

The status of migrant woodland specialists Redstart, Spotted Flycatcher & Pied Flycatcher in BCA and other woodlands in Buxton

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1. Introduction

Woodland specialist birds are species restricted to or highly dependent on particular woodland habitats, and as a group have suffered significant declines, whereas woodland generalists tend to have more stable or increasing populations. Data from the 2021 Woodland Bird Index, shows that populations of woodland specialists are 53% lower than in 1970.

Appropriate management of woodlands is important for protecting diversity in birds. Specialists have favoured niche habitats and often require particular woodland structure. Under-management of woodlands can lead to loss of clearings, glades and rides and changes in age structure, and is an important cause of decline, alongside woodland fragmentation. Reductions of deadwood, wet features and invertebrate populations are further causes of decline. In some situations predation can be a limiting factor. Climate change can affect breeding times and productivity, and creates issues on migration. All three species in this report may be affected by issues outside the UK in the birds' wintering grounds, but the focus here is local populations and management.

The three species chosen for the report, whilst not the only migrant woodland specialists in Buxton and the surrounding area, represent Birds of Conservation Concern (BoCC) with relatively low populations nationally.

Breeding Bird Surveys have been conducted since 2020 in BCA woods, covering all species in certain years and migrants throughout the period. Where possible, territories of the three focus species have been revisited to assess breeding success. In 2023, Burbage Edge Plantation has been studied in addition to BCA woods. The report presents data from the surveys, and explores ways to improve monitoring and habitats for these species.

1.1 Redstart, Spotted Flycatcher & Pied Flycatcher in the UK

All three species are short lived (typical lifespan of 2 years with 2 breeding seasons) and winter in different regions of Africa. These species face more threats than resident birds, and it can be harder for migrants to adapt to phenological changes due to climate change.

Certain woodlands can support all three species, typically ancient oak woodland in the uplands, although they have niche habitat requirements within the woodland. Spotted Flycatcher is the most widespread as they can occur in more habitat types, but have suffered the greatest decline. Redstart and Pied Flycatcher are more common in the north and west.

1.12 Redstart (*Phoenicurus phoenicurus*)

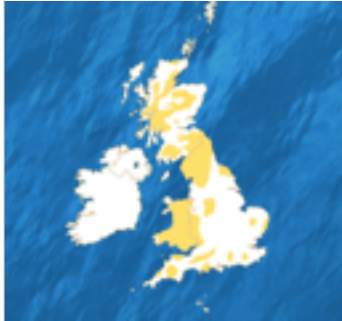
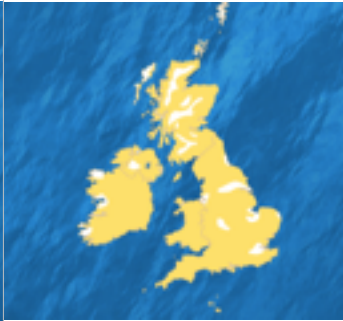
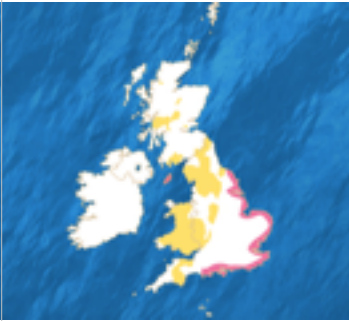
Redstarts breed across the UK, with strongholds in the north and west. Redstart is a BoCC Amber Listed species that has undergone a range contraction of 31% (1968-2011). The population recovered from severe drought in wintering grounds in the 1960s, but has suffered recent fluctuations and rainfall patterns in wintering grounds are a continuing issue. The UK population is around 135,000 pairs.

Causes of decline include loss of older trees and deadwood, increased shrub layer e.g. holly leading to loss of open woodland structure, lack of low-intensity grazing and agricultural intensification close to breeding grounds.

It is a bird of mature deciduous woodlands with an open structure, woodland edges, and in Derbyshire also frequently breeds in limestone dales. There is a preference for heavily wooded landscapes. Upland landscapes are favoured. Redstart are mainly insectivorous, an important part of the diet made up of caterpillars, larvae and flies.

Redstart are cavity nesters, using tree holes, walls, fenceposts, and nest boxes. They are usually single brooded, with an average clutch size of 6-7 eggs, taking c.28 days from incubation to fledging.

