

were in the upper Elan Valley on 28th. Three thousand flew south and east down the Edw Valley on 14th October 2011 and on 29th October 2012 a total of 4,500 flew west up the Wye Valley at Glasbury and 3,300 flew west at New Radnor.

Many tens of thousands of birds stay in Radnorshire throughout the winter provided that the ground does not become frozen and snow cover does not last for any length of time. Noisy flocks of several hundreds systematically probing grasslands is a common sight in the county, as are groups of 10-50 ridding garden lawns of leatherjackets and aerating the soil in the process. At Garnfawr, near Franksbridge, there were 3,000 in the fields throughout the winter of 1987/8 and 5,000 near Llandrindod Wells on 15th February 1974. Large feeding flocks are often present in the Elan and Claerwen Valleys in winter, depending on the tipulid populations. There were 7-8,000 present in the Pont ar Elan area from January to March 2007 and 4,000 at Claerwen Farm on 13th March 1999.

The main roosting area in Radnorshire is in the conifer plantations of the Llanfihangel nant Melan/Llandegly Rhos area which has been used since at least the late 1970s. The plantation by Llandegly Rhos held 20,000 birds on 16th January 1978 and 29th November 1983 and had 10-50,000 occasionally between November and March in most winters between 1986 and 2000. Plantations in the nearby Fforest Inn area used to hold most of the birds with a small wood at Llanfihangel having a roost of 10-60,000 birds for most of the time during the winters between 1984 and 2002. However, shooting of the roost took place at times in an effort to persuade the birds to go elsewhere, which they have done for the most part ever since.

Since 2003 the roost has largely moved to Llandegly Rhos and steadily increased in numbers with counts at dawn and dusk producing average figures of between 135,000 and 180,000 birds. It is likely that even more birds use the roost on occasion especially in early November and late February/early March - soon after the main arrivals from the continent and prior to emigration. The highest counts are made during periods of fine, calm, weather and the fewest during very windy, wet and stormy, conditions when birds presumably find somewhere closer to their daytime feeding areas to spend the night. The current age and planting density of the plantation seems to be ideal for roosting Starlings and although predators such as Hen Harrier, Merlin, Sparrowhawk, Goshawk and Short-eared Owl are in attendance most evenings, the site is undoubtedly safer than ones used in the area in the past.

At least 65% to 75% of the birds now come from areas to the east of the roosting area and this seems to account for most of the increase in numbers as many fewer did so prior to 2001. Birds not only come from all parts of Radnorshire but also from well into Herefordshire with flight lines traced at least as far east as Shobdon. In general birds come in from a radius of c.25km.

Another roost in conifers by Perthi Common (on lower ground about five miles to the south-west of Llandegly Rhos) also held a large roost in some winters between 1987 and 2009 when the site was clearfelled. The site was used mainly as an alternative to the Llanfihangel/Llandegly area during periods



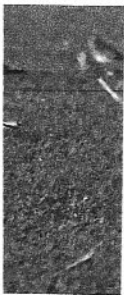
FIG 8. Flock of larks and finches over feeding area on farmland at Southernness, south Scotland (Richard & Barbara Mearns).

...greatly with the resources available. Arable farms that offer abundant winter seeds can support flocks of hundreds or thousands of small seed-eaters, while pastoral farms may support few or none.

Apart from exceptionally severe winters, farmland in Britain remains damp and unrozen for most of the time. It is the mildness of our winters that attracts the large seasonal influx of immigrant Lapwings, Starlings, thrushes and other ground-feeding species which depend on accessible soil-dwelling worms and other invertebrates. Grass fields tend to be used more in winter than in summer, because in winter the grass is short, giving easy access for ground-feeding birds, along with all-round visibility. For grazing and seed-eating species, too, autumn harvesting can leave substantial crop residues such as stubble grain and waste potatoes, while autumn sowing creates young growth of cereals and grass that may be grazed in winter by geese and swans, and rape that may be grazed by pigeons and others.

IMPORTANCE OF SEMI-NATURAL AND NON-CROPPED AREAS

One feature of British farmland, as mentioned above, is that patches of different semi-natural habitats occur within a matrix of crops and grass, bringing many more birds into the farmed environment than would otherwise occur there. In addition, some species make use of more than one type of habitat at the same time of year, nesting mainly in one and foraging mainly in another. Species such as the Rook and Woodpigeon nest in trees but feed chiefly on the ground in open fields, while some upland species, such as Twite and Golden Plover, nest mainly on moorland but get much of their food from nearby hill pastures. The



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CHAPTER 2

Population Trends in Farmland Birds

CHANGES IN THE BIRD POPULATIONS of Britain, due to human effects on their habitats, have presumably been occurring at least since the start of the Neolithic period, about 6,500 years ago, when agriculture began. Some of the known changes from earlier centuries are discussed in other chapters, but here we are concerned primarily with the changes of recent decades, associated with the period of agricultural intensification, when changes in both agriculture and bird populations were well monitored.

