



Turtle Dove National Survey Methods

Survey background

The turtle dove is the UK's fastest declining bird and so one of our highest conservation priorities. Urgent conservation action is needed to prevent extinction following a decline of 95% between 1995 and 2018 (BTO/JNCC/RSPB UK Breeding Bird Survey).

We now have good evidence to understand the causes of turtle dove population decline. Research shows that a drop in breeding productivity has been a main driver. A change in diet from mainly seeds of arable plants in the 1960s to mainly cultivated seeds crops (probably available mostly as spilled seed rather than in situ) by the late 1990s has coincided with a reduction in the number of nesting attempts (and, hence, fledged young) per pair per year. The resulting reduction in annual productivity alone is enough to explain the population decline observed from 1970 to 2000. Although there are recent signs of some improvement in annual productivity within the remaining population, the number of nesting attempts and chicks fledged per season remain well below levels seen in the 1960s. The other key driver, operating at a continental scale, is unsustainable levels of hunting taking place along the birds' autumn migration route through south-west Europe. To achieve a long-term population recovery, both the quality of breeding season habitats, and the sustainability of hunting levels, must be improved simultaneously, and maintained in the long term. Good progress is being made on both fronts by national and international conservations partnerships.

A national survey of turtle doves in the UK now is very timely. It can provide a comprehensive overview of the current breeding population size and distribution, and therefore help ensure that conservation interventions – such as agri-environment schemes - are well-targeted. Furthermore, the survey can help assess progress of conservation efforts to date, and provide a robust baseline against which to make comparisons, and therefore assess conservation progress, in future. Repeated national surveys can also support the continued monitoring of the turtle dove national population trajectory, as the BBS sample size is now approaching the minimum level from which a robust trend can be produced.

Survey coverage

Across the range, survey 1km-squares have been selected for coverage, based on:

- 1) non-random, self-selected squares in core areas, mostly around existing monitoring/intervention efforts,
- 2) random sampling of occupied 1km-squares, since 2015 (high intensity),
- 3) random sampling of 1km-squares in occupied tetrads from Bird Atlas 2007–11 (medium intensity),
- 4) random sampling of remaining 1km-squares in occupied 10km squares, from Bird Atlas 2007–11 (lower intensity),
- 5) in counties with few recent records, the aim is to cover known and recently occupied sites.

Data from the Bird Atlas 2007–11, county bird clubs, BirdTrack, other Turtle Dove projects and from the RBBP have been used to identify the 1km-squares to be included in the sample survey.

Field methods

The survey area will be selected 1km-squares, with the aim of covering all potentially suitable habitat (see below) in the square. Ideally, undertake **two** survey visits during the breeding season, with a minimum of **four weeks** between each visit. The first visit should be carried out between 11th May and 20th June, and the second visit between 21st June and 31st July.

Survey visits should be conducted **between sunrise and 0900 hrs**. After this time, turtle dove activity reduces significantly. A survey of a 1km-square should take no more than two hours to complete. If you have been allocated multiple survey squares, please do not survey more than one square on the same morning, unless the squares are adjacent. Avoid days with high winds (Beaufort Force 4 (moderate breeze) and above), continuous rain or fog, as poor weather can both inhibit bird activity, and make detection more difficult.

A separate map should be used for each visit. The survey form should be used to record visit information, details of any turtle doves encountered, and an overall survey summary.

Before the first survey, it may be useful to visit your allocated square to identify/check a suitable survey route, so that all areas of potentially suitable habitat are visited and no suitable habitat is more than 200m from the survey route.

To access all potentially suitable habitat in the square, it may be necessary to gain access permission to private land. If you are unable to gain access to all areas of potentially suitable habitat in the square, please survey from public rights of way as close as possible to suitable habitat. A purring turtle dove can be heard up to c300m away in suitable conditions.

Recording information

For each visit, record the date, visit number and start/finish times. Record the date of each visit under '**visit details**' against the appropriate visit number, even if no turtle doves were recorded. For each visit, record the bird observations on the accompanying map. **ALL** turtle dove contacts should be marked on each visit **map** using standard BTO symbols (a list of the symbols is included later in these instructions). Where individual birds are known to have moved within a visit, join their sequential locations with a solid line. After the first visit mark on the map which record(s) refer to the same territory – identifying the first territory as A, the second as B, etc. On the second visit map ensure that the territory codes correspond to those from the first visit.

Record **ALL** turtle dove contacts on the **survey form**, using the same record codes (A, B, etc) as on the **survey map**. After each visit, on the **survey form** please complete the 'summary of observations' for each record, including the appropriate '**Behaviour code**' (enter more than one, if necessary) and a summary of the activities under '**Other notes**'. Also note the number and sex of birds seen or heard – e.g. 1M for 1 male, 2U for a record of 2 unsexed birds. If possible, include details of where birds are seen feeding. If no observations were recorded for a particular territory on either visit, please state this by entering 'nil' in the '**Behaviour codes**' column. If you are unsure of the sex of an adult bird or unsure if the sighting is of an adult or juvenile, please record them as 'unsexed', providing any other details in '**Other notes**'.

Birds that can be positively identified as juveniles (birds of the current year) should be recorded on the **survey form**, but not included as a territory. In mixed flocks of adults and juveniles, give your best estimate of how many adults were present. Juvenile turtle doves **should** also be recorded on the map.