Table 1.1 UK Populations

	Redstart	Spotted Flycatcher	Pied Flycatcher
Population	135,000	41,500	22,000
Status BOCC	Amber Listed (since 1996)	Red Listed (since 1996)	Amber Listed (Moved from Red 2021)
Population change 1995-2021	+2%	-68%	-56%
Population change 2011-2021	-21%	-35%	0
Distribution			
Breeding zones - yellow			
On passage - red			
			

1.13 Spotted Flycatcher (*Muscicapa striata*)

The estimated breeding population of Spotted Flycatchers in the UK is 41,500 pairs. This species has suffered one of the greatest declines of woodland specialists.

Between 1967 and 2012, the population dropped by 89%, putting them on the BoCC Red List and Biodiversity Action Plan Priority Species list. The reasons for decline are not fully understood, but possible causes include climate change, insect decline, lower clutch sizes and chick survival due to degradation of habitat, and in some cases, predation. A decrease in the ratios of juveniles to adults at constant effort monitoring sites (where birds are ringed) suggest lower productivity. Spotted Flycatchers have suffered declines in mainland Europe too, with a decrease of 59% between 1980 and 2005, and across habitat types in the UK. This suggests there are likely to be factors on stop-over and wintering sites also

leading to declines. Lack of suitable nest sites is not thought to be a significant issue for the species in the UK.

Favouring woodland edges and clearings in a range of woodland types, Spotted Flycatcher can also be found in parks and gardens, and in Derbyshire in limestone dales. The nest site is usually on a tree ledge, bough, cliff ledge or wall, and they can take to open fronted nest boxes or even coconut shells!

Even though Spotted Flycatchers are one of the latest migrant birds to return, they pair up and start breeding soon after arrival. From Nest Record Scheme data, it is estimated that 20% Spotted Flycatchers are double brooded, and some can have more attempts. Their strategy is to have eggs and young in the nest for a very short time, usually taking from 22 days from the first egg laid to chicks fledging. The average clutch size is 4-5 eggs.

Diet of the Spotted Flycatcher is mainly flying insects (flies, butterflies, bees and wasps). Glades, clearings and rides with diverse vegetation are favoured due to invertebrate populations and suitable perches for viewing and launching to catch insect prey.

Table 1.2 Breeding information (Ferguson-Lees *et al* 2011)

	Redstart	Spotted Flycatcher	Pied Flycatcher
Clutch size	6-7	4-5	6-8
Incubation time	12-14 days	12-14 days	12-13 days
Hatching to fledging	14-15 days	10-17 days	c16 days
Number of broods	1	1-2	1
Natural nest	Tree cavities and holes, walls, fenceposts	Tree ledges, walls, boughs, tree crevices	Tree cavities and holes
Nest height	0-3m	1.5 - 10m	Usually below 3m
Nest box type	28mm hole standard tit box up to 50mm hole	Open fronted	28mm hole, standard tit box

1.13 Pied Flycatcher (*Ficedula hypoleuca*)

The UK population is estimated at around 22,000 pairs. Pied Flycatcher is amber listed, with the main population decline occurring in the 1990s and 2000s. The main cause of the decline is uncertain but thought to be linked to changes in the birds' wintering grounds, with reduced breeding productivity also affecting numbers.

The favoured habitat of the Pied Flycatcher is upland oak woodland, and they are found in good numbers in suitable woods in Derbyshire. Oak provides primary habitat for this species due to the number of caterpillars it supports which are usually the main food for chicks. Wood Ants are often found in ancient oak woodland, and provide additional benefit as a food source for ground-feeding adults. Bilberry can be important as a ground flora species, because of the moths and other insects that it attracts.

Natural nest sites include tree cavities and old woodpecker holes, but nest boxes are much preferred where available. Pied Flycatchers are usually single brooded, with an average clutch size of 6-8 eggs, taking c.29 days from laying to fledging.

Table 1.3 UK Breeding Habitats

	Redstart	Spotted Flycatcher	Pied Flycatcher
Woodland types	Mature woodland Broadleaved Occasionally coniferous Scrub (limestone dales) Hedgerow Well wooded landscape	Mature woodland Broadleaved Wet woodland Coniferous	Mature woodland Predominantly oak Occasionally ash Occasionally coniferous Well wooded landscape
Woodland structure	Open with field layer, some sparse Woodland Edge No shrub layer or Scattered scrub (limestone dales)	Glades, clearings or rides Graded woodland edges Tall trees	Open structure with field layer Sparse or no shrub layer Closed canopy
Elevation	Upland	Upland Lowland	Upland

2. Survey methods

Redstart, Spotted Flycatcher & Pied Flycatcher in Buxton

In 2020, surveys were conducted in Grin Low, Corbar, Gadley, Sherbrook and Shay Woods, using methods outlined in the BTO Breeding Bird Survey. The surveys took place early in the morning when birds are most active. Most birds are identified by sound and every singing male or pair is recorded and mapped. If identified, nest sites are also mapped.

