

2.3 Turtle dove

2.3.1 General ecology

Turtle doves overwinter in sub-Saharan Africa and breed throughout most of Europe. After migrating through Spain and France they arrive in Britain from late April and start breeding immediately. After breeding, turtle doves start the autumn migration in early August, although birds can start nesting attempts throughout August. In Britain, the turtle dove favours the relatively warm, dry conditions of southern and eastern England. Turtle dove habitat consists of a mixture of tall, thick, mature hedgerows, shrubby woodland margins or tall scrub for nesting, and open, weedy patches for feeding.

2.3.2 Diet

The turtle dove's diet consists solely of the seeds of weeds and crops obtained by foraging on the ground. Turtle doves feed at a range of sites, including farmyards, stubbles after harvest, animal feed sites and weedy areas, especially where the vegetation is short and sparse. They forage over relatively large distances, and have been recorded feeding over 10 km from nesting sites. There has been a marked change in diet since the 1960s, when over 90% of the diet was made up of weed seeds. In the 1990s, weed seeds composed less than 40% of the diet, with wheat and oilseed rape seeds making up the rest. Given the relative abundance of weed and crop seed, turtle doves clearly selectively eat weed seeds where these are available. The change in diet reflects the availability of feeding habitats, which in the 1960s included more weedy arable fields, clover leys and hay fields; in the 1990s, these were either absent or greatly reduced. The reduced amount of weeds within cropped areas means that weed seeds are now largely confined to headlands and uncropped areas (including set-aside). The weed seeds commonly taken include fumitory (seed availability peaks in June), and chickweed and knotgrass (seed availability peaks in August). Seeds are generally more available during the



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Plate 2.3
Turtle dove

second half of the breeding season and feeding sites change through the summer as seed sources become depleted and new sources become available. A single rich food source, such as set-aside, a particularly weedy crop or an area of spilt grain, can attract most of the turtle doves in an area if feed sites are very limited.

Chicks are fed on crop milk produced by the adult for the first few days, and by about seven days they are fed on the same diet as the adults. There is no evidence that reduced seed availability has affected the success of individual nesting attempts or chick condition.

2.3.3 Breeding

Turtle doves breed in a range of habitats including young woodland, plantations and heathland, but the majority nest in arable areas with a mix of suitable nesting and feeding habitats. A study in East Anglia in the 1990s found 42% of nests in hedgerows, 25% in scrub, 18% in young plantations and woodland, and 15% in isolated bushes. The woody species used for nesting were hawthorn in 53% of cases, Norway spruce in 17%, elder in 14% and apple in 6%. Nest location ranged from just above ground level up to 20 m high, but averaged 2 m above ground. Many nests were closely associated with climbing plants such as traveller's joy, honeysuckle

and bramble. The availability of nesting habitat could be the factor limiting breeding densities in some areas. Hedgerows used were generally over 4 m high and about 3 m wide.

Turtle doves breed in the first summer after fledging. Egg-laying starts in early-May and finishes by the end of August. Peak breeding activity is in the first two weeks of June. In the 1960s there was a second peak in early August, but this no longer occurs.

The clutch typically contains two eggs, ranging from one to three. Incubation generally takes 13 to 16 days and chicks fledge after about 20 days, so the full cycle takes five to six weeks. Turtle doves can rear three broods in a year if suitable conditions exist, although only about 20% of pairs started a new nesting attempt after successfully rearing a first brood in East Anglia in the 1990s. Multiple broods were more common 30 years ago. They make up to five nesting attempts if earlier attempts fail.

In the 1960s each pair laid on average just under three clutches of eggs, and produced about two fledged young. In the 1990s this had decreased dramatically to about one and a half clutches per pair and just over one fledged young.

2.3.4 Population trend and distribution

Historically the range of turtle doves in the British Isles has been restricted to England and Wales. There is evidence that turtle dove numbers in Britain increased between the mid-1800s and 1970. However, they declined by 77% between 1970 and 2001. The range contracted by 25% in the 1970s and 1980s, especially from Wales (where it is now very rare) and south-west England (Figure 2.3).