Recording other bird species

It will also be useful to also record the following target species on the survey form and map: grey partridge (P.); lapwing (L.); nightingale (N.); willow tit (WT); mistle thrush (M.); yellow wagtail (YW); tree sparrow (TS); bullfinch (BF); linnet (LI); reed bunting (RB); yellowhammer (Y.); corn bunting (CB). All these birds are of conservation interest and may share one or more elements of turtle dove breeding season habitat, so may benefit from conservation interventions for turtle dove. The species codes are also shown on the survey form.

Plot the location of every target species seen or heard on the separate **survey map** for each visit, using the standard BTO species followed by a record number for each species, e.g. P.1, P.2, BF1, BF2, etc. Record **ALL** records of the target species on the **survey form**, using the same record codes as on the **survey maps**: after each visit, please complete a line for each record in the '**Other target birds**' box, including the appropriate '**Behaviour code**' (enter more than one, if necessary). Also note the number of birds seen or heard for each record. Care should be given to sex and age birds whenever possible.

Habitat recording

For each turtle dove record, please assess the **dominant habitat** roughly 25m around the record using the following **habitat codes** (letter followed by number). Further information can be given in the notes box if the habitat doesn't fit in to the given categories or you wish to provide more details. Record any other important features, e.g. a pond or other waterbodies, around each turtle dove record in the **secondary habitat** box.

Habitat codes and descriptions

A Woodland: 1. Broadleaved 2. Coniferous 3. Mixed (10% each) 4. Broadleaved water-logged 5. Coniferous water-logged 6. Mixed waterlogged

B Scrubland (<5m tall, anything above to be classed as woodland): 1. Regenerating natural or semi natural woodland 2. Chalk downland 3. Heath scrub 4. Young coppice 5. New plantation 6. Clear-felled with or without new saplings 7. other

E Farmland: 1. Improved grassland 2. Unimproved grassland 3. Mixed grass/ tilled land 4. Tilled land 5. Orchard 6. Other farming

F Human sites: 1. Urban 2. Suburban 3. Rural

G Water bodies: 1. Pond (less than 50m²) 2. Small water body (50-450m²) 3. Lake/ unlined reservoir 4. Lined reservoir 5. Gravel/sand pit 6. Stream (<3m wide) 7. River (>3m wide) 8. Ditch with water (<2m wide) 9. Small canal (2-5m wide) 10. Large canal (>5m wide)

J Miscellaneous

Suitable turtle dove habitat

Whereas a reduction in suitable seed food is likely to be the key cause of population decline, turtle doves also require suitable nesting habitat and accessible water sources within their breeding areas. A recent study found that turtle dove territories were more likely to be retained in areas with more nesting and foraging habitat, and with more standing water. Good quality examples of such habitats are described as follows:

Nesting habitat

Most turtle doves nest in mature, dense hedgerows and scrub over 4m tall and 4m wide, typically composed of thorny shrub species such as hawthorn and blackthorn. They prefer areas that have further additional cover provided by climbing plants such as wild rose, wild clematis, bramble and honeysuckle. They will sometimes nest in other woody habitats of similar dense structure - e.g. dense thicket-stage conifer plantations. Not all tall scrub or hedgerows are likely to provide suitable nesting habitat - for example willow scrub, or Leyland cypress hedges are unlikely to be used.



Foraging habitat

Turtle doves feed almost entirely on seeds. Historically, their diet included arable plant species such as stitchwort, fumitory and knotgrass. Turtle doves are ground feeders, taking seeds from areas of short vegetation and bare ground such as fallow areas and farm tracks. They will avoid tall, dense vegetation, even if it does contain suitable seed food. Seed spills in farmyards and game / livestock / wild bird feeding areas are also used.



Water

Sources of clean, fresh water are important for drinking and bathing. These areas should have shallow sloping sides to allow safe access for turtle doves and other species.



Notes on disturbance and confidentiality

Breeding birds and their nest sites should not be disturbed. It is not necessary to find a nest to confirm breeding. Data will be stored securely and only used for appropriate conservation purposes.

STANDARD BTO SYMBOLS TO USE FOR TURTLE DOVE ACTIVITY

When mapping the location of contacts, please use TD to denote each turtle dove record, and the other codes (shown previously) for the other target bird species. Where possible, use the following symbols for male ♂ and female ♀ records.

- TD, 2TD Turtle dove sight records with age, or number of birds if appropriate.
2TD♂ means two pairs together.

- TD Turtle dove territorial behaviour: display flight, head bobbing or puffing up feathers in a visual display

- ⊙TD A purring turtle dove.
- ⊖TD ⊕TD An aggressive encounter between turtle doves.
- *TD An active nest of turtle doves; do not mark empty nests, which are of no territorial significance by themselves.

- TD mat Turtle dove carrying nesting material.

- Turtle dove movements can be shown as follows:**
- TD→ A turtle dove in flight (seen only in flight).
- ⊙TD→ A purring turtle dove perched then flying away (not seen to land).
- TD A turtle dove flying in and landing (first seen in flight).

The following conventions indicate when registrations relate to different birds, and when to the same bird:

- TD→TD A turtle dove moving between two perches. The solid line indicates it was definitely the same bird.

- ⊙TD-----⊙TD Two turtle doves purring at the same time, i.e. definitely different males. The dotted line indicates a simultaneous registration and is of great value in separating territories.

- ⊙TD—⊙TD The solid line indicates that the registrations refer to the same bird.
- ⊙TD—?—⊙TD A question-marked solid line indicates that the registrations probably relate to the same bird.

- TD ⊙TD No line joining the registration indicates that the birds are probably different but depending on the pattern of other registrations they may be treated as if only one bird was involved.