From 2021 to 2023, surveys targeted woodland specialists in Grin Low, Corbar and Gadley including the three species in this report, with a full breeding bird survey repeated in Grin Low in 2023.

A territory is recorded where a male is singing and/or a pair is repeatedly present. Once territories have been found for Redstart and Spotted Flycatcher, they are revisited each year to check for presence and breeding because these species can be highly site faithful. Surveying more widely around the regular sites can find birds in new locations.

Nesting attempts are monitored using BTO guidance to reduce disturbance. Breeding is confirmed by watching adult behaviour to see if they visit a nest site with building material or food. Even if a nest can't be found, continued behaviours which indicate breeding (such as agitation and food carrying) create a positive record. Eggs or chicks are counted for the BTO Nest Record Scheme if the nest can be seen into using an endoscope camera. Successful breeding is evident if recently fledged birds are seen.

Other sites in Buxton have been surveyed to provide a comparison to BCA woodlands. This includes Burbage Edge Plantation (moorland edge shelter belt woodland) and Ferneydale (limestone dale).

This report focusses on the results of 2023 surveys with reference to previous years.

3. Results

Table 3 Breeding at local sites - most recent records

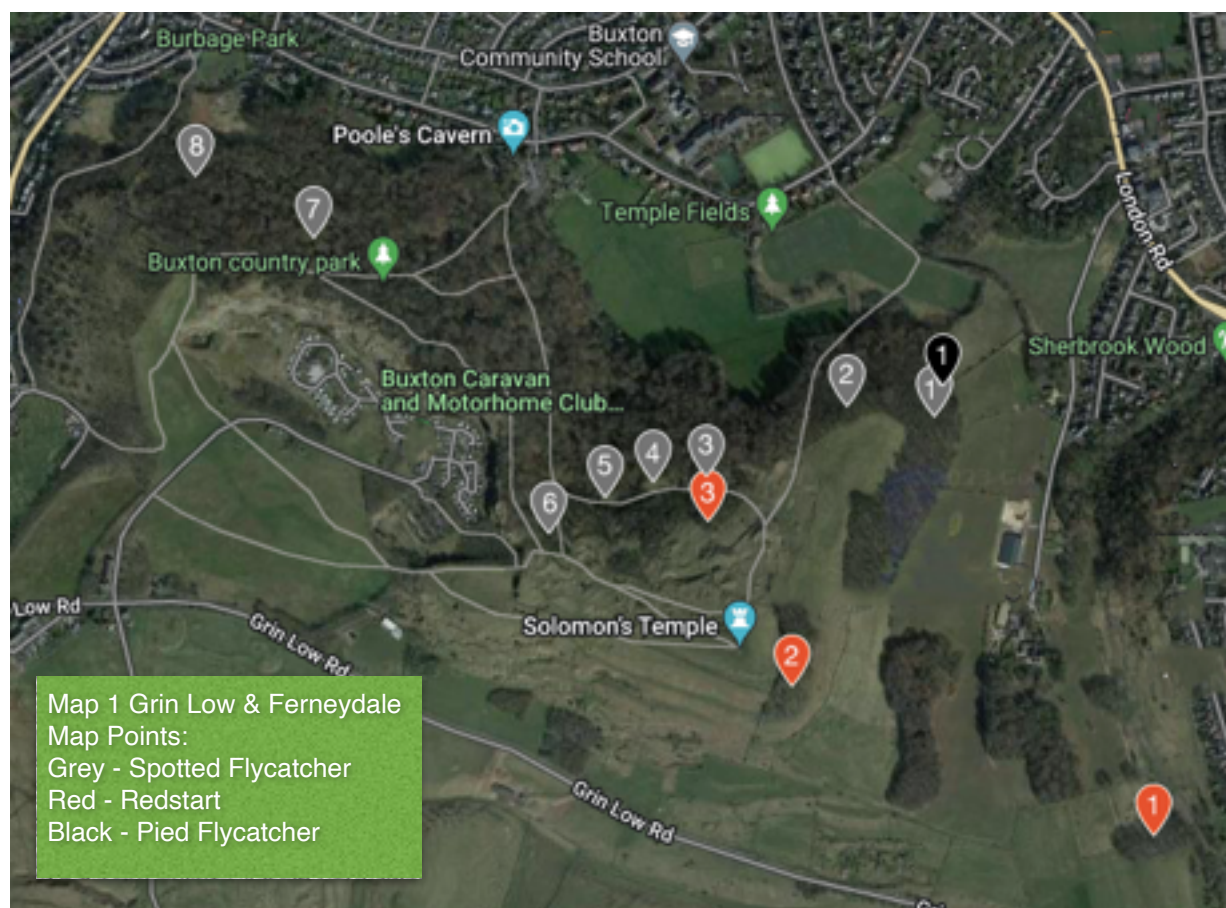
	Redstart	Spotted Flycatcher	Pied Flycatcher
Grin Low	2023	2023	Visited April/May 2023
Temple Wood	2023	-	-
Gadley	-	2021	-
Corbar	-	2021	-
Burbage Edge	2023	2023	-
Lightwood	-	2023	-
Ferneydale	2022	2011	

