



Bedfordshire and Luton Red Data Book: Birds

Updated November 2006

Yellowhammer, a Red List Species of Conservation Concern
Photo by Andreas Trepte, Marburg



Birds

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The lists of bird species have been compiled after discussion and agreement within the Bedfordshire Bird Club Records and Research Committee, using the same criteria as the national list of Birds of Conservation Concern (RSPB et al, 1996). The species which have been included are those which have wintered regularly since the 1970's, have occurred occasionally but are potential colonisers and those species which have been confirmed as regular or sporadic breeders in Bedfordshire in the period 1970 to 2006 and show some prospect of continuing to do so. The result is that birds suspected of breeding but not confirmed (e.g., Siskin), former breeders with little prospect of recolonisation (e.g., Red-backed shrike), vagrants or species never likely to breed because the habitat is not present are not listed.

The UK's birds are split into three categories of conservation importance: red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group followed by green.

Red list criteria

- Globally threatened
- Historical population decline in UK during 1800-1995
- Rapid (> or =50%) decline in UK breeding population over last 25 years
- Rapid (> or =50%) contraction of UK breeding range over last 25 years

Amber list criteria

- Historical population decline during 1800-1995, but recovering; population size has more than doubled over last 25 years
- Moderate (25-49%) decline in UK breeding population over last 25 years
- Moderate (25-49%) contraction of UK breeding range over last 25 years
- Moderate (25-49%) decline in UK non-breeding population over last 25 years
- Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)
- Five-year mean of 1-300 breeding pairs in UK
- > or =50% of UK breeding population in 10 or fewer sites, but not rare breeders
- > or =50% of UK non-breeding population in 10 or fewer sites
- > or =20% of European breeding population in UK
- > or =20% of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK

Green list criteria

- No identified threat to the population's status

Introduced

This is not a conservation status category, but indicates a species that has escaped and bred in the wild or has been deliberately released into the wild at some point in the UK's history. As these species are not native to the UK, they have no specific conservation status here.

Bedfordshire Red List Species of Conservation Concern

Eurasian bittern	Woodlark	Linnet
Grey partridge	Skylark	Bullfinch
Common quail	Song thrush	Reed bunting
Turtle dove	Spotted flycatcher	Corn bunting
European nightjar	House sparrow	Lesser spotted woodpecker
Grasshopper warbler	Tree sparrow	Marsh tit
Common Starling	Yellowhammer	Willow tit

Bedfordshire Amber List Species of Conservation Concern

Common shelduck	Common snipe	Dunnock
Eurasian wigeon	Woodcock	Common nightingale
Gadwall	Eurasian curlew	Black redstart
Eurasian teal	Common redshank	Common redstart
Pintail	Red kite	Bearded tit
Shoveler	Lesser black-backed gull	Mute swan
Common pochard	Herring gull	Garganey
Common kestrel	Peregrine falcon	Great cormorant
Water rail	Barn owl	House martin
Oystercatcher	Common kingfisher	Hawfinch
Ringed plover	Green woodpecker	Stock dove
Northern lapwing	Sand martin	Tree pipit
Grey wagtail	Barn swallow	Willow warbler
Lesser redpoll	Little egret	Wood warbler

A further set of criteria, similar in concept to the national criteria, have been applied to the national "Green" list to identify an additional layer - local bird conservation priorities. The local criteria have been developed to give a local focus for action in addition to that which is required to secure the national populations of birds. This has been done by identifying from the national "Green" species those where local population parameters indicate that these local populations might benefit from conservation action. The criteria which place a species on the list of species of local conservation concern are:

- Described in The Breeding Birds of Bedfordshire (Dazley RA & Trodd P, 1994) as having a population which has declined between the two survey periods.
- Described in The Breeding Birds of Bedfordshire as having a population whose minimum estimate is <300 pairs.

These criteria are used to separate species of local conservation concern from the species not currently of conservation concern. It is acknowledged that in this process birds which are relatively scarce as breeding birds in the county whose populations are doing well (e.g. Grey heron) will be included in the list of concern alongside birds which are slightly more numerous but are declining (e.g. Lesser spotted woodpecker). All these species are included through a process of consistent and transparent application of the criteria given above. The

approach taken is that judgements should be made at a later stage, when considering specific actions to take, rather than exclude species on a set of hidden or qualitative criteria.

Bedfordshire species of local conservation concern

Little grebe	Northern goshawk	Hobby
Grey heron	Common tern	Northern wheatear
Tufted duck	Long-eared owl	Greenfinch
Little ringed plover		Common crossbill

Note that non-breeding population numbers have not been used to define this local layer of priority.

European status

Each individual species account contains a statement on its European conservation status, giving its category from the listing of species of European conservation concern (Tucker & Heath, 1994) referred to as its 'SPEC Category' . The categories are defined by the following criteria:

SPEC Category 1	Of global conservation concern, that is listed internationally as globally threatened, conservation dependent or data deficient
SPEC Category 2	Of unfavourable conservation status, that is listed in Europe as endangered, vulnerable, rare, declining, localised or insufficiently known and concentrated in Europe (more than 50% of the world population or range in Europe)
SPEC Category 3	Of unfavourable conservation status, that is listed in Europe as endangered, vulnerable, rare, declining, localised or insufficiently known but not concentrated in Europe
SPEC Category 4	Of favourable conservation status but concentrated in Europe (more than 50% of the world population or range in Europe)
SPEC Category 'non-SPEC'	Of favourable conservation status but not concentrated in Europe (the remaining species)

There are no species regularly or sporadically breeding or regularly wintering in Bedfordshire which come into SPEC Category 1, of global conservation concern.

References

Dazley RA and Trodd P (1994) *An Atlas of the Breeding Birds of Bedfordshire 1988-92*. Bedford: Bedfordshire Natural History Society, 280 p.

Dodds GW, Appleby MJ and Evans AD (1995) *A Management Guide to the Birds of Lowland Farmland*. Sandy, Bedfordshire: Royal Society for the Protection of Birds, 170 p.

Gibbons DW, Reid JB and Chapman RA (1993) *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. London: T&AD Poyser for the British Trust for Ornithology, Scottish Ornithologists' Club, Irish Wildbird Conservancy, 520 p.

RSPB, BirdLife International, Wildfowl and Wetlands Trust, Game Conservancy Trust, BTO, Hawk and Owl Trust, Wildlife Trusts and the National Trust (1996) *Birds of conservation concern in the United Kingdom, Channel Islands and the Isle of Man*. Sandy, Bedfordshire: Royal Society for the Protection of Birds.

Trodd P and Kramer D (1991) *The birds of Bedfordshire*. Welwyn Garden City, Hertfordshire: Castlemead Publications, 349 p.

Tucker G M and Heath MF (1994) *Birds in Europe: Their conservation status*. Cambridge: BirdLife International, 600 p.

Specific accounts

Botaurus stellaris

Species of conservation concern: Red

Eurasian bittern

SPEC Category 3

Breeding regularly only in East Anglia and Lancashire. Some UK breeding birds disperse from the breeding sites in autumn and winter and significant numbers winter in the UK from the continental population.