MEASURED CHANGES

Recent population changes in farmland birds are often assessed from 1970 because although detailed counts started in the 1960s, exceptionally hard winters early in this decade had major effects on bird numbers. By 1970, populations had recovered from these weather effects, but had not yet been exposed to the full impacts of developing agriculture. Measured changes in numerical abundance over the period 1970–2013 are shown in Figure 13 for 24 widespread bird species which gain their food mainly or entirely from farmland. A decline of 100% would represent extinction in Britain, and four of the species shown declined in this time by 90% or more, namely the Grey Partridge, Turtle Dove, Tree Sparrow and Corn Bunting, while the Starling declined by an estimated 81%. More than half the species on the list decreased in this period by more than 50%. The seven species that increased included three corvid species whose numbers rose for reasons not fully understood (but see below), two pigeons that were declining

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but began to increase after the widespread introduction of oilseed rape, whose leaves provided them with winter food, and two finches which also benefited from new food sources. The Goldfinch was declining into the mid-1980s but was then provided with an alternative food source (mainly niger seed) at garden bird-feeders, and has since undergone a sustained increase, while the Chaffinch



FIG 13. Net percentage change in the breeding populations of 24 farmland birds in the UK during 1970–2013. All these species obtain some or all of their food from farmland. Based on BTO data in Hayhow *et al.* (2015a).

POPULATION TRENDS IN FARMLAND BIRDS · 31

Species	Long-term trend (1970–2013)	Short-term trend (1995–2013)
Green Woodpecker	+102	+31
Great Tit	-52	-40
Goldfinch	n/a	-11
Partridge	n/a	-19
Magpie	+99	-1
Linnet	+146	+53
Robin	n/a	-20
Common Crow	+97	+18
Hooded Crow	n/a	+11
Raven	n/a	+42
Shrike	-60	-24
Swallow	+15	+26
House Martin	-47	-10
Starling	-81	-50
Wren Thrush	-59	-31
Whinchat	n/a	-54
Whistler	n/a	-6
House Sparrow	-65	-3
Tree Sparrow	-90	+122
Yellow Wagtail	-67	-41
Pied Wagtail	+29	-7
Tree Pipit	-68	+13
Meadow Pipit	-39	-15
Chaffinch	+31	+7
Bullfinch	-41	+6
Greenfinch	-33	-32
Linnet	-60	-29
Lesser Redpoll	-85	+40
Goldfinch	+144	+111
Corn Bunting	-90	-40
Yellowhammer	-55	-15
Red Bunting	-38	+19

The first Redwings usually arrive in Radnorshire in the second half of September, although in some years when the berry crop in Scandinavia is very heavy and/or the weather is mild and the wind in the southerly half, then the first arrivals may not turn up until early October. Most birds come from Scandinavia but also some at least come to Wales from much further east into Russia and small numbers from the Faeroe Islands and Iceland.

The earliest ever record was in the Elan Valley on 14th September 2011, but after that there were no more in that year until 22nd. There were two on the 17th September in the Elan Valley in 2004 and 11 on the same date at Llyn Heilyn in 1996, accompanied by the county's earliest ever Fieldfare. There has never been an autumn in Radnorshire when the first Fieldfare has been recorded before the first Redwing, although the first dates have coincided in four years.

The main arrivals are usually in October but rarely may not be until early November. Large flocks are recorded either quickly flying through or stopping to rest or feed avidly on Hawthorn and Rowan berries. Huge numbers also pass through at night as their calls are very commonly heard flying overhead after dark. Overall numbers have undoubtedly increased markedly in Radnorshire since the 1980s, possibly a sign of climatic change affecting berry crops elsewhere.

Flocks of hundreds are common whilst four-figure counts are sometimes made: 1,000 flew south-west over Newbridge on 5th October 1984, 1,000 came into the Elan Valley from the east on 3rd November 1986, 3,000 flew south down the Elan and Claerwen Valleys in two hours on 25th October 1990, 3,000 were at Nantmel on 21st October 1995, 1,000 at Newbridge on 10th October 2004, 3,000 at Radnor Forest on 4th November 2008, 2,500 at Radnor Forest on 13th October 2011, 2,000 flew south and east over Llyn Heilyn on 14th October 2011, 1,200 were in the Elan Valley on 17th October 2011 and 1,100 on 29th October 2012.