Grin Low is the only site in Buxton where all three species have been recently recorded, although there are no sites where all three species currently breed. Although the habitats of Grin Low and Burbage Edge are very different in terms of woodland structure, both Redstart and Spotted Flycatcher breed there in good numbers, whereas there have been losses from other sites. For both Redstart and Spotted Flycatcher, there have been reductions in the number of breeding locations.

Map 3.11 Grin Low & Ferneydale

Singing males/territories 2023

[Link to view Google Map](#)



Map 3.12 Burbage Edge Plantation

Singing males/territories 2023

[Link to view Google Map](#)



Map 3.2 Grin Low

Spotted Flycatcher Nest Sites (SFNSa-g) 2023

[Link to view Google Map](#)



Table 3.2 Redstart Observations 2023

Numbers refer to red points on Maps 3.11 & 3.12

Date	Activity
06/05/2023	1. Singing male Ferneydale 'Top Wood' 2. Pair in Temple Wood 3. Singing male just above ride Grin Low
31/05/2023	4. Pair mobbing Tawny Owl 5. Singing male top edge 6. Singing male
10/06/2023	2. Nest found in Temple Wood, adults feeding chicks
21/06/2023	2. Temple Wood pair seen in top of Higher Plantation with recently fledged juveniles.
06/07/2023	4. Pair with 3+ juveniles 6. Contact calls suggest successful breeding

Table 3.2 Spotted Flycatcher Observations 2023

Numbers refer to territorial males (grey points on Maps 3.11 & 3.12)

SFNSa-f refer to Spotted Flycatcher Nest Sites (points on Map 3.2)

Date	Activity
06/05/2023	3. First male of the year singing between the ride and Go Ape glade Grin Low
31/05/2023	9 & 10. 2 singing males in Burbage Edge Plantation
01/06/2023	1-8. 8 singing males recorded during breeding bird survey. SFNSd. Pair 2 completing nest building on tree ledge in the ride Grin Low
09/06/2023	SFNSd. No activity around nest in ride suggests failure, probably Grey Squirrel predation. 3. Singing male seen in ride the previous visit not showing. 4. Pair seen carrying nesting material. 2. Male in Higher Plantation agitated and frequently singing suggests breeding.
11/07/2023	SFNSc. Some nest material in open fronted box SF2 in ride. No sign of adults, either abandoned or predated nest.
20/07/2023	SFNSf. 2 pairs with recently fledged young in west end of Grin Low, one with 3+. SFNSg. Another pair seen in glade where they were presumably breeding. Single bird sighted in mixed tit and warbler flock in the ride, probably juvenile.
24/07/2023	9 & 10. 2 pairs still present in Burbage Edge Plantation. First pair still in location where nesting behaviour was observed, but no sign of a nest or fledged young. Second pair seen right on the moorland edge with 4 recently fledged young.
01/08/2023	SFNSa. Adults with at least 2 juveniles in Higher Plantation Grin Low
08/08/2023	SFNSb. Completed nest found in open fronted box SF1. Nest intact, probably successful as fledged juveniles calling nearby. The box hadn't been checked earlier in 2023 as birds not observed here in June.