2.3.5 Causes of decline

A number of factors have probably contributed to the decline of the turtle dove. Today, birds finish nesting earlier and only produce half the number of

clutches and half the number of fledged chicks per pair compared with the 1960s. This is sufficient to explain the decline that has occurred over this period. Ironically, seed food availability in the latter period of the breeding season is greater than at the start of the season, due to the availability of ripening rape seed and cereal grains and it may be that adults arriving in the UK in late April struggle to attain breeding condition, and rearing a first brood reduces their fitness to such a degree that they are incapable of attempting subsequent broods. The switch from feeding on weed seeds in weedy crops scattered across arable farmland in the 1960s to scarce seed-foraging opportunities such as sparse crops, grain spillages or weedy field corners in the 1990s has probably caused the reduction the number of breeding attempts by reducing adult fitness.

Loss of mature hedgerows and scrub on farmland may have limited nesting habitats in some areas. It is unknown whether any additional factors have affected survival

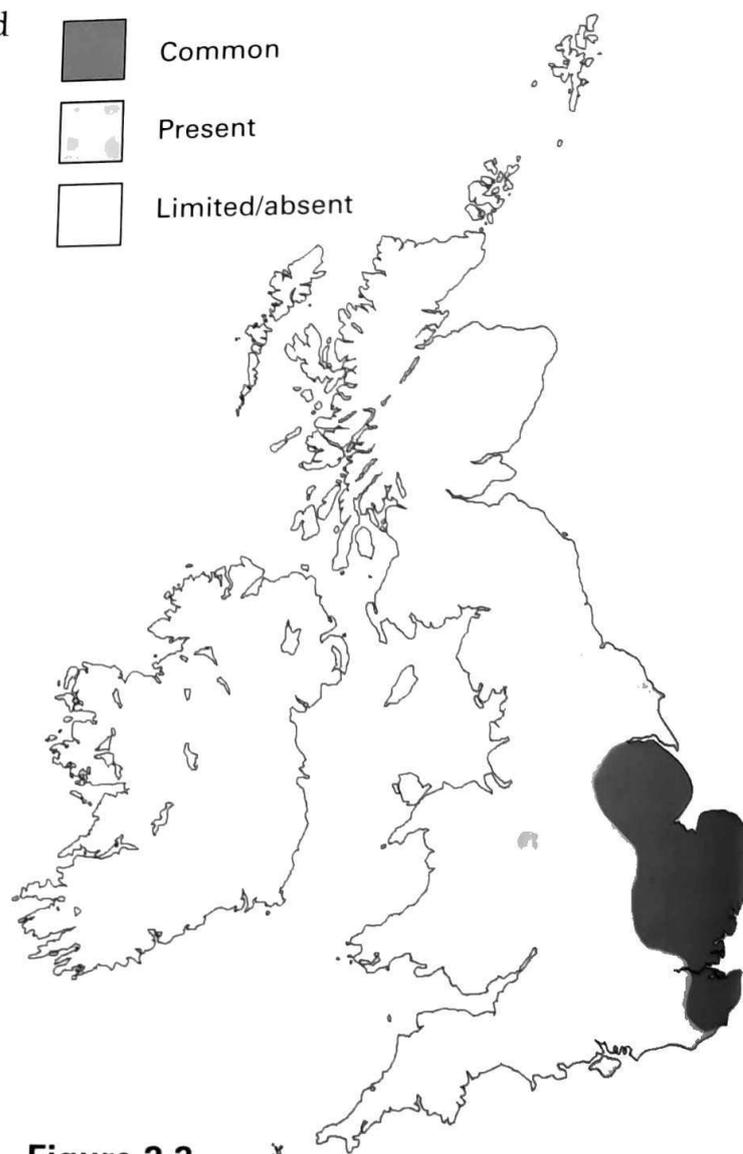


Figure 2.3 Distribution map showing the relative abundance of the turtle dove in Britain and Ireland in 1988–91.

birds in their African wintering grounds or on migration.

