Will Woodlands' stated overall aim, as a privately funded charity, is 'tree planting for public enjoyment, heritage enrichment and nature conservation.' Their website states that the specific aims of the charity are to 'create new woodlands and to manage them as an addition to the woodland heritage of England and Wales for the benefit of this and future generations. In doing this Will Woodlands:

- *'Enlarges and protects the wooded landscape.*
- *Enriches existing woodlands and adjoining countryside.*
- *Improves the environment by the protection and management of new and existing habitats for plants and animals.*
- *Provides opportunities for peaceful enjoyment and appreciation by the public of woodlands and the adjacent countryside. '*

The purpose of the BTO visits was to note the characteristics of each site's topography and wildlife (mainly bird) habitat features. No formal bird survey work was carried out but a record was made of species seen, those that probably occur on each site (based on local survey data from the national bird monitoring scheme) and those for which each site has realistic potential to support, either now or in the future.

From the outset, it was clear that all three sites were being managed around a clear, well-designed strategy for creating varied habitats (for birds at least), by using topographical features and existing habitats. Though each is principally a woodland site, they support a balance of adjacent areas of grassland reversion (from arable) for pasture or meadow management, hedgerows and/or shrubs and areas of rough grassland that would provide habitat for voles and other small mammals. Adjacent or incorporated areas of arable land or grazing pasture add further habitat interest, pertaining to an additional range of bird species associated with those features.

A notable, key common feature to all sites is that the plantation woodland is deer-fenced and therefore largely free of deer browsing pressure. The importance of this is that the planted trees, under storey, and shrub layer will add significant added value to the site through the course of their development, for birds and other species. Moreover, the sites lend themselves to observation as to how the development of woodland features and their attendant fauna over time contrasts with more typically unguarded plantations.

3. SITE ACCOUNTS

3.1 Site 1 Manor Farm, Yatesbury

Characteristics: Much of the site lies at around 200m asl. From the website, Manor Farm, Yatesbury, was purchased in 2003. The farm, in North Wiltshire, comprises 154 hectares of land of which 63 ha is either newly planted (50 ha), established (8.6 ha) or arboretum/orchard (4 ha). There is currently much grassland/farmland unplanted on the site.

3.1.1 Potential of the site

The surrounding landscape is largely expansive open, arable farmland with ditches, being only sparsely and sporadically wooded. This site was characterised by, over one third comprising young or newly planted native woodland and the rest comprising open grass pasture, hedgerows, ditches and field margins. The open grassland has an expansive feel, lying adjacent to open arable land on neighbouring farmland – supporting few hedges or structured boundaries. On the Yatesbury site, all grass fields were of a uniform character, comprising a relatively short dense sward structure, superficially around 80% grass-dominated relative to the broad-leaved content. At the time of visiting, flocks of Corn Buntings, Linnets, Goldfinches and Skylarks were characteristic species of the landscape. Other species seen included Rooks and Jackdaws, Mistle Thrush, Redwing and Fieldfare, and the occasional Reed Bunting and Stonechat. Snipe were using the wet areas of pasture and the site supported a resident pair of Buzzards. In summer, site characteristics have the potential to support several pairs of birds of special aesthetic value, such as Lapwing and Skylark, as well as Grey Partridge or even Quail where the management regime adopts a low intensity grazing or mowing approach to the grassland areas. Some of the rough, infrequently managed habitat bordering sparse hedges or by ditches could support breeding Stonechat, Reed Bunting and Corn Bunting. A special target species for the site would be Whinchat, given the site's relative proximity to England's only current, extant lowland population, on Salisbury Plain and given the juxtaposition of young trees and rough grassland at Yatesbury

The inner field boundaries to the non-wooded areas of the site largely comprise relatively newly planted hedgerows of native tree species. Most lie adjacent to 6m wide grass margins of rougher grassland, protected from grazing animals by sheep fencing between the outer margin edge and the outer field edge. There are also existing, established hedgerows, of variable character. They include hedges that are thin and 'leggy' and others that are thick and denser in character, which will support typical hedgerow dwelling species such as Dunnock, Robin and Wren. Potentially, these thicker boundaries could support Tree Sparrows too, particularly where mature trees also occur intermittently along the old public right-of-way, bisecting the site to the east and west. Nest boxes may help draw in birds. The same trees, of ash, oak and the occasional willow, would be expected to support at least one pair of Little Owls on a site of this size and character (Great Spotted Woodpecker, Stock Dove, Jackdaw and Starling were noted at the time of the visit). Given the variable mixture of old and developing woodland, hedgerows and adjacent open ground, a target species of special interest and character for the site would be Turtle Dove, although this species is rapidly contracting its range eastwards. The breeding conditions would seem to exist already, but suitable foraging habitat may need to be provided as sparse, weedy grassland or fallow. The site should attract and support foraging and breeding Barn Owls given the areas of rough grassland and field margins available as foraging habitats. Again, nest boxes could be erected, to help draw in breeding or roosting birds.

Assuming the farmland/grassland habitats are to be retained and not planted with trees, an observation was that winter seed food was relatively scarce on the site during the current visit. There was one relatively small patch of mixed 'winter bird food'. Winter bird food attracts seed eating sparrows, finches and buntings and Grey Partridge to the site in winter. However, there is evidence that winter food may also play a role in improving the recruitment of birds into the breeding population, assuming there is suitable breeding habitat available to them in summer. Ideally, winter bird food could be incorporated as dispersed patches across the site, to give birds a greater number of options to

counteract localised sources of disturbance or predation. The species attracted to winter bird crops are wide and varied. Not only do they attract typical seed-eating species, as above, but Dunnock, Wren, Song Thrush and Blackbird also commonly occur in crops, particularly where a broad-leaved component, such as kale, is added to the crop mix. Cereal crops such as triticale or oats are among best choice for buntings (especially Yellowhammer and Corn Bunting) with triticale being more persistent than most crops in providing seed into the late wintertime.