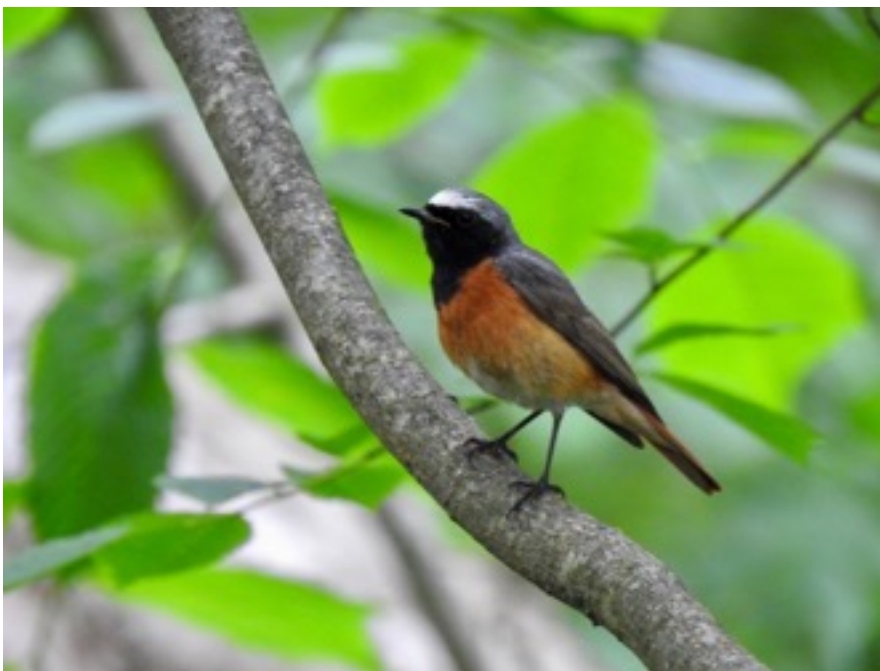
Table 3.3 Grin Low & Burbage Edge Breeding Habitat Characteristics

Grey text denotes historic sites without confirmed breeding records in 2023

	Redstart	Spotted Flycatcher	Pied Flycatcher
Woodland types and tree species	Mature woodland Ash, Sycamore, Beech, Wych Elm Scrub (limestone dales)	Mature woodland Ash, Wych Elm, Sycamore, Beech Wet woodland	(Territorial male present, did not breed) Mature woodland Ash, Wych Elm, Sycamore
Woodland structure	Open with field layer No shrub layer Scrub (limestone dale)	Glades, clearings or rides Tall trees	Continuous field layer Little or no shrub later
Locations	Grin Low Upper woodland edge Small hilltop woodland Burbage Edge Moorland edge wood Ferneydale Woodland patch (2021) Limestone Dale (2022) Cunning Dale Limestone Dale	Grin Low Glades & clearings Ride Higher Plantation Burbage Edge Moorland edge wood Gadley (2020-22) Wet woodland Ferneydale (2011) Limestone Dale	Grin Low Higher Plantation

4. Discussion

4.1 Redstart



Redstarts are locally distributed in Buxton within two distinct habitat types: upland woodland and limestone dales.

2-3 pairs were recorded breeding in Ferneydale from 2020 to 2022, but breeding has not been confirmed in 2023 and numbers in the limestone dale at this site seem to have declined. Redstart have been recorded consistently in Cuningdale, another limestone dale, but the site has not been surveyed for this report.

Image 4.1.1 Male Redstart in Higher Plantation 21st June 2023

Singing males, pairs and fledged young have been recorded on the top edge of Grin Low above The Ride 2020-2023, but a nest site has never been located in this part of the wood.



Image 4.1.2 Redstart nest entrance, Ash in Temple Wood

A pair in a patch of woodland closer to Solomon's Temple (named Temple Wood in this report) have bred successfully in each of the four survey years. This is a woodland of Sycamore, Beech, Ash & Wych Elm with no shrub layer, grassy field layer and seasonally grazed by horses. In 2021, a pair nested in a tree hole. In 2023, a nest was located below 0.5m in an Ash tree with a long natural crevice (Image 4.12).

Once the pair had fledged their young in 2023, the family group was recorded in the top of Higher Plantation.

In 2023 the highest number of Redstarts was recorded in Burbage Edge Plantation with 3 pairs, 2 of which successfully fledged young. Redstarts are primarily a bird of upland habitats, and this site is on the moorland edge, with one record from a denser area of the woodland, and two from zones where the trees are well spaced (Image 4.21). The field layer is continuous and grazed, and there is no shrub layer.

There are similarities between both confirmed Redstart breeding habitats in 2023 - no shrub layer, grazed field layer, mature trees with suitable nest holes, including dead wood.

Horse grazing adjacent to the top edge of Grin Low and Temple Wood is maintaining preferred Redstart habitat with no shrub on the woodland edge, and also increases flying insect numbers.

More intense survey work is required to locate Redstart nests in Grin Low itself. There are nest boxes on the top edge of the wood specifically targeting Redstart, but have only been used by Great Tit and Robin. More nest boxes could be provisioned, but bunging the holes until Redstarts return may be necessary to encourage occupancy.