Rare winter visitor to Bedfordshire in very limited numbers. Potentially found at any site where tall emergent vegetation stands throughout the winter alongside water bodies.

The habitat, freshwater marsh dominated by common reed, has been extensively researched in recent years by the RSPB and others and is the subject of a series of site management initiatives.

The species is scarce, with the UK population currently at about 28 booming males (2002). Historically bitterns became extinct in the UK at the end of the 19th Century, recolonisation was confirmed in 1911, reached a maximum of over 70 booming males in the 1950's and 1960's before declining to the present numbers.

The main threat to the remaining population is the deterioration in the habitat quality of reedbeds for bitterns (principally drying out due to seral succession not being set back through management by man). The habitat needs of bitterns and the state of existing reedbeds have been well researched. Almost all of the sites where bitterns bred around 30 years ago still exist as natural habitat (i.e. they have not been drained and/or built on) but they are either very dry reedbed or wet woodland.

The creation of new, large, wet reedbeds with a high proportion of reed/water edge per unit area of reed and good fish stocks offers the means to boost overwintering bittern numbers in Bedfordshire and provide breeding habitat for potential colonists.

Perdix perdix

Species of conservation concern: Red

Grey partridge

SPEC Category 3

Distributed on open farmland across England, although thinly spread in the south-west, and the lowlands of Scotland. Absent from the highlands of Scotland and upland Wales and scarce in Ireland.

Fairly widespread across the county. Typical bird of open, lowland farmland. The species often nests at the base of a hedgerow or bank. The young will leave the nest almost immediately on hatching.

Adults feed on grass, cereal shoots, clover and seeds but the chick diet for the first ten days is insects (mainly sawfly and moth larvae, beetles and cereal aphids), later feeding as the adults.

The species has declined in number by 82% on farmland in Britain since 1980.

In Bedfordshire there has been a decline in the intensively farmed arable lands north of the Greensand Ridge. The annual breeding population is decreasing and is probably between 300 and 600 pairs (2006). Recorded in 1988-92 in 195 (51%) tetrads but the population is thought to have declined by at least 50% since that date and it was found in only 31% of BBS squares in 2005. The main stronghold is on chalk in the south of the County. The population is regularly monitored in the Stopsley Common area where it has shown a marked decline from 20 pairs in 1995, to five or six pairs in 2005.

Recent changes in farming practice, particularly the increased use of pesticides which reduces food for adults and chicks directly by killing the weeds and insects on which they feed and indirectly by killing the weeds on which the chicks' insect food feeds, has been

shown to be responsible for the decline with hedgerow removal an additional factor by reducing the potential breeding sites available.

A continuation of established weedy areas, unsprayed 'conservation' headlands, sensitive hedgerow management and grass strips along arable field margins may help to arrest the decline. The introduction of new measures such as the undersowing of cereal crops with a grass ley, summer or annual fallow and a significant reduction in the use of non-selective herbicides and insecticides should also contribute to reversing the decline.

Coturnix coturnix

Species of conservation concern: Red

Common quail

SPEC Category 3

Main distribution in the farming landscape of middle England. Not so common in Wales, northern Scotland, northern and south east England.

An irruptive species, the quail has occurred in variable numbers and locations. The open chalky fields near Warden and Galley Hills are a favoured haunt, along with the farmland around Eaton Bray, Totternhoe and north of Dunstable. Scattered records are from Marston Moretaine, Haynes, Cotton End, Willington, Roxton, Colmworth, Thurleigh, Pertenhall, Shelton, Knotting, Cople, Biggleswade, Sutton, Potton and Cockayne Hatley amongst others.

A migrant game bird which arrives in small numbers from late April onwards, but mainly during June and July. It is a bird of large fields of cereal, particularly barley but also pea, field bean, oilseed rape and grassland ley. Some agri-environment schemes are particularly attractive.

The UK population has undergone an historic decline. The changes over short periods of time are masked by irruptive movements with larger numbers occurring in "quail years".

Recorded 1988-92 in 32 (8%) Bedfordshire tetrads. The population of this irruptive species varies from year to year, but in recent times it has not exceeded ten calling males (6 in 1998, 8 in 1999, 4 in 2000 and 6 in 2005). There has been no proven breeding in recent years.

Threats include changing agricultural practices and pesticides.

Active conservation measures for an irruptive migrant are difficult to design but more spring cereal cropping and an increase in the 'weediness' of arable crops through more selective pesticide use would probably benefit this species.

Streptopelia turtur

Species of conservation concern: Red

Turtle dove

SPEC Category 3

Found in south and east England. Absent Ireland, Scotland, west Wales and northern England.

Thinly spread across Bedfordshire.

A migrant which arrives in the county from late April. A species of open, arable countryside where there are weed seeds, and bushes or hedgerows to nest in. Feeds principally on weed seeds taken from the ground. Lays two eggs and is double brooded.

There has been a 77% decline in the UK breeding population on farmland since 1980. The range has contracted by 25%, with most of the losses along the northern and western limits of the range.

A rise in the population over the final 20 years of the 19th Century gave the species the status of being locally 'very common' in some areas of Bedfordshire. The species remained relatively common through to the post war period. Since 1968 there has been a steady decline. The species is still spread across the county but in lower densities.

Annual breeding populations decreasing, varying between 1,000 and 1,500 pairs (2006). Recorded 1988-92 in 321 (85%) tetrads, population 2,000 to 4,000 pairs, but is estimated to

have declined by 50% since then. A total of just 43 pairs were reported from 32 sites in Bedfordshire during 2005.

Threats to the population include hedgerow loss and agricultural intensification.

Conservation actions which increase the numbers of small weed seeds such as use of more selective pesticides, spring cropping of cereals and leaving areas involved in some agri-environment schemes uncut could benefit this species but there remains a level of uncertainty about conservation prescriptions since the experimental work has not been done to prove their value.

Caprimulgus europaeus

Species of conservation concern: Red

European nightjar

SPEC Category 2

Widespread but scarce where it occurs. Scarce in Ireland and Scotland. Populations south and north Wales, northern, southern and central England.

Historically widespread across the county and fairly common on the Greensand. Recorded in five tetrads, Charle Wood, Wavendon Heath, Millbrook, Old Warden and Sandy during the period 1988-92 and in only one tetrad in the late 1990's where relict heathland or clearings in conifer plantations on the Greensand occur.

A nocturnal bird of dry heaths and clear fell areas within conifer plantations.

The male arrives in mid-May, announcing himself by a churring song. Usually lays two camouflaged eggs on bare soil with the chicks fledging about 34 days later. Adults forage mostly within 1-3 km of the nest site, taking insects in flight, most frequently moths and beetles.

The UK range has contracted over the long term and rapidly since 1980. Numbers have declined in the long term with significant decreases in the 1970's followed by increases in the 1980's. Changes across the UK have not been uniform.