As regards the woodland, the young trees will eventually create a mosaic of mixed woodland including two small plantations of conifers, in addition to rides and glades. The young trees are planted in rows and are of even age, and subject to regular inter-row mowing. The purpose of the inter-row mowing is not entirely clear but will reduce the complexity of the field layer in favour of dominant grasses and will reduce its capacity to support small mammals of interest to Kestrels and owls. The young trees themselves have enormous potential to attract a whole variety of breeding bird species over time, particularly if the complexity and profile of the woodland is allowed to develop in a natural or semi-natural way, perhaps through selective coppicing. Habitat complexity will attract higher numbers and greater variety of birds of special aesthetic value for their song (potentially, Wren, Nightingale, Blackbird, Song Thrush, Blackcap, Garden Warbler, Willow Warbler, Chiffchaff, Great Tit and Chaffinch), each with specific requirements in terms of the structure and density of the shrub to canopy layers, in which the shrub/scrub layer plays a significant role.

Across the site, there were one or two existing, small copses containing mature broad-leaved trees, although the under storey comprises thin, even aged young trees, with little structured scrub habitat or field layer. Expected bird species would include tree and/or canopy species, such as Great spotted Woodpecker, Chaffinch, tits, Treecreeper, Chiffchaff and Blackcap. The present structure is less likely to support many scrub or under storey species such as Garden Warbler, Wren and Dunnock. Farm buildings with surrounding large, mature lime trees support a rookery, while, in winter Stock Doves, Nuthatch, Jackdaws and Starlings were also present, suggesting the trees provide nest sites for these species during the summer time. In general, the site has great potential to develop as an important habitat complex, in support of a rich variety of farmland and woodland species of county if not regional significance.

3.2 Site 2 Broom Hill Estate

Characteristics: Much of the site lies at over 200 m asl. Planting of woodland at North Barn Farm, Dorset, started in 1999 and in total 315 ha have been planted in six phases with a seventh phase extension of *ca* 24 ha planned for planting in winter 2009/10. The Planting is designed to follow the chalk upland contours by straddling the valley sides. Predominant tree species are Beech, Ash and Oak occupying 50% of the broadleaved area. Rides and meadows also feature in the plans.

3.2.1 Potential of the site

The site is an area of almost 2 km² of young and relatively newly planted woodland, admixed with open meadow areas and patches of existing mature woodland. There is varied topographic interest that includes a valley, steep slopes and relatively exposed hill top features, to approximately 200 m altitude. There are 339 ha of new woodland or allocated woodland area as well as around 6 ha of established woodland and three arable fields of approximately 30 ha in total. There is enormous potential for this site to become a very important county if not national wildlife site for birds, mammals and other taxa. There is also enormous potential for the site to contribute important information of conservation and scientific interest. The current planning strategy is sympathetic to the landscape and is varied in its outlook, providing habitats for many wildlife species. In the short term, this will attract a typical range of common woodland birds, such as Robin, Wren, thrushes and several warblers, though inter-row mowing among young plantations, may reduce their value as foraging habitat for birds of prey such as Kestrel and owls, and probably also as a breeding site for scrub mosaic species such as Whinchat. The longer-term success of the site relies, critically, on key features of a woodland mosaic being encouraged through carefully considered management of the plantations, to support a robust and varied food chain as well as options for nest sites on and above the ground. Given the site's location, in Dorset, a county rich in wildlife, there is significant potential to attract a very diverse fauna and flora indeed; including birds, mammals (bats, dormouse), butterflies, orthoptera (crickets and grasshoppers), hymenoptera (ant and bee species), as well as orchids and chalk grassland plants. Many of these species are warm loving, large-bodied insects, such as butterflies, crickets and bees of considerable conservation interest in their own right. Large-bodied insects are also important food for birds, and many benefit as much from considered shrub, scrub and meadow management as from the woodland content itself. At Broom Hill, the sheltered areas between plantation blocks, the mosaics of woodland, woodland edge, thicket and herb-rich grassland should all be encouraged alongside processes of natural regeneration of vegetation characteristics within the plantation blocks. These mosaics would also significantly increase the biodiversity interest of the site in the longer term, not least for appealing bird species such as Turtle Dove, Nightingale, Garden Warbler and Bullfinch.

The woodland aside, Broom Hill also has the potential to offer valuable habitat for open landscape species. Rotational management of the three arable fields on the exposed hilltop, alongside a winter seed food provision, would benefit open field species, in winter (Lapwing and Golden Plover, winter thrushes, finches and buntings) and in summer (potentially, Lapwing and Skylark). Many of these species are currently of national conservation concern. If crops are to be grown, the rotation should, ideally, include a field of low input, late-sown crops (e.g., spring barley) and a field of winter stubbles followed by natural regeneration fallow. Across the three fields, this would provide open habitat for winter plovers (recorded at the time of the present visit), a late winter weed-seed resource for Grey Partridge, Skylark, finches and buntings, and summer in-field breeding and foraging habitats for species such as Skylark, Yellowhammer and Corn Bunting. The farmland offers an interesting contrast to the woodland plantations. Their juxtaposition has considerable potential to attract Turtle Doves, especially if there are early-successional, unsprayed fallows containing a sparse mixture of bare ground, grasses and arable weeds. An alternative would be to incorporate into a field or two, long-term, low intensity hay-meadow management to attract the same species and possibly Quail too.

The mature woodland would be expected to attract Tawny Owl, Stock Doves, Green Woodpecker and in time given the rolling topography of the site, Red Kite may be a reasonable prospect for the future. Redstart may occur but Nuthatch and Treecreeper are more likely to be present. Tree Sparrows have

also been recorded locally and could be encouraged to breed along the outer edge of the existing mature woodland block if a series of nest boxes placed there. This site and the adjacent farmyard and cottage is ideal habitat, in theory, but the birds need winter food as well as nest sites in trees or very old dense hedges.