4.2 Spotted Flycatcher

Buxton has an important breeding population of Spotted Flycatcher. Surveys since 2020, have confirmed their presence in 3 of the woodlands owned by Buxton Civic Association - Grin Low, Corbar and Gadley. They are also recorded as breeding in Lightwood and Burbage Edge Plantation, and bred at Ferneydale in the past. The species once bred in gardens and parks when the population was larger, but none have been recorded in these habitats in Buxton in the 4 years of survey work.

A pair of Spotted Flycatchers were recorded during a Breeding Bird Survey of Corbar in 2020 on the steep slope above the Corbar Woods Lane entrance, but there was no evidence that they bred and they haven't been recorded since. There is a stark absence of ground flora in the part of the woodland they were sighted and the habitat appears unsuitable for breeding. Creation of glades and increased ground flora in Corbar would improve habitat for Spotted Flycatcher by increasing invertebrate numbers. The mature trees are likely to provide suitable nest sites.



Image 4.2.1 Juvenile Spotted Flycatcher, Burbage Edge Plantation 24th July 2023



Image 4.2.2 Burbage Edge Plantation - Spotted Flycatcher breeding zone 2023

Spotted Flycatchers were also present in 2020 and 2021 in Gadley Wood in the area of the pond, for sufficient time to suggest breeding, but they have been absent in 2022 and 2023. The shrub layer may have become denser, making foraging for flying insects more difficult. Creating a more defined clearing around the pond may be of benefit.

Spotted Flycatchers have successfully bred in Burbage Edge Plantation (Image 4.21). In 2023, 2 pairs were recorded with one seen with at least 4 fledged young on the 24th July. This is a very different habitat to any of the BCA woodlands. It is on the moorland edge, and the woodland is regularly grazed by sheep and cattle. There is very little regeneration because of this, creating a woodland of very open structure with a constant field layer high quantities of dead wood and high invertebrate numbers. The livestock also encourage many invertebrates, and therefore plentiful food supply. Long term, this habitat is likely to degrade without a change in management.

Grin Low routinely holds the highest population of Spotted Flycatchers, with an apparent increase in breeding numbers in 2023 compared to previous survey years. It is considered to be a very important breeding site when compared to other locations within Derbyshire and the area covered by Sorby Breck Ringing Group, where many locations have suffered recent declines.

Managed felling in some areas of the woodland in recent years has created more glades, with Spotted Flycatcher recorded as breeding in three cleared areas in 2023, in addition to The Ride. They favour these areas as the more varied vegetation structure increases the number of flying invertebrates. Of the 3 survey years, 2023 had the highest number of records, with 8 territories located in Grin Low early in the season, compared to 4 in 2022, 3 in 2021 and 3 in 2020.



Image 4.2.3 Open fronted nest box SF2 (Map 3.2 SFNSc) in Grin Low with completed nest, July 2022

Spotted Flycatchers are highly site faithful, and birds have been recorded returning to the same spots in Grin Low each year, including continued use of territory identified by an RSPB survey in 1992. A pair will sometimes even use the same nest site for several years, which is unusual for an open nesting passerine species.

In Grin Low, natural nests have been observed in tree crevices and on tree ledges. Natural nest sites here are usually at heights of at least 5

metres due to the availability of suitable sites on trees. While Grin Low has suitable nest sites throughout the wood, nest boxes allow for a higher level of monitoring. Since 2021, open fronted boxes have been put up at 4 locations in Grin Low. Nest boxes have been placed at around 3 metres which is an acceptable height for nest site selection, and can be easily looked into with an endoscope camera. Due to exposure of Spotted Flycatcher natural nest sites, boxes do not increase the likelihood of predation.

In 2020, Spotted Flycatchers successfully fledged young from an old tit box with an entrance enlarged by squirrel gnawing, located just above The Ride. A new nest box above The Ride (Map 3.2, SFNSb) contained 4 chicks on 7 July 2022, but unfortunately the chicks were predated, evidence suggesting by weasel. In early July 2023, the same box contained a partial nest that was either incomplete or predated. Box SF1 located near Go Ape Glade, was found to contain a complete nest on 8 August 2023 after fledged young were located in the area, presumably having fledged from that nest.

Due to their nesting habits, Spotted Flycatchers are an easy target for many predators. Studies have shown that nests in gardens are usually more successful than those in woodlands, as there are often less ground-based predators such as mustelids and squirrels. Grey Squirrels can be a significant predator of canopy nesting species such as Chaffinch and Spotted Flycatcher. BTO Nest Record data shows that squirrel predation is widespread but can be variable, and can be severe in certain locations. Some nests of Spotted Flycatcher have failed in the ride in Grin Low in 2023, and this is thought to be due to squirrel predation - an increase in numbers since winter in that part of the wood was observed.