2.3.6 Management advice

Arable

The overall objective on arable farmland is to provide a rich seed-source in combination with good nesting habitat (see 'hedges, scrub and woodland' below). Easy access to the ground for feeding is important for this species, so dense crops are not useful, even if seeds are plentiful. Cultivated field margins (see section 3.11) and summer fallows (see section 3.16) can attract turtle doves if a diverse broad-leaved flora develops rather than a thick sward of competitive grass weeds and cleavers. Conservation headlands and low-input cereals (see sections 3.12 and 3.13) can provide areas of useful broad-leaved weeds, especially if no fertiliser is used, as the birds will have easier access to the ground. Cereal, pea and rape stubbles left until the end of August will provide important feeding sites for birds prior to migration.

Natural regeneration of rotational set-aside (see section 3.15) can provide weed seeds if the cover is not sprayed off too early in the spring, or does not become too tall and dense. Wild bird cover (see section 3.7) sown with a low seed rate is beneficial, especially if weed seeds such as fumitory are present. The low seed rate allows germination of weeds and gives the birds easier access to the ground. Oilseed rape and cereals are useful components in the mix.

Grassland

Restoration of species-rich hay meadows and herb-rich grasslands will provide alternative feeding habitats. Arable pockets (see section 3.18) or wild bird cover (see section 3.7) in pastoral areas are essential to maintain turtle doves in areas that have become predominately agricultural grasslands.

Hedges, scrub and woodland

Selected mature hedgerows (see section 3.1) should be allowed to reach at least 4 m in

height and exceed 2 m in width. Cutting should be no more frequently than once every two to three years, preferably trimming alternate sides of the hedge in different years. Climbers, such as bramble, traveller's joy and honeysuckle, should not be removed from mature hedgerows.

Areas of scrub and scrubby margins of woodlands should be retained. New and existing woodland margins or field corners should be planted with hawthorns (but do not plant trees on species-rich grasslands). New plantings should be sited close to seed-rich foraging habitats wherever this does not detract from the requirements of farmland species requiring open arable farmland, such as grey partridge, lapwing and corn bunting.

Table 2.3 below shows beneficial options.

Table 2.3 Effects of different forms of land management on the turtle dove.

	Nesting	Seed food
Maintain tall, thick hedges	✓	
Scrub and scrubby wood margins	✓	
Arable pockets in pastoral areas		✓
Summer fallow		✓
Cultivated margins		✓
Hay meadow		✓
Rotational set-aside		?
Wild bird cover		?
Conservation headlands		?
Low-input cereal		?
Post-harvest stubble		?
Unimproved grassland		?
✓ indicates positive benefits ? indicates potential benefits dependent on management and outcome		

Further reading

Browne S J and Aebischer N J (2001) *The role of agricultural intensification in the decline of the turtle dove* *Streptopelia turtur*. English Nature Research Report No 421, Peterborough.

- Browne, S J and Aebischer, N J (2002) The effect of supplementary feeding on territory size, territory density and breeding success of the Turtle Dove *Streptopelia turtur*: a field experiment. *Aspects of Applied Biology* 67: 21–26.
- Browne S J and Aebischer N J (2003) Habitat use, foraging ecology and diet of Turtle Doves *Streptopelia turtur* in Britain. *Ibis* 145: 572–582.
- Browne S J and Aebischer N J (2004) Temporal changes in the breeding ecology of European Turtle Doves *Streptopelia turtur* in Britain, and implications for conservation. *Ibis* 146: 125–137.
- Browne S J, Aebischer N J, Yfantis G and Marchant J H (2004) Habitat availability and use by Turtle Doves *Streptopelia turtur* between 1965 and 1995: an analysis of Common Birds Census data. *Bird study* 51: 1–11.
- Calladine J R, Buner F and Aebischer N J (1997) *The Summer Ecology and Habitat Use of the Turtle Dove Streptopelia turtur: A Pilot Study*. English Nature Research Report No 219, Peterborough.
- Murton R K (1968) Breeding, migration and survival of turtle doves. *British Birds* 61: 193–212.
- Murton R K, Westwood N J and Isaacson A J (1964) The feeding habits of the Woodpigeon *Columba palumbus*, Stock Dove *C. oenas* and Turtle Dove *Streptopelia turtur*. *Ibis* 106: 174–188.

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