As with all the sites, and with suitable attention given to the profile and management of the plantations, Broom Hill has the potential to attract large and strong populations of shrub-based songbirds, such as Nightingale, Song Thrush, Blackcap, Garden Warbler, Willow Warbler and Chiffchaff. Tree Pipits ought to be encouraged to colonise too. Nightjar is a possibility on the newly wooded slopes if bare or broken ground is available to them, but Woodlark is unlikely, since it prefers free-draining soils, especially sand. It would be interesting to observe the development of species assemblages at Broom Hill, over time in relation to the diversity of tree ages that have and are being planted there. At Broom Hill and Yatesbury, the juxtaposition of the woodland and arable farmland is fascinating. Some species such as Yellowhammer may breed in both habitats where differences in breeding densities and breeding productivity would be informative. One of the key habitats present among the new trees is the grassland habitat that is a potential resource that should not be overlooked. Barn Owls and other owls species, Kestrel and species such as Whinchat are important species that are dependent in one way or another on grassland mosaics. Some attention might be given to allow such mosaics to develop without too much management intervention, such as mowing.

3.3 Site 3 Hazel Manor

Characteristics: From the website, in 2001 a woodland of approximately 200 hectares was planted at Hazel Manor Farm on the Northern limit of the Mendip High Plateau (much if the site lies at over 200 m asl.). Predominant species are Oak, Ash, Beech and Sycamore comprising 60% of the broadleaved woodland area, the remainder being broadleaved species such as hazel and holly. In addition to the broadleaf mix, approximately 6 hectares of conifers have been planted to provide ecological variety and winter colour contrast.

3.3.1 Potential of the site

This site is large but less expansive than Broom Hill, yet more varied in the existing character of the woodland. It supports mature trees, which grow either as open parkland or as avenues of Sycamores, of considerable stature and character. There is also further contrast in the form of mature, ancient semi-natural woodland of very significant regional conservation value (e.g. for Dormice). In addition, there is a stand of old, rather leggy and shady Ash-dominated woodland on a steep slope, which contains a significant proportion of standing and fallen deadwood. This patch has obvious immediate value for Great and Lesser Spotted Woodpeckers, Treecreepers, Great, Blue, Marsh and possibly Willow Tits. The grassland within the pastoral and parkland areas are subject to low intensity cattle and sheep grazing, on a heavy soil and the sward quite thick and damp in character. In addition, there are several thick, mature, Hawthorn-dominated hedges.

As with all of the Will Woodlands sites, the plantations at Hazel Manor are of even aged mixed species character. Common woodland bird species (Robin, Wren and Thrushes) will occur as expected. Management that encourages areas of natural regeneration to develop will improve the long-term value. This will create a more complex habitat profile including, ultimately, mature stands, shrubs and scrub. Generally speaking, a more complex profile will support greater biodiversity interest, due to a richer array of fauna and flora. All of the Will Woodlands sites are of the size and capacity to optimise these characteristics, in order to maximise both the aesthetic and biodiversity value of the woodlands. That is, 1) large and impressive, statuesque groves of trees, 2) areas of natural regeneration, mixed-age woodland of high biodiversity value, and, 3) grassland, rides or meadows for invertebrates and open space flora, bordered by shrubby regeneration.

At Hazel Manor, the mature trees, particularly those in the parkland-type landscape have cavities, and would be expected to attract Barn Owl, Little Owl, Stock Doves, Green Woodpecker, Redstart, as well as Nuthatch and Treecreeper.

With suitable attention given to the profile and management of the plantations, they have the potential to attract strong populations of shrub-based songbirds, such as Song Thrush, Blackcap, Garden Warbler, Willow Warbler and Chiffchaff. Tree Pipits could be encouraged to colonise if open ground (glades) were created within the plantation blocks (though this species is probably more likely to occur at Broom Hill)

Other interesting, potential species that have been recorded locally in the surrounding area (Tables 4) include, Pied Flycatcher and Wood Warbler. Pied Flycatchers may be attracted to nest boxes placed older trees in more established stands of woodland, such as on the slope facing Chew and Blagdon lakes. Wood Warbler is a fast declining species in England, which ought to be a target for future colonisation at Hazel Manor. Its characteristic song is typically heard in shady, mature Oak and Birch woodland, mainly in the west of the UK. Tree Sparrow is another species of conservation concern that may be encouraged to breed by erecting loose groups of nest boxes on some of the more mature trees. Winter food (especially millet or grain spillage) may be important too in attracting birds, in improving over winter survival and in encouraging recruitment onto the site during the breeding season. The mature trees (nest boxes) and farm buildings (for nest boxes, spilt grain or old bedding for livestock) are ideally situated next to one another and may be used effectively to attract this species.

The mature, thicket hedgerows appeared in good condition and should support good numbers of Robins, Dunnocks and Wrens, Lesser Whitethroat and Whitethroat, tits and thrushes.

As with the other Will Woodlands sites the location of Hazel Manor and its composition of habitats have the potential to be recognised as being of important conservation interest, certainly at the county level if not at the regional level too.

4. OVERVIEW AND GENERAL CONSIDERATIONS

All of the Will Woodlands sites have enormous potential to attract a rich and interesting assemblage of birds. The sites' layout and are well-planned with consideration for the existing assets, such as topography and aspect. Their full potential would be realised most successfully if their visual-aesthetic value can be married successfully to fundamental habitat provision for wildlife, in terms of a varied habitat structure and composition.