Studies show that Jays are the most common avian predator, in one case accounting for 60% of nest predation. Jays are not known to breed in Buxton, but they are increasing in the surrounding area and there have been a few sightings in the town including one in Grin Low in 2023.

More in-depth monitoring could be undertaken at Grin Low, as the population is relatively dense. This could include capturing and ringing adults (under BTO license) to get a better picture of their age and condition, and to assess site fidelity. There are two methods which could be trialled - using mist nets, or using spring/perch traps. Mist nets are made of a thin mesh and suspended between two poles, and are designed to be practically invisible to birds. They are used across the world in scientific monitoring of birds. This would probably be the most efficient way to catch Spotted Flycatchers, but spring traps could also be used. These can be attached to a post or tree, and baited with a live mealworm. The traps are triggered when a bird lands. Tape lures can be used to attract birds to mist nets or traps, and can be used continually for 15 minutes in one location during the breeding season. Spotted Flycatcher often come quickly to tape lure so the process could be efficient. Ringing would take place early in the morning when the birds are most active and there are few other people in the woods.



Image 4.2.4 Male Spotted Flycatcher, Higher Plantation 12th June 2023

There are projects in the UK where Spotted Flycatchers are colour ringed, such as at Creswell Crags in Derbyshire (Baddams, 2019) and Lancashire. This is so that the birds can be identified in the field without the need to recapture them. Using just metal rings requires effort to recapture the birds to maximise information. However, colour ringing projects are expensive, and to get a license to start a project there would need to be evidence that a significant number of birds could be ringed. (Colour ringing is only usually permitted for adult birds with open nesting species as juvenile survival rates are considered too low.)

Breeding habitats of the Spotted Flycatcher are more varied than those of Redstart and Pied Flycatcher, but common factors at Burbage Edge and Grin Low include open woodland structure, grassy or herbaceous field layer, proximity of grazing, and prominent branches for perching and hunting insects. Shrub layer can be variable, as can density of canopy. Glades, clearings and rides within Grinlow are often the centre of or close to the breeding territory.

Ivy can attract Spotted Flycatcher as it provides and support and cover for nests, but is not found at current Buxton nest locations. In many parts of Derbyshire, Spotted Flycatchers breed close to water. Grin Low lacks water provision, and management to create even small areas of water would increase invertebrate numbers and be beneficial to many species of breeding bird.

4.3 Pied Flycatcher

Pied Flycatcher is a species that does not breed in Buxton, but there are populations nearby and they pass through the area on migration. It is possible that, through appropriate management of some woodlands, breeding could be encouraged.

Pied Flycatchers are locally distributed in Derbyshire and bordering counties, with some significant populations in ancient oak woodland. The closest breeding populations to Buxton are in the Goyt Valley, at Errwood and Hillbridge Wood, and in the Leek area around Coombes Valley and Gradbach. They are common on the Longshaw Estate and other woods around Sheffield.

Prior to 2023, the most recent record of Pied Flycatcher in Buxton was in 2010 at the western end of Grin Low, a bird assumed to be passing through.



During 2023, there was a singing male Pied Flycatcher in Higher Plantation, Grin Low, from 29th April until 13th May. The bird was inspecting nest boxes, but these were already occupied by tits. Two new nest boxes were erected but the bird did not attract a mate.

Higher Plantation is an area where ground flora indicates ancient woodland (Green Hellibore & Wood Anemone) and is predominantly Wych Elm and Ash with some Sycamore. The

shrub layer here is mainly sparse, with a continuous short field layer, both characteristics favoured by Pied Flycatchers.

Image 4.31 Male Pied Flycatcher in Higher Plantation, 29th April 2023

Later in the year on the 20th July, an adult female with a juvenile was seen in the west end of Grin. The adult was metal ringed, suggesting that they have travelled from elsewhere, perhaps from Hillbridge in the Goyt Valley where the birds are ringed in nest boxes annually. The timing coincides with birds dispersing from their breeding areas (most juvenile Pied Flycatcher have fledged by mid-late June).