Declining and vulnerable in Bedfordshire. The annual breeding population decreased from between two and five pairs in 1988-92 to only one pair in the period 1996-98. It no longer breeds annually in the county and occurs on passage only rarely. During the period 2000 to 2005 there have been only five records. Threats include loss and fragmentation of heathland and the lack of management of existing heathlands leading to a lack of bare ground/short vegetation and eventual succession to woodland. Coniferous plantations are only suitable after clear fell and for a few years after planting. The agricultural improvement of permanent pasture adjacent to heathland and plantation breeding sites may also affect food supplies. In Bedfordshire human disturbance at some localities is probably a factor.

Heathland requires management such as by cutting, grazing and bracken treatment if it is to remain of value to nightjars. Invading tree cover should be reduced, an increase in the heathland/scrub edge created and bare patches created at the base of small trees as nest sites. In plantations a mixed age rotation should be maintained or created by the advanced or delayed felling of trees to produce a staggered age structure if necessary.

Dendrocopus minor

Species of conservation concern: Red

Lesser spotted woodpecker

SPEC Category: non-SPEC

In Britain they are at the very NW edge of their European range. An uncommon resident of woodlands, appearing to show a preference for mature willows and alders along river valleys and around lakes. Long-term trend (1970 to 2003) showed a decline of 73%. UK population (2000) put at 1,400 – 2,900 pairs. The annual Bedfordshire breeding population was estimated at between 250 and 500 pairs in the early 1990's but is thought now to be under 50 pairs. Occurring in 1988-92 at 90 (24%) tetrads. The Woodland Survey in 2004 carried out by the Bedfordshire Bird Club found this species to be present in only 12 of the 217 sites surveyed during the breeding season and a further 21 sites outside the breeding period. The

breeding population has declined dramatically. There were no confirmed breeding records in 2005.

Lullula arborea	Species of conservation concern: Red
Woodlark	SPEC Category 2

Confined mainly to five discrete areas: South Devon, the New Forest, the Hants./Surrey border, Breckland and part of the Suffolk coast.

Recorded information is very limited. Confirmed record March 1991 of two birds on passage at Wavendon Heath and subsequent breeding records from this site, the latest being in 1996.

The bird has specific habitat preferences, needing open ground amongst short vegetation, where it can forage for insects, which is provided by burnt and heavily grazed areas on heathland and as a result of felling and tree clearance operations in plantations of coniferous woodland. Uses low intensity managed farmland in Devon. A partial migrant in Britain, arriving in the eastern counties to breed from March onwards.

Since 1950 the population change has been in four broad phases: 1950 to late 1970's a marked contraction in range and a decline in numbers, late 1970's to early 1980's a temporary increase confined to the southern heathlands, mid 1980's a decline back to mid 1970's level and post 1988 a substantial increase in numbers in all regional populations except the south-west but no substantial recolonisation of the range occupied in the 1950's. The UK population in 1997 was put at 1,426 to 1,552 breeding pairs.

The species has always been a marginal breeder in the county, heavily dependent upon the presence of an appropriately managed heathland habitat. Efforts to create such habitat coupled with a national increase in the species suggests that the population may increase in future. The annual breeding population varies between none and one pair.

Threats include lack of suitable habitat, the inappropriate or lack of management of remaining heathland habitat, the cycles of conifer plantation restocking resulting in fewer clear fell areas for a period and recreational disturbance.

A number of initiatives have begun to ensure that heathland is managed where practical by grazing and if not then by cutting and to re-establish heathland from conifer plantation or farmland. The Forest Design Plans of Forest Enterprise can include the management of clear fell and restock areas and the provision of permanent open areas to benefit woodlark.

Alauda arvensis	Species of conservation concern: Red
Skylark	SPEC Category 3

Resident over the whole of Britain although at greater densities in eastern Britain.

A common breeding bird found across the county, only absent from tetrads wholly located in urban areas.

Skylarks can be found in open farmland with a covering of grass, including cereals or low green herbage, also found on moors, heaths and marshes. Adults feed on a wide range of invertebrates, seeds and leaves, chicks are fed entirely on insects for their first week.

The national population has decreased by 58% on farmland since 1980 but the range has not reduced significantly over the same period.

In Bedfordshire there has been a slight decrease in numbers. The annual breeding population is now estimated at between 5,000 and 15,000 pairs (2005). Recorded in 1988-92 in 375 (99%) tetrads but numbers continue to decline. A marked decline in the wintering population has also been noted. In both 1999 and 2000 only one flock in excess of 100 birds was recorded in Bedfordshire. 2001 (1), 2002 (0), 2003 (7), 2004 (2), 2005 (3).

Rapidly changing farming practices since 1970's have been identified as the probable cause of the decline including the switch from spring to autumn-sown crops, increased herbicide use and the loss of mixed farming systems.

Conservation actions which increase the weed seed and insect availability such as use of more selective pesticides would benefit this species. Spring cropping of cereals and leaving areas involved in agri-environment schemes uncut would provide benefit through both increasing the food supply and the availability of nesting sites.

Turdus philomelos Species of conservation concern: Red
Song thrush SPEC Category 4

Widespread resident throughout Britain and Ireland although densities are higher in lowland England. Also a passage migrant and winter visitor.

A common bird across the county.

Habitat is gardens, parklands, scrub, heaths, woods and fields. Feeds on a wide range of invertebrates and fruit.

The species has suffered a 73% decline on farmland in the UK since 1980.

A slight decline in Bedfordshire particularly in farming districts has possibly halted since 1998 and there are signs of a modest recovery. Annual breeding population has been estimated at between 7,500 and 15,000 pairs (1988-92). Recorded 1988-92 in 377 (100%) tetrads but in only 80% of BBS squares in 2005.

The decline in numbers coincides with the increase in the use of molluscicides, during the mid 1970's although no causal link between the two has been found. Reasons for the decline are thought to be associated with the dramatic changes in farming practices that have occurred over recent years reducing first-year bird over-winter survival. There is no certainty over the causative factors but the period in the lifecycle where survival changes have occurred has been identified.

Conservation actions which increase the food supply such as a cessation of the annual cutting of hedges and increasing within arable farms the area of mown and grazed land not receiving high inputs of fertiliser or pesticides could benefit this species.

Locustella naevia Species of conservation concern: Red
Grasshopper warbler SPEC Category 2 or 3

Thinly scattered summer visitor to much of Britain. British population put at about 10,500 – 11,000 pairs.

A local summer visitor to areas with short but thick ground vegetation such as unmanaged grassland, young conifer plantations and around mineral extraction pits. The majority of the population occurs along the Greensand and chalk ridges. Occurring in 1988-92 in 70 (19%) tetrads. The annual breeding population was estimated to be 50 - 100 pairs (2000) and probably declining. It may now be less than thirty pairs. The population has declined by about a third since 1985. Threats include the natural succession of breeding sites to woodland and their loss to commercial development or intensive agriculture.

Muscicapa striata Species of conservation concern: Red
Spotted flycatcher SPEC Category 3

A widespread summer visitor to Britain although scarcer in the far north and west.

Thinly spread across Bedfordshire.

Many different sites are used from natural woodland edges to mature gardens of suburbia and graveyards but the common feature is the presence of trees with open areas frequented by flying insects .

There has been a slow but steady decline nationally with a drop of 73% on farmland since 1970.