All developing woodlands, whether established through planting or natural regeneration, undergo major changes in the habitats they offer birds and consequently there is much 'turnover' in the composition of the bird communities as the trees grow. Whilst there is much variation in the detailed changes from wood to wood, some general patterns can be identified. The number of species and the overall density tends to increase with maturity. The earliest stages are typically dominated by species needing areas of bare ground or a developing field layer; these may include Tree Pipit, Whitethroat, Grasshopper Warbler and Linnet. As the canopy closes, and if a dense shrub layer is allowed to develop, these species may be replaced by ones requiring a vigorous understorey such as Garden Warbler, Blackcap, Nightingale, Bullfinch and Long-tailed Tit. With further growth of the trees and shading of the understorey some of these species disappear but hole-nesters may increase. However, even in mature woodlands, where large rides are maintained with shrubby margins especially with areas of vigorous bramble, many of the bird species characteristics of the earlier stages of development can persist.

Hence, the most diverse bird populations tend to be found in woodlands with a variety of growth stages. The complexity of vegetation structures along internal and external edges also has an important influence on bird diversity. Within stands the exact management treatment will be a major factor influencing habitat quality for various species. In young stands this includes the extent to which weeding and inter-row mowing are carried out. In the more mature stands, canopy cover, which influences the amount of understorey foliage, and the quantity of decaying wood are two critical factors.

Even-aged and closely sown plantations can develop as relatively unvaried monocultures with a reduced fauna, in which not all individual species follow the general pattern. Tit species often maintain a fairly constant density in maturing and older woodland and even in young plantations whereas Robins, Wrens and Chaffinches are more abundant where the complexity of the woodland has been able to develop. This is largely down to the availability of habitat options created in old woodland by dead and dying trees, and natural catastrophes allowing light through the canopy to encourage the shrub and field layer to develop. Scrub species such as warblers, Nightingale, Linnets and Bullfinch rely on sufficient light entering a wood to allow thickets and shrubs to develop either within the woodland itself or typically along the woodland fringe with warm open habitats. This kind of profile is indispensable for insects too, such as butterflies and crickets that contribute enormously and fundamentally to the characteristic sights and sounds of a vibrant woodland ecosystem. Also, in coppiced woodlands, the shrub layer associated with an open canopy can be rich and varied in structure and complexity, another way of creating habitat options for birds and other wildlife.

For target species, which may include characteristic species of songbird, consideration should be given to areas on the site that may support semi-natural development of the vegetation. These areas will attract higher densities of species, such as warblers and Nightingale, for which shrub cover is important. Semi-natural development will, over time, encourage the understorey and field layer to provide varied niches for a variety of species. Warm or sheltered woodland edges along open rides and glades, with a habitat profile created to maximise cover, nectar value and shelter along the grassy interface, will provide habitat for flowers, insects, and woodland birds. In maturing woodland, critical factors include standing dead wood through the retention of old and over-mature trees. This component will support insects as food, provide existing or excavated nest sites and also gaps in the canopy that allow light to penetrate to the developing understorey.

Generally, the current site plans are good. They include a range and variety of well-connected habitats, such as: 1) Rough grassland and flower meadow areas, 2) Well established hedges containing large, mature trees, e.g., oak, ash, beech, with fractured branches, holes and, crevices for nesting birds, 3) New hedge planting. 4) Occasional patches of scrub or thicket though mostly this is not apparent. 5) Patches of mature woodland of majestic open character, though with little understory. Areas for consideration include grassland and meadow management (or via arable rotations) to attract breeding Skylark, Grey Partridge (Quail) pollinators and Lepidoptera, and the provision of winter food (triticale, kale, quinoa and millet) around arable sites. Higher densities of species will be encouraged by extensive, varied habitats, including semi-natural developing shrub vegetation. The management of the young plantation woodland by inter-row mowing deserves a mention, in that it will impact upon the complexity of the field layer, creating a thick, uniform sward. The benefits of this practice are uncertain, since a dense sward may exacerbate root competition with very young trees. With taller young trees a growing field layer is unlikely to impact on their growth and development, just so long as the vegetation does not 'over-top' the trees themselves. Meanwhile, there would be added ecological value in tolerating a more varied sward structure, to encourage small mammals and invertebrates. In turn, the inter-row spaces would provide greater valuable as foraging habitat for birds, such as hunting owls, Kestrel or perhaps even Whinchat. Will Woodlands could contribute to populations of species high conservation status, such as:

Woodland: Barn Owl, Nightingale, Song Thrush, Wood Warbler, Willow Warbler, Garden Warbler, Spotted Flycatcher, Tree Sparrow.

Farmland or grassland: Grey Partridge, Barn Owl, Kestrel, Lapwing, Skylark, Dunnock, Song Thrush, Linnet, Reed Bunting Yellowhammer and Corn Bunting.

4.1 Final Considerations

While appreciating the desire to create woodlands of a pleasing character, the woodland habitat profile with field and shrub layers are of immense value for wildlife. Varied habitat conditions are the key to optimising both the aesthetic and conservation quality of the woodlands, for a wider variety of species.

Depending on the level of income expected of the sites, the farmland could be managed equally effectively to the woodland (and in contrast to it) for the sake of evocative, popular and characteristic bird species. Lapwing, Skylark and Barn Owl are three species that would respond to sympathetic management conditions, such as appropriate crop rotations, low-intensity grazing regimes and herb-rich meadow management. Both Yatesbury and Broom Hill have considerable potential in this regard.

The scale of the planting and the contrast between the three sites is fascinating. The future delivery of the woodlands will be dependent on factors affecting differential rates of colonisation among breeding assemblages of birds, such as local populations, habitat composition, disturbance and predation. Tracking changes in the abundance and composition of birds would inform management in a way that would help optimise demands on management and the effectiveness of its delivery towards objectives.

Table 1. A selected list of woodland and farmland species with the potential to occur on the developing Will Woodland sites, given suitable management and assuming they occur within the neighbourhood of each site and hence have a local source populations (see Tables 2, 3, and 4). Key habitats for each species are included. Those recorded on each site during the visit for this report, or very probably occurring are indicated as Y, HM, BH for each site (i.e., Yatesbury, Hazel Manor, Broom Hill respectively), or as **Y, HM, BH** where they have the potential to occur as a breeding species. Most species are selected due to their conservation status (Biodiversity Action Plan (BAP)) or as species that the Trust may be interested in attracting due to their behaviour (marked 'A') song or call (marked 'S').