There have been three very large arrivals of Redwings into Radnorshire. On the night of the 1st to 2nd November 1992 probably many tens of thousands were grounded across the county. Alongside the A44 in the Llandegley/Penybont area there were at least 20-30,000 birds on pastures and in Hawthorn hedges on the early morning of the 2nd and flocks of 300-1,200 were present across the length and breadth of the county. There were still many thousands present for the next two weeks or so but nearly all had moved on by the 21st November by when just about every Rowan, Hawthorn and Holly berry in the county seemed to have been eaten.

Another major arrival took place on 28th October 2006 on which date there were 5,000 at Glasbury, 3,500 at Llanyre, 2,500 in the Elan Valley, 1,000 at Nant Glas and 7,500 flying south-west over Radnor Forest. In October 2009 a roost at the Gwaelod plantation in the Elan Valley held at least 6,650 birds on 15th and 2,000 were counted flying south there on 19th. With the huge numbers of Fieldfares recorded in the Valley on 28th October there were a minimum of 6,000 Redwings and 3,400 still present the following day.

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weather on 25th November and another ringed near Abbeycwmhir on 27th June 1976 was killed by a car in Lincolnshire on 10th September (286 km ENE). Other birds ringed elsewhere and found in Powys have come from Clwyd (2), Dyfed, Gwent, Hereford & Worcester (3), Shropshire and Staffordshire and a Powys ringed bird was found in Gwent.

A nestling ringed at Keminmaa, Lappi, Finland, on 1st July 1996 was found dead for some weeks near Gilfach, north of Rhayader, on 23rd November (2,179 km SW).

Merlin *Falco columbarius*

Rare breeding bird; passage migrant and winter visitor.

Breeds from Iceland, the Faeroes, the British Isles and Scandinavia east across Russia to Kamchatka and the Bering Sea, south to Manchuria, northern Mongolia, Kazakhstan and Uzbekistan. Mostly migratory; wintering in USA, central and northern South America, southern, central and western Europe, the Arabian Peninsula, north-west Africa and from Afghanistan east to China and Japan.

Ingram and Salmon (1955) reported the Merlin's status as, 'a breeding bird in relatively small numbers ... thirty or so years ago its numbers were appreciably greater than they are today.'

There seems little doubt that the decline has continued due mainly to the huge losses of heather moorland in the 1960s which were replaced with improved grassland and, to a lesser extent, conifer plantations. Also corvid numbers have tripled since the mid-1970s and competition for nest sites in isolated moorland-edge trees and predation of eggs has increased as has the predation of adults and flying young by Goshawk and Peregrine since the late 1980s. Organochlorine pesticides undoubtedly had some effect on Radnorshire Merlins as an egg analysed in the 1970s had the highest concentration of PCBs (polychlorinated-biphenols) ever found in a Merlin's egg at the much higher than lethal level of 24.3 parts per million.

A complete and thorough survey has never been undertaken, and would be very difficult. However, in the late 1970s up to ten pairs were found whilst in the 1980s visits to previously used and likely places found six to eight in 1987, nine in 1988, 13 in 1991, seven in 1998 and 10 in 1999. Thirteen pairs were found in 2003, nine in 2006, seven in 2007, eight in 2008, 12 in 2010 but just six in 2011 and seven in 2012.

In the past nest sites were usually in old corvid nests in hawthorns and also, rarely, on the ground in extensive areas of rank heather moorland. Nesting in conifers started as early as 1956 when two nests were found in old Buzzard and Carrion Crow nests. Today, close to the edge of a conifer plantation bordering heather moorland is the commonest nesting site although hawthorns are still used, especially



Figure 4.7. A stackyard in Buckinghamshire in 1947, the work of Mr. William Chandler (at right), a master craftsman. (Courtesy of Rural History Centre, University of Reading.)

presence of landowners and/or tenants of enterprise, energy and capital. Consequently neighbouring parishes or commons might be enclosed at very different times so that extensive areas of semi-natural habitats tended to be increasingly fragmented, a process that has different effects on birds than simple habitat loss. Tubbs (1985) showed the relationship between declining area and increasing numbers of fragments for lowland heath from 1800 and that process affected downland and fen habitats similarly. The process has continued into the twentieth century, as Armstrong (1973) illustrated for the Suffolk Sandlings. Its impact remains evident in areas such as north Norfolk, where Kelling Heath, Walsey Hills and Salthouse Heath are the remaining fragments of what was once a virtually continuous belt of heathland east to Cromer, in the scattered fragments of heathland remaining in the Weald, and in Radnorshire, where the Maelienydd and Penybont Commons are the remaining fragments of the Great Common, which extended from Builth Wells 20 km north to Llanbister before enclosure in the 1850s and 1860s. Such remaining fragments were often the least fertile and left for the rural poor to gather fuel.

Fragmentation had an important general effect on heathland birds, for plot size is related to bird species diversity in heathland (Fuller 1982). Peers