In Bedfordshire 1988-92 atlas data showed a slight increase in distribution, probably due to increased observer effort but the population continues to decline. The annual breeding population was estimated at between 1,500 and 3,000 pairs in the 1988-92 atlas survey but it is considered that the breeding population in the county has fallen by more than 50% since 1995. Recorded in 1988-92 in 295 (78%) tetrads. A thorough search of the county by members of the Bedfordshire Bird Club in 2002 revealed only 94 pairs. The majority of these were in churchyards and an ongoing RSPB project confirms that this is the preferred habitat in this region, but less so in other parts of England, for example in south Devon.

The causes of decline are unknown but increases in pesticide use reducing insect prey availability and unfavourable weather may be factors. One recent study has shown that removal of predators had a dramatic positive effect.

Specific conservation actions for this species are not known but creating or maintaining rides and glades in woodlands, using more selective pesticides and the provision of nest boxes could help.

<i>Poecile palustris</i>	Species of conservation concern: Red
Marsh tit	SPEC Category 3

A resident mainly of England and Wales, more concentrated in the south and south-west. UK population (2000) put at 52,800 territories. Long-term trend (1970-2003) shows a decline of 57%.

A resident bird of deciduous woodland which is thinly spread across the county with some concentration along the Greensand Ridge. Occurring in 1988-92 in 148 (39%) tetrads with an annual breeding population estimated at between 1,000 and 2,000 pairs. There has since been a dramatic local decline to an estimated 100 - 200 pairs currently (2006).

<i>Poecile montanus</i>	Species of conservation concern: Red
Willow tit	SPEC Category: Non-Spec

A resident of England and Wales. UK population (2000) put at 8,500 territories. Long - term trend (1970-2003) shows a decline of 85%.

A very rare resident bird of woodlands, particularly damp woodlands with elder, birch or willow in which it frequently nests. Occurring in 1988-92 in 94 (25%) tetrads, the annual breeding population was estimated at between 250 and 500 pairs in the early 1990's but there has since been a dramatic decline. It was noted from only six sites in 1999, with no proven breeding. The Bedfordshire Bird Club Woodland Survey – 2004 found this species at only three of the 217 woodland sites surveyed and it is probable that the total breeding population in the county is now (2006) less than five pairs. There were no records at all in the county during 2005 and no breeding season records during 2006.

<i>Sturnus vulgaris</i>	Species of conservation concern: Red
Common starling	SPEC Category 3

A widespread and abundant resident of town and country whose numbers are swelled in the winter by continental immigrants. The annual breeding population has been estimated at between 12,000 and 24,000 pairs and declining. Occurring in 1988-92 in 378 (100%) tetrads. The population, and probably the overall range, is decreasing, being found in only 78% of BBS squares in the county during 2005. There has been a decline of 80 - 90% in wintering numbers since 1990. Threats include the loss of grassland to arable agriculture, removing a supply of invertebrate food for breeding birds.

Passer domesticus Species of conservation concern: Red
House sparrow SPEC Category 3

A once abundant resident across the county, occurring in both urban and rural areas although at lower densities in the latter. The annual breeding population was estimated (1988-92) at between 25,000 and 50,000 pairs. Occurring in 1988-92 in 378 (100%) tetrads but in only 71% of BBS squares during 2005. The breeding population is showing dramatic declines in numbers and there are similar declines in the size of flocks in autumn and winter. Agricultural intensification is thought to have affected this species.

Passer montanus Species of conservation concern: Red
Tree sparrow SPEC Category 3

A widespread resident of lowland Britain but absent from some northern and western lowland areas.

Thinly scattered across Bedfordshire.

Can be found in gardens, on heaths, in woods, fields and hedges. Nesting is in tree holes and nest boxes. Adults feed on seeds and the chicks are fed on invertebrates.

There has been a decline of 89% on farmland since 1980 and almost a 20% decrease in range over the same period.

The 1977 atlas figures showed this species to be common and widespread in Bedfordshire. The 1988-92 atlas map shows the species to be thinly scattered over a wide area and a 64% reduction in range. Recorded 1988-92 in 142 (37%) tetrads, the annual breeding population was then estimated at between 500 and 1,000 pairs. There is now (2006) thought to be as few as 20 - 40 pairs, mainly concentrated in the south-west and north-west of the county. Long term population fluctuations are part of this species biology but the reason for the latest dramatic decline is unclear. Like other seed-eating birds which feed their young on invertebrates it is most probably linked to changing agricultural practices reducing food supplies.

Seed banks and weedy areas may provide food throughout the year. Reducing the use of pesticides can help maintain food sources and leaving flower rich margins or planting small seeded game cover crops can provide shelter and food. Maintain some thick hedgerows, cutting on a rotational basis and manage old pollard trees to provide nest sites. Erecting nest boxes can also reduce the competition for nest sites.

Carduelis cannabina Species of conservation concern: Red
Linnet SPEC Category 4

Widespread across the country, absent only from some northern and western isles and the highlands of Scotland.

A population in the south of Bedfordshire around Luton and Dunstable, around the pits of the Marston Vale and in the east around Sandy. Fewer records are found in the agricultural land in the north and north-west of the county.

Found on heaths, the coastal fringe, farmland, scrub and gardens. The nest is from ground level to two metres high in hedges. It is the only seed-eater whose chicks are fed entirely on seeds rather than invertebrates forming a component of their early diet.

The species has declined nationally by 52% on farmland since 1980.

Recorded 1988-92 in 365 (87%) of tetrads with a population estimated at between 3,500 and 7,000 pairs. The BBS shows a 2% increase in range 1994-2005 in Eastern England but the population is still well below pre-1980 levels.

Chemical weed control is so effective it has reduced the breeding success due to reduced food availability and makes the birds vulnerable to winter starvation.

Conservation measures include keeping winter stubbles for feeding. Some agri-environment schemes may provide food throughout the year. Plant small seeded game cover crops, leave margins around the edges of fields and reduce the use of herbicides. Maintain some hedges between 0.5 and 2.0 metres high, leaving blackthorn, gorse and bramble for nesting sites. Plant new hedgerows where possible.

<i>Pyrrhula pyrrhula</i> Bullfinch	Species of conservation concern: Red SPEC Category: non-SPEC
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A widespread resident over Britain and Ireland.

In Bedfordshire numbers are quite high in the south around the scrub-invaded chalk downland and in the market gardening areas of the north east. There are gaps in the agricultural areas of the north.

Found in gardens, woods, heaths and hedges. Adults feed on tree seeds, weed seeds, fleshy fruits and buds. Chicks are fed in invertebrates as well as seeds.

There has been a rapid 76% decline in population on farmland since 1980.

Historically a species persecuted for eating the buds of fruit trees, which limited the numbers.

Numbers increased during the mid 1950's and continued until the end of the 1970's when numbers started to fall.

There is a continued general decline, although in some areas of the County the population appears to be holding steady. Recorded in 1988-92 in 326 (86%) tetrads with an estimated 4,000 and 8,000 pairs, but only in 27% of BBS squares in 2005.

Threats include changing agricultural practices, removal of hedgerows destroyed large areas of habitat. The intensification of agriculture with a reduced availability of weeds seeds will probably have affected this seed-eater.