	Occurrence: Probably, Potentially	Comment: Song ='S' Behaviour='A'	Target species	Key habitat	Other action
Kestrel	Y, HM, BH	BAP		Nest sites, and vole-rich rough grassland habitats.	
Lapwing	Y, BH	BAP	*	Fallows, sparse grassland, bare ground in crops.	
Woodcock	Y, HM, BH	A	*	Coppice or mature woodland with shady bare ground.	
Grey Partridge	Y, HM, BH	BAP	*	Fallows, open bare ground, sparse grassland, crops. Winter food	Winter food
Barn Owl	Y, HM, BH	A, BAP	*	Nest sites and vole-rich grassland.	
Cuckoo	Y, HM, BH	S, BAP	*Declining	Scrub mosaics of Dunnocks (host)	
Turtle Dove	Y, HM, BH	S, BAP	*		
Nightjar	Y, HM, BH	S, BAP	*	Coppice or pine mosaics – free-draining, patches of bare ground.	
Skylark (Woodlark)	Y, BH, HM	S, BAP S, BAP		Fallows, sparse grassland, crops Woodland: open glades – bare ground on sand (possibly chalk).	
Tree Pipit	Y, HM, BH	S, BAP	*	Woodland mosaics with open glades.	
Yellow Wagtail	Y	BAP		Damp meadows, ditches, crops.	
Dunnock	Y	S		Mosaics; hedgerows/ brambles.	
Wren	Y	S		Hedgerows/ brambles.	
Whinchat	Y, BH		*Decline in lowlands.	Grassland/ ruderal vegetation, young plantations or scrub grassland edge.	
Nightingale	(Y, HM, BH)	S, BAP	* Retraction eastwards	Dense young coppice, blackthorn thicket, thick bramble.	
Redstart	HM, BH		*	Mature oak, pine	
Song Thrush	Y, HM, BH	S, BAP	*	Conifer or deciduous thicket mosaics.	
Mistle Thrush	Y, HM, BH	S		Mature trees near gardens or paddocks/pasture.	
Blackbird	Y	S		Varied woodland, lawns, pasture.	
Whitethroat	Y, HM, BH	S		Bramble, gorse scrub, sparse hedges.	

Garden warbler	Y, HM, BH	S	*	Varied understorey, shrubs	
Blackcap	Y, HM, BH	S		Understorey, shrubs	
L. Whitethroat	Y, HM, BH	S		Thick hedges, blackthorn thicket.	
Willow Warbler	Y, HM, BH	S	*Declining		
Chiffchaff	Y, HM, BH	S			
Firecrest	Y, HM, BH		Expanding its range.	Arboreta; exotic conifers: Douglas; box, yew.	
Starling	Y, HM, BH	S, BAP			
Tree Sparrow	Y, HM, BH	BAP	*	Large old hedgerows with mature trees (nestboxes)	Winter food
Hawfinch	Y, HM, BH	(Provis. BAP)	*	Tree seeds: Hawthorn/blackthorn thicket (bare ground), coppice, yew and mature beech/hornbeam.	
Linnet	Y, HM, BH	BAP	*	Young plantations; farmland edge; gorse, hedges	Winter food
Redpoll	Y, HM, BH	BAP	*	Alder, birch, larch	Winter food
Bullfinch	Y, HM, BH	BAP	*	Orchards, mixed scrub, varied hedgerows, weed seeds.	
Yellowhammer	Y, HM, BH	S, BAP	*	Thick hedges or scrub	Winter food
Reed Bunting	Y	BAP	*	Sparse hedges, rank veg., ditches	Winter food
Corn Bunting	Y BH	S, BAP	*	Open landscape; fallows, bare ground, sparse grassland, crops.	Winter food

Yatesbury: images.



Orchard and expansive open pasture



Plantation and ungrazed/managed grassland (wetter)



Protected hedgerow planting, with un-grazed margin.



Protected plantation inside the deer fenced, existing Woodland/ hedges outside.



Mixed broad-leaved plantation, inter row mowing.



Conifer plantation, inter row mowing.

Table 2. Yatesbury: woodland and farmland species recorded in the surrounding 10 km square area.

Species	Birds present according to the Breeding Bird Survey		No. BBS squares recorded in	*1993 'New' Atlas breeding records (= pre 1993 records.
	Maximum count across all occupied BBS squares	Last year when recorded		
Barn Owl				*
Blackbird	37	2008	14	*
Blackcap	13	2008	14	*
Blue Tit	32	2008	14	*
Bullfinch	12	2008	14	*
Buzzard	10	2008	13	*
Carrion Crow	67	2008	14	*
Chaffinch	35	2008	14	*
Chiffchaff	22	2008	14	*
Corn Bunting				(*)
Coal Tit	6	2008	13	*
Collared Dove	23	2008	14	*
Cuckoo	2	2005	2	*
Curlew	2	2000	2	*
Duncock	18	2008	14	*
Fieldfare	17	1998	2	*
Garden Warbler	7	2008	10	*
Goldcrest	9	2008	14	*
Goldfinch	20	2008	14	*
Grasshopper Warbler				(*)
Great Spotted Woodpecker	6	2008	13	*
Great Tit	20	2008	14	*
Green Woodpecker	4	2008	12	*
Greenfinch	27	2008	14	*
Grey Partridge				*
Hawfinch				(*)
House Sparrow	131	2008	14	*
Jackdaw	41	2008	14	*
Jay	6	2008	14	*
Kestrel	4	2003	6	*
Lapwing	2	2000	2	*
Lesser Redpoll	2	2005	4	*
Lesser Spotted Woodpecker	1	1996	1	*
Lesser Whitethroat	1	2008	3	*
Linnet	19	2008	14	*
Little Owl				*
Long-Tailed Tit	7	2008	12	*
Magpie	20	2008	14	*
Marsh Tit	3	2005	4	*
Meadow Pipit	11	2005	5	*
Mistle Thrush	7	2008	14	*
Nightingale				*
Nightjar				(*)