Past records from NBN Atlas suggest that Pied Flycatchers bred in the Wye Corridor between Buxton and Bakewell up to 2017:

07/05/2017 - Monsal Dale

01/05/2017 - Hay Top, Cressbrook

30/05/2014 - Ravensdale, Cressbrook

20/05/2009 - Between Millers Dale and Litton

09/06/2006 - Monsal Dale

28/05/2006 - Millers Dale

01/06/2004 - Millers Dale



Image 4.32 Ringed female Pied Flycatcher, 20th July 2023 Grin Low

The habitat at these sites is predominantly NVC W8 Ash, Field Maple, Dog's Mercury with Wych Elm, the natural woodland type of Higher Plantation. In literature it is occasionally mentioned that Pied Flycatcher will breed in upland Ash woods (Campbell, 1955)

Corbar has long been thought to be the woodland where BCA could encourage this species due to the location and because oak is present and could be increased. A 'natural' woodland at Corbar would likely be NVC type W11 - Sessile Oak-Downy Birch-Wood Sorrel - the habitat type in the Dark Peak where Pied Flycatchers are prevalent. Despite the proximity to the Goyt Valley, the current status of the wood is probably unsuitable for Pied Flycatchers due to the absence through most of the wood of an established field layer and low numbers of oak or birch. Adding nest boxes in this area whilst improving tree

diversity and field layer, including grasses and Bilberry (if the soil is of a suitable acidity) could initially increase the numbers of tits, and over time attract Pied Flycatcher.

2022 was a very productive breeding season for Pied Flycatcher in Derbyshire, so the male that was present in Higher Plantation Grin Low in April/May 2023 was likely in its first breeding season exploring new areas. If populations were to increase locally, there would be more chance of breeding birds returning to the Wye corridor and possibly to Grin Low.

At Carsington Water, the first breeding record for Pied Flycatcher was in 2021. There were 2 singing males with 1 pair confirmed to be breeding, in an area of mature mixed woodland. From across the site, there was a maximum count of 5 males in 2022, but no confirmed breeding. These records demonstrate that within Derbyshire Pied Flycatchers have colonised a new territory that is not dominated by oak.

In Finland it has been found that Pied Flycatchers are attracted to habitats with high numbers of tits, and actively mimic their nest site choices (Loukola *et al* 2022). The high density of Blue and Great Tits (and nest boxes) in Higher Plantation is likely to have influenced the male that visited in 2023.

The Climate Change Vulnerability Assessment for Pied Flycatcher (Peak District National Park, 2021) identifies the species as highly vulnerable to climate change, stating that although "Pied flycatchers in the PDNP appear to be doing reasonably well, with known populations doing better than the national average", migration reduces the ability to respond to phenological changes in their food sources, and competition increases from resident birds which have an adaptive advantage. Peak District populations are quite small and isolated, but ringing studies show movement between breeding locations, including hatching in the UK and breeding in the Netherlands, again suggesting ability to colonise new areas.

Management recommendations from the report include:

- *Suitable broadleaf woodland and new broadleaf woodland in the Dark and South West Peak should be fitted with nest boxes as soon as possible, including increasing nest box numbers within existing sites. This is the best way to increase pied flycatcher habitat and would help to improve resilience.*
- *Implement known best management practices on nest boxes such as corking and orienting away from south-west. Ensure continuity of management. More sustainable long term strategies may need to be considered.*
- *Increased upland woodland establishment, especially oak woodland, will increase habitat for pied flycatchers.*
- *Manage for increased Lepidopteran (caterpillar) populations to increase nesting food supply for pied flycatchers.*

Preventing the development of a dense shrub layer and maintaining the field layer in Higher Plantation would continue to provide potentially suitable habitat for Pied Flycatchers.

To attract Pied Flycatchers to nest boxes, it is common practice to bung the holes until late April when they arrive on territory, to prevent occupation by earlier breeding tits. This could be applied if nest boxes were installed in the west end of Corbar, and to some of the boxes already in place in Higher Plantation.

Conclusion

Grin Low has the best potential to host breeding populations of all three species due to the woodland size, range of niche habitats and management already occurring.

Woodland breeding Redstarts show a preference for very open structure, grazed field layer and edges without shrub. Holes in dead wood and mature trees are important for nesting, and increasing nest boxes and their management at the top edge of Grin Low may be of benefit. More monitoring is required to assess whether Redstart range has contracted.

Buxton is important within Derbyshire for its population of Spotted Flycatcher, particularly Grin Low. Management to preserve the breeding sites includes maintaining and creating glades and clearings. In Gadley, management around the pond may create more open foraging areas and encourage return of Spotted Flycatcher.

Although Pied Flycatcher do not currently breed in Buxton, the proximity of populations (for example Goyt Valley) and records of birds in Grin Low and the Wye Corridor suggest it would be beneficial to maintain suitable habitat and nest boxes in Higher Plantation, and manage Corbar accordingly.

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Woodland Wildlife Toolkit - Redstart, Spotted Flycatcher, Pied Flycatcher

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