Conservation actions which increase the numbers of small weed seeds such as use of more selective pesticides, uncultivated field margins adjacent to hedgerows and leaving weedy strips uncut could benefit this species though conservation prescriptions contain a level of uncertainty since the experimental work has not been done to prove their value.

<i>Emberiza citrinella</i> Yellowhammer	Species of conservation concern: Red SPEC Category: non SPEC
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Widely distributed resident over much of Britain. UK population (2000) put at 792,000 territories. Long – term trend (1970-1997) showed a decline of 54%.

A common resident of rural areas across the county. The annual Bedfordshire breeding population is estimated to have declined dramatically in the past six years and is now probably down to less than 6,000 pairs. Occurring in 1988-92 in 367 (97%) tetrads, but in only 69% of BBS squares in 2005. Agricultural intensification is thought to have affected this species.

<i>Emberiza schoeniclus</i> Reed bunting	Species of conservation concern: Red SPEC Category: non-SPEC
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Resident and widespread over the majority of Britain but absent as a breeding bird in some parts of Scotland and northern Britain.

Fairly widespread across the county but denser near wetland habitats in particular the rivers.

The species is strongly linked to wetland habitat but has been seen in drier areas e.g. farmland. The adults feed on seeds, shoots and some invertebrates and the chicks are fed a wide variety of invertebrates until they reach independence.

National populations were at their peak in the mid 1970's, since when there has been a steady decline, with a 61% drop in population of farmland since 1980.

In Bedfordshire this has remained a fairly common species since the turn of the century. However there is a continued decline in population in line with the 30% reduction nationally over the past decade. At Priory Country Park, 16 territorial males in 1993 had reduced to seven in 2000. Recorded 1988-92 in 262 (69%) tetrads when the annual breeding population was estimated at between 2,000 and 4,000 pairs, but in only 35% of BBS squares in 2005.

Threats may include changes in farming practices, climatic changes, the loss of wetlands and waterside vegetation.

Conservation actions which increase the weed seed and insect availability such as use of more selective pesticides would benefit this species. Spring cropping of cereals and leaving weedy strips uncut would provide benefit through both increasing the food supply and the availability of nesting sites.

Emberiza calandra

Species of conservation concern: Red

Corn bunting

SPEC Category 4

A localised distribution across lowland England, coastal eastern Scotland and the Western Isles. Almost absent in Ireland.

Locally common especially around Eaton Bray and Biggleswade area and between Keysoe and Thurleigh.

Found in heaths, open farmland and gardens adjoining farmland. Adults feed on seeds, shoots and invertebrates with the chicks fed on invertebrates and unripe cereals.

Nationally declining. A decline of 89% occurred from 1970-2003.

The breeding population in Bedfordshire is declining. The continued decline reflects the 40% reduction nationally since 1995. Seven winter roosts (varying between a total of 300 – 600 birds) have been discovered, but this probably reflects increased observer coverage/effort, rather than a new phenomenon. Recorded 1988-92 in 242 (64%) tetrads with an estimated 1,500 and 3,000 territories but is now (2006) probably about 500 to 1000 territories.

The species is strongly linked to agriculture. The specialisation and intensification of agriculture with the loss of mixed farms, the switch from spring to autumn sown crops and an increase in chemical pesticides reduces food availability.

Conservation actions which increase the weed seed and insect availability such as use of more selective pesticides would benefit this species. Spring cropping of cereals and leaving rotational weedy strips uncut would provide benefit through both increasing the food supply and the availability of nesting sites.

Bedfordshire amber list species of conservation concern.

Cygnus olor

Mute swan

A resident of wetlands, particularly the larger rivers. The annual breeding population has been estimated at between 150 and 300 pairs (1988-92). Occurring in 1988-92 in 85 (22%) tetrads. The breeding population is showing a slight increase. Outside of the breeding season numbers peak at just under 100 birds at Stewartby Lake, the River Ouse in Bedford and Radwell Lakes. Threats include collisions with power lines.

Tadorna tadorna

Common shelduck

Historically a regular but rare winter visitor and passage migrant. Breeding first occurred at Millbrook in 1972 and since 1985 the species has bred in the Marston Vale, at Grovebury near Leighton Buzzard, Woburn Park and at Radwell. The breeding population has ranged between two and five pairs though in recent years there has been a slight increase in the breeding population. Bedfordshire has limited wetlands and it is likely that this will always be a rare breeding species. Disturbance due to industrial operations and the public at the mineral workings where they breed are the most likely threats to this species.

Anas penelope

Eurasian wigeon

A regular, fairly numerous winter visitor. The abundance of new lakes fringed by grassland resulting from mineral extraction has benefited this species. Highest winter counts (200-500) since 1985 come from the Radwell, Harrold-Odell Country Park, Rookery CIP and Marston Vale areas. Disturbance by recreational users of water habitats may be a problem.

Anas strepera

Gadwall

Wintering birds are found at suitable wetland sites where they can up-end in shallow water in search of vegetation. Maximum wintering numbers (usually in the range 20 to 60) occur at Luton Hoo, Dunstable WR and the Marston Vale pits. The local increase in both the wintering and breeding population since the mid 1970's has mirrored that which has occurred nationally. The annual breeding population is increasing and is thought to range between five and 15 pairs. New water bodies created by mineral extraction are thought to have benefited this species.

Anas crecca

Eurasian teal

A fairly common winter visitor which has benefited from increased areas of flooded gravel pits. Wintering numbers, peaking up to several hundred occur in the Marston Vale and the Ouse Valley. It is a very rare and infrequent breeder. Breeding has occurred at Linslade (1970's) and South Mills through the 1980's and 1990's with sporadic breeding elsewhere. Wintering and breeding sites are usually well-vegetated, shallow water bodies within river valleys where flooding can enhance feeding opportunities. Increased recreational use of these water bodies may affect this species.

Anas acuta

Pintail

An uncommon but regular winter visitor usually encountered in only small numbers at flooded clay pits and gravel workings. Counts above ten do not occur every winter. There is no significant trend in wintering numbers. Increased recreational use of water bodies may affect this species.

Anas querquedula

Garganey

A scarce summer visitor and very rare breeding bird in the county. A pair which bred at Marston Vale CP in 2000 was the first documented successful breeding since 1959. Single pairs were present in the county during the 2004-2006 breeding seasons and may have bred.

Anas clypeata

Shoveler

A regular winter visitor but usually less than twenty birds at any waters except Dunstable WR where winter peaks of 50 to 100 birds have occurred in the 1970's and 1980's. Only occasional breeding records of single pairs at any one site, predominantly from mature gravel and chalk pits. Wintering and breeding sites are usually well-vegetated, shallow water bodies. There is no significant trend in numbers. Increased recreational use of water bodies may affect this species.

Aythya ferina

Common pochard

A common winter visitor, occurring on most larger water bodies. Numbers have increased since 1975. Winter peaks of 100 to 300 occur in the Marston Vale and Priory Country Park. Recently only sporadic breeding has occurred, and is less frequent than during the early 1970's. Increased recreational use of water bodies may affect this species.