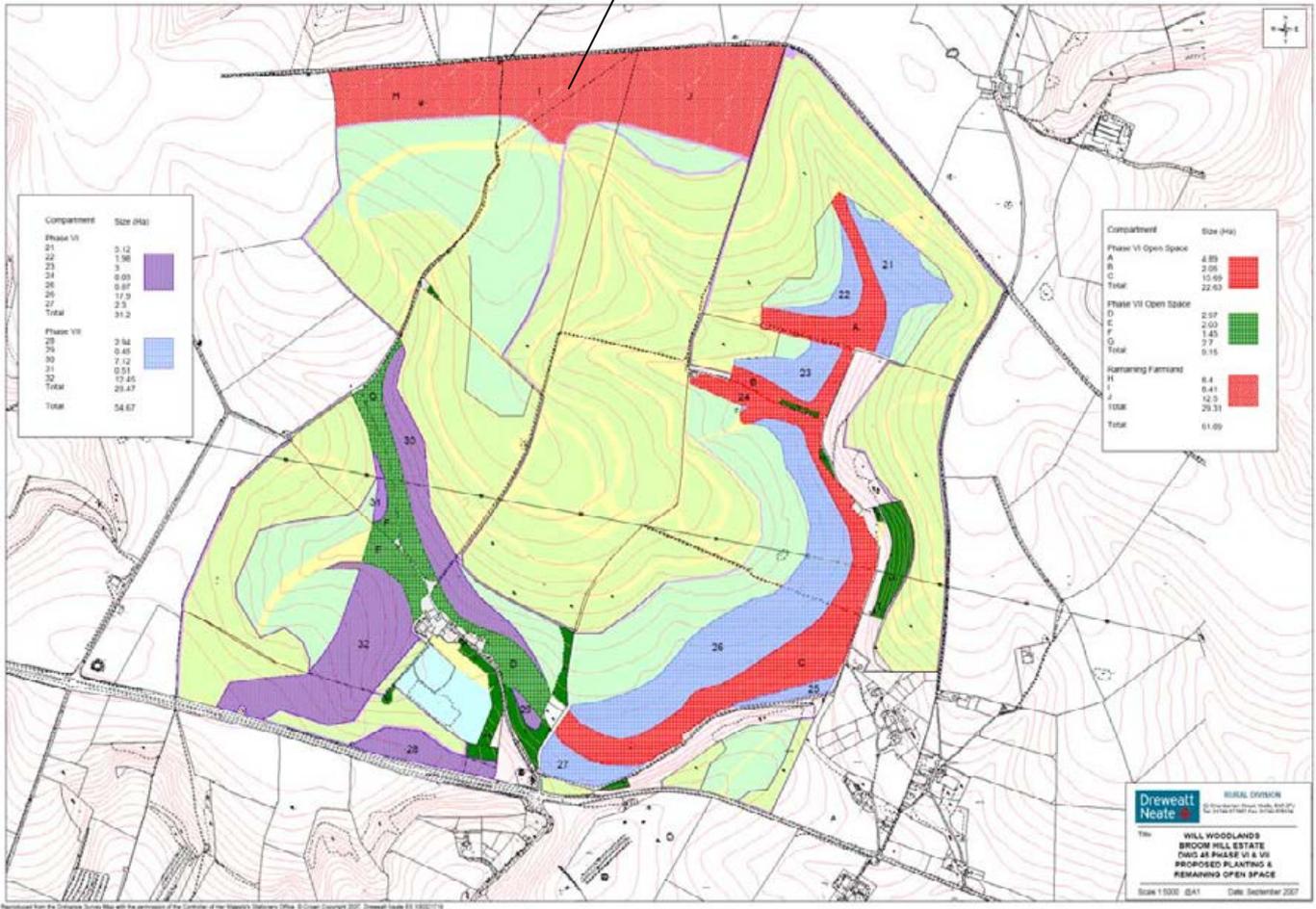
Nuthatch	9	2008	14	*
Pheasant	9	2008	9	*
Pied Wagtail	5	2008	12	*
Quail				(*)
Raven	5	2008	7	*
Redpoll				*?
Redstart				(*)
Reed Bunting	1	2008	5	*
Robin	40	2008	14	*
Rook	110	2008	14	*
Siskin	1	1998	1	*
Skylark	24	2008	14	*
Song Thrush	21	2008	14	*
Sparrowhawk	1	1997	3	*
Spotted Flycatcher	3	2008	5	*
Starling	146	2008	14	*
Stock Dove	14	2008	10	*
Stonechat				*
Tawny Owl	1	2004	2	*
Tree Pipit	3	1995	2	*
Treecreeper	7	2008	12	*
Tree Sparrow				*
Whinchat				*?
Whitethroat	7	2008	14	*
Willow Tit	1	1994	1	*
Willow Warbler	25	2008	14	*
Wood Pigeon	46	2008	14	*
Wood Warbler				(*)
Wren	66	2008	14	*
Yellowhammer	20	2008	10	*
Yellow Wagtail				(*)

* Indicates that song was heard or there was behaviour or information available to indicate breeding.

*? Indicates that the species was recorded but the breeding status is unknown.

Broom Hill site map.

Arable crops



1 km

Broom Hill: images.



Showing extensive phases of planting over the last *ca*10 years, including new plantations on the lower slopes. The trees are mainly broad-leaved species but included is an area of dense conifer growth. Inset: there are relatively small areas of existing mature woodland.