Phalacrocorax carbo

Cormorant

A rare breeding bird, first confirmed breeding in the county in 1997 at Harrold-Odell Country Park, raising two young. The breeding population at this site has increased to about 27 pairs (2005). A winter visitor in increasing numbers to the extraction pits and the River Ouse where the total winter population (2004) was around 300. Threats include the potential for persecution by fisheries interests.

Falco tinnunculus

Common kestrel

Once the commonest bird of prey in the county but this is now longer so in some areas. The breeding population was estimated at between 500 and 1,000 pairs (1988-92). Recorded 1988-92 in 350 (93%) tetrads, but in only 31% of BBS squares in 2005. The breeding population increased after the 1970's but is now declining. An intensification in agriculture with losses of rough grassland where this species finds its small mammal prey could threaten populations in rural areas.

Rallus aquaticus

Water rail

A rare breeding bird in the county. Flitwick Moor is the county stronghold with other well vegetated wetland sites used sporadically. Currently there are less than five pairs at Flitwick Moor, and, between 2000 and 2006 breeding has taken place at Marston Vale CP and Willington GP (2 pairs) whilst also being noted during the breeding season at Begwary Brook and Houghton Regis ChP. Wintering birds occur regularly and more widely. No estimate of the wintering population is available for this secretive bird.

Haematopus ostralegus

Oystercatcher

A rare breeding bird in the county, first breeding in 1997 at Willington gravel pits where a single pair nested. This was followed by breeding at three sites in 1999 and one site in 2000. The species is continuing to establish itself as a regular breeding species in the county and breeding took place at six sites in 2005. A regular passage bird, much more frequent since the mid 1970's, with 15 to 40 occurring each year, predominantly at mineral extraction sites. The changing nature of the vegetation around gravel pits is the most likely threat to this species.

Charadrius hiaticula

Ringed plover

A rare breeding bird of mineral extraction sites, recently colonising the county, with the population estimated between five and ten pairs. Breeding was first recorded at Wyboston pits in 1971. In 2005 seven pairs bred. This species is an occasional winter visitor and is fairly common on spring and autumn passage with peak numbers in the range of ten to 25 at any one site. As extraction pits mature, vegetation growth renders them unsuitable for this species.

Vanellus vanellus

Northern lapwing

A relatively widespread resident and common passage migrant and winter visitor occurring on arable farmland, grassland, marshes and around mineral extraction sites where in all cases the key feature is short vegetation. Breeding numbers were estimated as between 2,000 and 4,000 pairs in 1988-1992 but it is now thought that the breeding population is less than 2000 pairs. Passage and wintering flocks occur on similar habitats with the numbers peaking in the range 2-5,000 at Cranfield Airfield, in the Ouse Valley between Bedford and Willington and in the Ivel Valley and occasionally higher in the Marston Vale pits. A decline of 16% has been recorded in the breeding population in the years between the two atlas surveys (1968-77 and 1988-92) and the decline continues though wintering numbers are stable. Continued agricultural intensification is the main threat to this species.

Gallinago gallinago

Common snipe

A regular but uncommon winter visitor and extremely rare county breeding bird of natural and man-made wetlands. A decline of 50% has been recorded in the breeding population in the years between the two atlas surveys (1968-77 and 1988-92). In recent years there has been a more dramatic decline with no confirmed breeding since 1997. Between 2001 and 2005 display has been noted at Marston Vale CP, Millbrook Test Track and Knotting Green. Wintering flocks are scarce and declining in size, with 42 the maximum recorded flock during 2004 and 2005. Continued agricultural intensification is the main threat to this species.

Scolopax rusticola

Woodcock

A local resident breeding species whose stronghold is along the Greensand Ridge and some parts of the north of the county where it occurs in woodlands with some ground cover and open spaces or rides as well as young forestry plantations. Also a winter visitor to woodlands, migrating from Scandinavia and occurring in variable numbers in response to cold weather. The breeding population was estimated as between 250 and 500 'roding' males at the time of the last atlas survey. Occurring in 1988-92 in 63 (17%) tetrads. The breeding population has continued to decline possibly in line with the national reduction of 55%. This decline is may in part be due to structural changes in woodland.

Numenius arquata

Eurasian curlew

The species bred at a minimum of three sites in 2000, reflecting its expansion to new areas in the county but, between 2001 – 2005 there has been no proved breeding although it has been suspected at Thurleigh Airfield and an attempt was thwarted there by grass cutting in 2004. It is a regular passage migrant and scarce winter visitor. It breeds in rough or damp grassland. Passage birds, individuals or occasionally flocks of up to ten, are most frequently observed in the Ouse Valley and the Marston Vale, often detected as they pass over in flight.

Tringa totanus

Common redshank

A scarce breeding species, common passage migrant and scarce wintering bird. Its traditional breeding habitat is marshes and damp pasture although it now occurs more often around mineral extraction sites in the county. Occurring in 1988-92 in 28 (7%) tetrads. The breeding population has declined since 1985 but is currently thought to be stable at about ten breeding pairs. The largest numbers occur during spring passage with occasional peaks at a few sites in recent years of up to 25 birds and single-figure numbers can be found in the county at any month of the year. Disturbance and natural vegetation succession are the main threats at the mineral extraction breeding sites.

Larus ridibundus

Black-headed gull

An abundant winter visitor and passage migrant, breeding in small numbers on islands at mineral extraction sites, principally in the Marston Vale but also in the River Ouse Valley. The annual breeding population has been estimated at between 25 and 120 pairs. Occurring in 1988-92 in 12 (3%) tetrads. The breeding population is decreasing. The winter roosts in the Marston Vale pits may total more than 10,000-20,000 individuals. Breeding occurs in the early years of mineral extraction with sites becoming unsuitable once they are flooded or used as rubbish tips.

Larus canus

Common gull

A winter visitor and passage migrant, predominantly from the Baltic region, feeding at rubbish tips and on invertebrates obtained from open grassland. This species was very scarce in the county up until the 1950's but 1,000-2,000 have been estimated to roost in recent years, together with the other wintering gulls, on the water bodies of the Marston Vale. There appears to be a slight increase in the number wintering.

Larus fuscus

Lesser black-backed gull

An occasional rare breeder, scarce winter visitor and common passage migrant. Since the 1960's no more than seven and usually one to three pairs have bred on islands in the clay pits of the Marston Vale and breeding took place at Quest CIP, Willington GP and Broom GP, and on a factory roof in Luton (two pairs) in 2006. Inland breeding is rare in England but is increasing. It is most numerous on spring and autumn passage when numbers have been estimated as several thousand roosting on the water bodies of the Marston Vale. It appears to be increasing as a winter visitor. Breeding occurs in the early years of clay extraction with sites becoming unsuitable once they are flooded or used as rubbish tips.

Larus argentatus

Herring gull

An occasional rare breeder, common winter visitor and passage migrant. Since the 1970's no more than a single pair has bred in any one year on islands in the clay pits of the Marston Vale until, in 2006, five pairs were noted breeding on a factory roof in Luton. It is most numerous in winter when numbers have been estimated at up to 2,000 roosting on the water bodies in the Marston Vale. Breeding occurs in the early years of clay extraction with sites becoming unsuitable once they are flooded or used as rubbish tips.