Almost 340 ha of plantations and rides, plus some areas allocated to future meadows, in addition open arable farmland



The hilltop 'plateau' includes an area of open arable farmland.

Table 3. Broom hill: woodland and farmland species recorded in the surrounding 10 km square area.

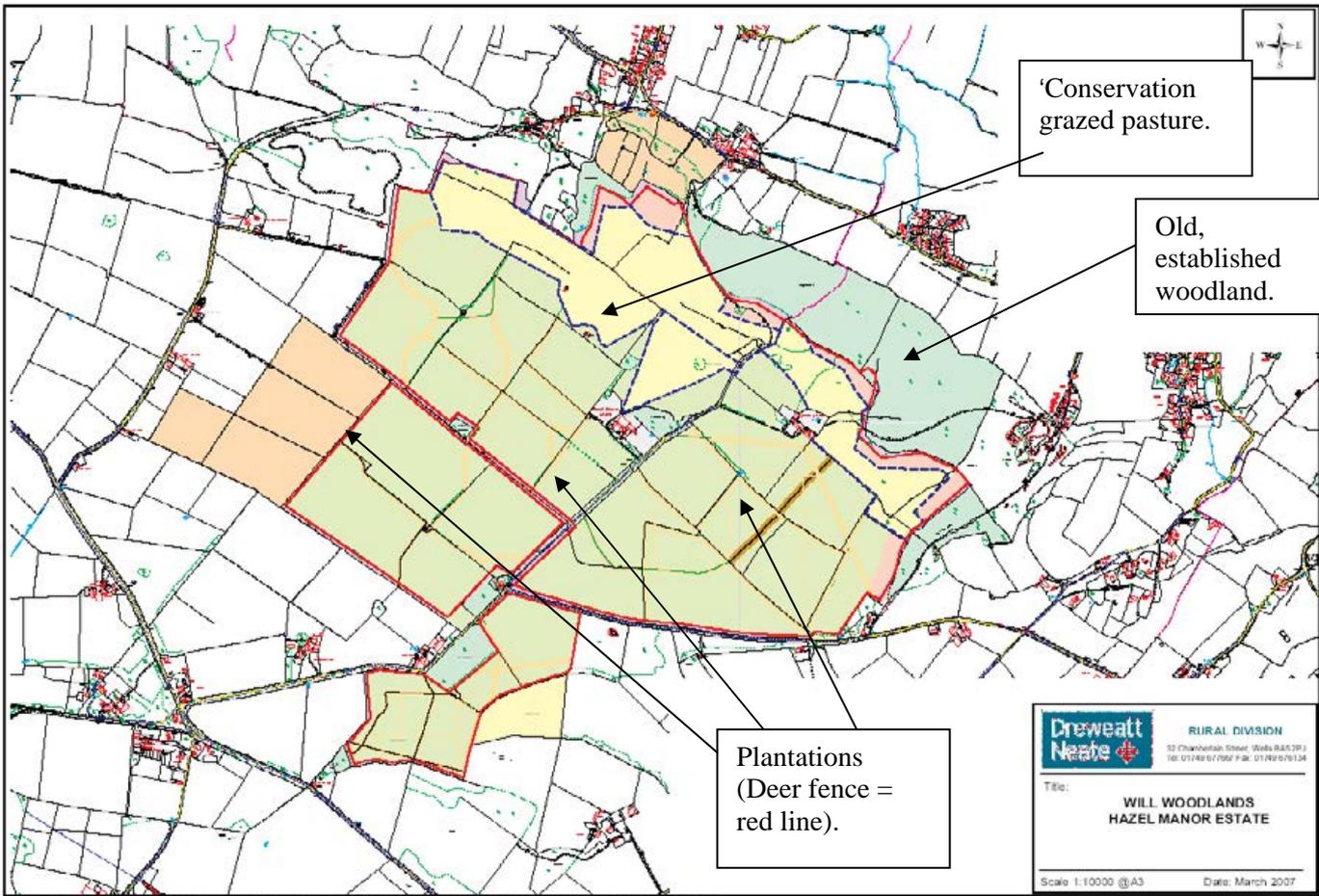
Species	Birds present according to the Breeding Bird Survey			*1993 'New' Atlas breeding records (=pre 1993 record.
	Maximum count across all occupied BBS squares	Last year when recorded	No. BBS squares recorded in	
Blackbird	13	2008	13	*
Blackcap	4	2008	7	*
Blue Tit	11	2008	12	*
Bullfinch	1	2008	2	*
Buzzard	5	2008	13	*
Carrion Crow	49	2008	13	*
Chaffinch	18	2008	11	*
Chiffchaff	10	2008	13	*
Cirl Bunting				(*)
Collared Dove	2	2007	2	*
Cuckoo	1	2007	2	*
Curlew	2	2006	3	*
Duncock	11	2008	13	*
Garden Warbler	1	2007	1	*
Goldcrest	2	2004	1	*
Goldfinch	4	2008	6	*
Grasshopper Warbler				*
Great Spotted Woodpecker	1	2000	1	*
Great Tit	9	2008	10	*
Green Woodpecker	1	2008	3	*
Greenfinch	11	2007	8	*
Grey Partridge				*
House Sparrow	4	2008	3	*
Jackdaw	38	2008	13	*
Jay				*
Kestrel	1	2004	3	*
Lapwing	5	2006	5	*
Lesser Whitethroat	1	2007	1	*
Lesser Spotted Woodpecker				*
Linnet	34	2008	13	*
Little Owl				*
Long-Tailed Tit	2	2003	2	*
Magpie	5	2008	8	*
Marsh Tit				*
Meadow Pipit	14	2008	13	*
Mistle Thrush	3	2007	2	*
Nightingale				(*)
Nightjar				(*)
Nuthatch				*
Pheasant	20	2008	12	*
Pied Wagtail	6	2007	10	*
Quail				(*)
Raven	1	1998	1	*