Columba oenas

Stock dove

A fairly common resident throughout the county of wooded farmland, parkland and woodland, nesting in holes in trees or rural buildings. Occurring in 1988-92 in 347 (92%) tetrads with an annual breeding population estimated at between 3,500 and 7,000 pairs. The population has increased by 45% since 1985, rising from a depressed level probably caused by feeding on organochlorine treated seed grain but a decline is now apparent, being found in only 45% of BBS squares in the county during 2005. Loss of large hedgerow trees, renovation of farm buildings and intensification of agriculture leading to fewer large weed seeds being available are potential threats to this bird.

Tyto alba

Barn owl

A scarce but increasing resident, thinly spread across the county, occurring in farming areas where there is sufficient rough grassland for them to hunt for small mammals. The annual breeding population was estimated at between 20 and 50 pairs (1988-92) but it was thought that the true number may have been in the lower part of the range. Between 2001 and 2005 the number of breeding pairs increased from about 45 in 2001 to about 100 in 2005 mainly due to the introduction of nest boxes. Ninety-six young were ringed in 2005. Occurring in 1988-92 in 52 (13%) tetrads. Concomitant with this increase there has been a corresponding increase in road deaths. Further loss of rough grassland is the main threat to the species with loss of nesting sites and road kills being potential contributory threats to the population.

Alcedo atthis

Common kingfisher

Fairly common, if localised, along the river valleys and around some mineral extraction sites. The annual breeding population was estimated at between 150 and 300 pairs 1988-92. Occurring in 1988-92 in 109 (29%) tetrads. The long-term population trend is stable but is subject to rapid, short term declines in its population due to its susceptibility to hard winters. At present a succession of mild winters and improving water quality may be leading to a

slight increase in population. Threats are principally through those that affect its food supply e.g., pollution of watercourses, and the engineering of river banks which remove potential nesting sites.

Picus viridis

Green woodpecker

A common resident bird of open woodland, parkland and heathland, occurring principally in association with the boulder clay woods of the north-west, the clay-with-flint copses of the south and particularly along the Greensand Ridge. The annual breeding population was estimated (1988-92) at between 750 and 1,500 pairs. Occurring in 1988-92 in 218 (58%) tetrads. The range and numbers of this bird has expanded since 1985 and the population may be approaching maximum sustainable densities. The Bedfordshire Bird Club Woodland Survey –2004, found this species in 169 of 217 (78%) of woodland sites during the breeding season. Threats include loss of permanent pastures and the open spaces in heathland where it finds most of its food.

Riparia riparia

Sand martin

A localised breeding summer visitor and common passage migrant along the river valleys and around sand extraction pits. The annual breeding population has been estimated (2005) at between 500-600 pairs. Occurring in 1988-92 in 48 (13%) tetrads. The population declined between the 1968-77 and 1988-92 atlases with a halving in the number of tetrads where breeding was confirmed. These changes in population appear to be due to drought in the African wintering quarters. In recent years there has been a moderate recovery but its continued breeding success depends to a large extent upon the availability of sand faces in quarry areas.

Hirundo rustica

Barn swallow

Widespread summer visitor and passage migrant associated with farmland with grazing animals and wetlands. The annual breeding population was estimated at between 5,000 and 10,000 pairs 1988-92. Occurring in 1988-92 in 376 (99%) tetrads, that is everywhere but the urban areas of Luton and Bedford. The county population declined by 28% between 1994 and 2000 and was found in only 76% of BBS squares in 2005. Autumn roosts of up to 10,000 birds were occasionally recorded at wetland sites between 1980 and 2000, but more recently typically less than 1,000. The main threat to the population on its breeding grounds is the loss of insect food caused by agricultural practices including pesticide use and the decline in livestock rearing.

Delichon urbicum

House martin

A common passage migrant and summer visitor nesting on buildings across the county. The annual breeding population was estimated at between 3,000 and 6,000 pairs (1988-92). Occurring in 1988-92 at 308 (81%) tetrads, but in only 22% of BBS squares during 2005. During passage periods concentrations of up to 1,000 birds have occasionally been seen over large water bodies. The breeding population is decreasing.

Anthus trivialis

Tree pipit

A very rare breeder, principally along the Greensand ridges, and scarce passage migrant. Breeding on remnant, wooded heathland and clearings in larger woods, new plantations and occasionally on weedy areas adjacent to woodlands. Occurring in 1988-92 in 46 (12%) tetrads the annual breeding population was estimated (1988-92) at between 200 and 400 pairs. The breeding population is now thought to have declined dramatically to under ten pairs, possibly under five (2006). Breeding habitat is lost as plantations mature and clearings grow over.

Motacilla cinerea

Grey wagtail

A localised, resident breeding species with additional wintering birds. Breeds mainly alongside rivers where there is some form of fast flowing water such as a weir or a mill. Passage and wintering birds occur at a wider range of wetland sites. Occurring in 1988-92 at 45 (12%) tetrads the annual breeding population is now (2006) estimated to have increased to ten to 20 breeding pairs. The recent succession of mild winters may have contributed to the population increase.

Prunella modularis

Dunnock

A widespread and abundant resident occurring in farmland, woodland, parks and gardens. The annual breeding population was estimated at between 15,000 and 30,000 pairs (1988-92). Occurring in 1988-92 in 378 (100%) tetrads. The population, but not the overall range, may be showing a slight increase.

Luscinia megarhynchos

Common nightingale

A scarce summer visitor occurring in deciduous woodland with a thick understorey of shrubs (as occurs through coppicing), in young stages of coniferous plantations and scrub along river valleys and around mineral extraction pits. Occurring in 1988-92 in 42 (11%) tetrads, the annual breeding population was estimated at between 75 and 150 territories. There has since been a dramatic decline to a maximum of 30 pairs. The range has declined by a third since 1985. The principal threat is lack of management of its habitat.

Phoenicurus ochruros

Black redstart

A scarce passage migrant and rare breeder. Breeding has been suspected since 1980 at industrial sites in Bedford, Dunstable, Luton and Thurleigh. In only two years, at the latter two locations, has breeding been proven and there has been no proven breeding in the county since 1996. A passage migrant with numbers greater in the spring than the autumn and a preponderance of records in the south of the county. Threats include the redevelopment of industrial and derelict sites.

Phoenicurus phoenicurus

Common redstart

A rare summer visitor to mature woodland and heavily wooded heaths of the western end of the Greensand Ridge and occasionally elsewhere. It also occurs on a wider variety of habitats on passage. The annual breeding population was estimated at between two and ten

pairs (1988-92). Occurring in 1988-92 in 8 (2%) tetrads. In 1999 there were four singing males, with fewer since, with a maximum of two singing males in both 2004 and 2005. The number of tetrads in which it has been recorded as a potential or actual breeding bird has declined by 75% since 1985.