Red Kite	1	2007	1	
Reed Bunting	12	2008	12	*
Robin	14	2008	12	*
Rook	20	2008	7	*
Skylark	12	2008	13	*
Song Thrush	4	2007	4	*
Sparrowhawk	2	2004	2	*
Spotted Flycatcher	1	2002	1	*
Starling	27	2008	6	*
Stock Dove	1	1995	1	*
Stonechat	11	2007	11	*
Tawny Owl	1	1999	1	*
Treecreeper	1	2007		*
Tree Pipit				*
Tree Sparrow				*
Turtle Dove	1	1996	1	*
Whinchat	2	1999	1	*
Whitethroat	10	2008	12	*
Willow Tit				*
Willow Warbler	15	2007	8	*
Wood Pigeon	12	2008	13	*
Wood Warbler				*
Wren	14	2008	10	*
Yellow Wagtail	1	1995	1	*
Yellowhammer	3	2007	4	*

*Means that song was heard or there was behaviour or information available to indicate breeding

*? Means the species was recorded but the breeding status is unknown

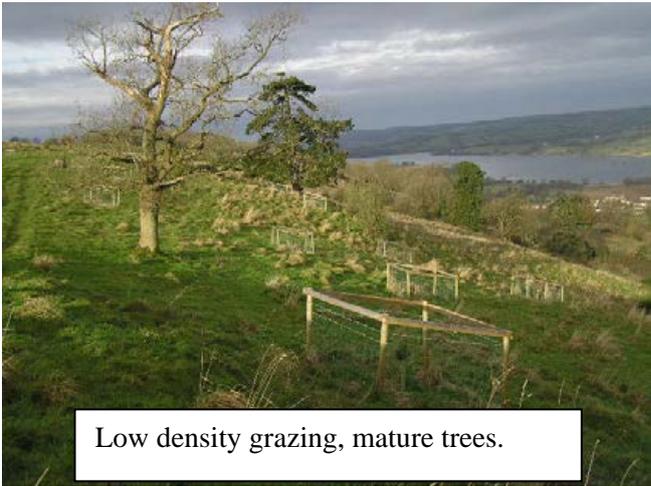
Hazel Manor: site map.



Hazel Manor: images - mature woodland & grassland.



Open 'parkland' habitat.



Low density grazing, mature trees.



Mature sycamores.



Damp ash woodland with standing dead wood.



Existing old coppiced woodland.

Hazel Manor: images - deer-fenced plantations.



Extensive plantations of varying age, tree species composition (mainly broadleaved) and tree density.

Table 4. Hazel Manor: woodland and farmland species recorded within the surrounding 10 km square area.

Species	Birds present according to the Breeding Bird Survey			*1993 'New' Atlas breeding records (=pre 1993 records.
	Maximum count across all occupied BBS squares	Last year when recorded	No. BBS squares recorded in	
Barn Owl	1	2008	1	*
Blackbird	57	2008	14	*
Blackcap	22	2008	14	*
Blue Tit	39	2008	14	*
Bullfinch	7	2008	14	*
Buzzard	8	2008	14	*
Carrion Crow	87	2008	14	*
Chaffinch	63	2008	14	*
Chiffchaff	34	2008	14	*
Coal Tit	9	2008	14	*
Collared Dove	27	2008	14	*
Cuckoo	4	2008	14	*
Dunnock	19	2008	14	*
Garden Warbler	12	2008	14	*
Goldcrest	10	2008	14	*
Goldfinch	31	2008	14	*
Grasshopper Warbler	10	2005	3	*
Great Spotted Woodpecker	7	2008	14	*
Great Tit	27	2008	14	*
Green Woodpecker	9	2008	14	*
Greenfinch	39	2008	14	*
Grey Partridge				*
Hawfinch				(*)
Hobby	1	2008	4	*
House Martin	300	2008	14	*
House Sparrow	133	2008	14	*
Jackdaw	372	2008	14	*
Jay	6	2008	12	*
Kestrel	5	2008	14	*
Lapwing	4	2007	8	*
Lesser Spotted Woodpecker	1	2002	3	*
Lesser Whitethroat	7	2008	13	*
Linnet	54	2008	14	*
Little Owl	3	2008	11	*
Long-Tailed Tit	16	2008	14	*
Magpie	39	2008	14	*
Marsh Tit	3	2006	5	*
Meadow Pipit	7	2008	13	*
Mistle Thrush	10	2008	14	*
Nightingale	1	1995	1	*
Nightjar				(*)
Nuthatch	3	2008	11	*
Pheasant	16	2008	14	*

Pied Flycatcher	1	2005	1	*
Pied Wagtail	10	2008	14	*
Quail	1	2005	1	*
Raven	6	2008	7	*
Redstart	9	2008	5	*
Redpoll				(*)
Reed Bunting	9	2008	14	*
Robin	49	2008	14	*
Rook	141	2008	14	*
Siskin	3	2008	2	*?
Skylark	27	2008	14	*
Snipe	1	2006	1	*
Song Thrush	20	2008	14	*
Sparrowhawk	3	2008	13	*
Spotted Flycatcher	3	2008	12	*
Starling	172	2008	14	*
Stock Dove	23	2008	14	*
Stonechat	1	2007	2	*
Swallow	320	2008	14	*
Tawny Owl	1	2008	6	*
Tree Pipit	3	2006	3	*
Treecreeper	4	2008	14	*
Tree Sparrow				*
Whinchat	3	2008	2	*
Whitethroat	17	2008	14	*
Wood Warbler				*
Willow Warbler	20	2008	14	*
Wood Pigeon	74	2008	14	*
Willow Tit				(*)
Wren	60	2008	14	*
Yellow Wagtail	1	1997	2	*
Yellowhammer	25	2008	14	*

*Means that song was heard or there was behaviour or information available to indicate breeding. *?
Means the species was recorded but the breeding status is unknown.