Phylloscopus trochilus

Willow warbler

A common and widespread summer visitor to the county occurring in scrub, woodland edges and large hedgerows. The annual breeding population was estimated at between 15,000 and 30,000 pairs (1988-92), occurring in 1988-92 in 371 (98%) tetrads. The observed decreases in the breeding population have been confirmed by ringing returns and monitoring at regular sites. BBS 1994-2000, 21% decline in Bedfordshire; CBC/BBS 1962 – 2004 62% decline in the East of England.

Phylloscopus sibilatrix

Wood warbler

A rare summer visitor occurring in woodland which has a limited shrub layer. Has bred most regularly along the Greensand Ridge although breeding is now very rare. The annual breeding population was estimated (1988-92) at between none and five pairs. The breeding population is decreasing and there are no records of any breeding from 1998 to 2005.

Panurus biarmicus

Bearded tit

A rare migrant, mainly in winter, and a potential coloniser. They are of conservation concern because a large proportion of the UK's small population (500 – 600 pairs) breeds at a very small number of sites. They are almost wholly confined to reed monocultures and, although mainly insectivorous in the summer, feed on seeds in the winter. This food supply may become unavailable to them in severe winters. From 1985-2005 there have been eight records, all in winter. A pair bred at MVCP in 2006 (for the first time in the county) as the result of the creation of extensive reed beds.

Carduelis flammea

Lesser redpoll

A rare resident and scarce winter visitor, breeding in coniferous and birch woodland. Occurring in 1988-92 in 124 (33%) tetrads with an annual breeding population estimated at between 1,000 and 2,000 pairs, the population is now (2006) thought to have declined to fewer than 20 pairs. Wintering flocks of several hundred birds were recorded occasionally up until the mid-1980's. The cycle of plantation maturation and restocking may be responsible for changes in the population.

Coccothraustes coccothraustes

Hawfinch

Formerly a scarce breeding bird of woodland, favouring those that include beech, hornbeam and wild cherry along the Greensand Ridge and in the south of the county. Occurring in 1988-92 in 12 (3%) tetrads the annual breeding population was estimated at between ten and 30 pairs following a decline by 75% over the previous twenty years. There have been no confirmed breeding records during 1988-2006 despite intensive searches.

Bedfordshire species of local conservation concern

Tachybaptus ruficollis

Little grebe

A widespread resident and winter visitor to wetlands with areas of emergent vegetation ranging from rivers and small ponds to mineral extraction pits. The breeding population has declined rapidly to fewer than 50 pairs. Occurring in 1988-92 in 58 (15%) tetrads. Winter numbers peak at around 40 at one or two localities but groups of ten to 15 are more typical. Threats include too frequent management of watercourses which remove emergent vegetation.

Ardea cinerea

Grey heron

A resident seen widely at small and large wetlands hunting predominantly for fish. Seven heronries are regularly used in the county at Bromham Park, Tustings Lake, Radwell Lake, Luton Hoo, Woburn Park and Southill Park. Harrold-Odell Country Park has recently been colonised. The annual breeding population has been estimated at between 60 and 70 pairs (2005) The breeding population is increasing slowly and is now higher than for many years. Threatened by the expansion in numbers of breeding Cormorants. Late summer and autumn concentrations have peaked at around 25 at a number of wetland sites. Threats include pollution which affects their food supply and persecution.

Aythya fuligula

Tufted duck

A numerous winter visitor and regular breeder in small numbers. Breeding occurs predominantly in the well-vegetated pits along the river valleys and also at parkland lakes. The annual breeding population has been estimated at between 75 and 150 pairs (1988-92). Occurring in 1988-92 in 72 (19%) tetrads. The breeding population is stable. Wintering maxima in the county occur in the Marston Vale with occasional peaks of several hundred.

Accipiter gentilis

Northern goshawk

A rare visitor to well-wooded areas, particularly the Greensand Ridge. The population originated from captive birds. There have been no confirmed breeding records since 1987, although it is a difficult species to prove breeding and displaying birds are seen most years. Threats include illegal persecution. Between 1996 and 2005 there was an average of 3.6 records per year. Of these records 31 were of isolated individuals. Of the other five records two were at one site, but one in spring and one in autumn. In one year in the mid-1990's there were three sightings, including a displaying pair, over a four- or five-day period at one site.

Falco subbuteo

Hobby

A summer visitor well distributed in farmland areas across the county. The annual breeding population (1988-92) was estimated at between 25 and 50 pairs. Occurring in 1988-92 in 134 (35%) tetrads (32 in the 1968-77 atlas survey). The population has remained reasonably stable.

Charadrius dubius

Little ringed plover

A scarce breeding species and regular passage migrant in small numbers. Breeding occurs at mineral extraction pits where there are bare, dry, stony areas adjacent to the water. Such conditions are also maintained artificially at one sewage works for these birds. Passage birds occur in similar habitats. Occurring in 1988-92 in 21 (6%) tetrads. The population has decreased by around a quarter since the peak in 1979 but is now stable. The annual breeding population has been estimated at between five and fifteen pairs (2006) but varies due to the ephemeral nature of suitable habitat. Threats include disturbance and vegetation succession at mineral extraction sites.

Sterna hirundo

Common tern

A common passage migrant and regular but localised breeder at mineral extraction sites. The annual breeding population was estimated (1988-92) at between 25 and 75 pairs. Occurring in 1988-92 in 41 (11%) tetrads. The breeding population is stable at between 50 and 60 pairs (2006). Breeding occurs on bare, stony islands in the early years of mineral extraction with sites becoming unsuitable once they are flooded or used as rubbish tips. The provision of rafts has provided nesting sites for these birds at mature pits and at a sewage works.

Asio otus

Long-eared owl

A rare resident and scarce winter visitor, breeding in conifer plantations or thick hawthorn scrub on former chalk downland. The annual breeding population was estimated (1988-92) at between 5 and 20 pairs. The breeding population is stable. Wintering numbers vary from year to year, but probably never more than 25, (there was only one record in 2004 and three in 2005), dependent upon feeding conditions on the Continent. Disturbance by birdwatchers and clearance of downland scrub have been identified as threats.

Oenanthe oenanthe

Northern wheatear

A regular passage migrant and rare breeder. Breeding was last confirmed in 1987. Confirmed or suspected breeding has been recorded on eight occasions since 1985, with never more than one or two pairs, predominantly along the chalk ridge, its stronghold when it was more numerous. On passage numbers are greater in the spring, occasionally reaching between ten and 20 on any one day at one site.

Carduelis chloris

Greenfinch

A common resident, widespread in the county. The annual breeding population was estimated (1988-92) at between 10,000 and 20,000 pairs. Occurring in 1988-92 in 378 (100%) tetrads. The breeding population is stable or increasing. Occasional records of winter flocks of over 1,000 birds were made 1965-75 but only one flock approaching this number has been noted since 1985. Agricultural intensification is thought to have affected this species although possibly less than many other seed-eaters.

Loxia curvirostra

Common crossbill

An irregular visitor, occasionally breeding in coniferous plantations along the Greensand Ridge. The annual breeding population varies from none to five pairs. Non-breeding flocks have been recorded mainly along the Greensand Ridge, numbering up to 50 birds at any one site. Such occurrences are sporadic depending upon the population and food supply in mainland Europe.

Principal data sources for the "three sentence texts" on the conservation concern lists

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