

= Mistle thrush =

The mistle thrush (*Turdus viscivorus*) is a bird common to much of Europe , Asia and North Africa . It is a year @-@ round resident in much of its range , but northern and eastern populations migrate south for the winter , often in small flocks . It is a large thrush with pale grey @-@ brown upperparts , a greyish @-@ white chin and throat , and black spots on its pale yellow and off @-@ white underparts . The sexes are similar in plumage , and its three subspecies show only minimal differences . The male has a loud , far @-@ carrying song which is delivered even in wet and windy weather , earning the bird the old name of " stormcock " .

Found in open woods , parks , hedges and cultivated land , the mistle thrush feeds on a wide variety of invertebrates , seeds and berries . Its preferred fruits including those of the mistletoe , holly and yew . Mistletoe is favoured where it is available , and this is reflected in the thrush 's English and scientific names ; the plant , a parasitic species , benefits from its seeds being excreted by the thrush onto branches where they can germinate . In winter , a mistle thrush will vigorously defend mistletoe clumps or a holly tree as a food reserve for when times are hard .

The open cup nest is built against a trunk or in a forked branch , and is fearlessly defended against potential predators , sometimes including humans or cats . The clutch , typically of three to five eggs , is incubated for 12 ? 15 days , mainly by the female . The chicks fledge about 14 ? 16 days after hatching . There are normally two broods . There was a large range expansion in the 18th and early 19th centuries , although there has been a small decline in recent decades , perhaps due to changes in agricultural practices . Given its high numbers and very large range , this thrush is classified by the International Union for Conservation of Nature as being of least concern .

= = Taxonomy = =

The mistle thrush was first described by Linnaeus in his *Systema naturae* in 1758 under its current scientific name . The bird 's liking for mistletoe berries is indicated by both its English and scientific names . *Turdus* is the Latin for " thrush " , and *viscivorus* , " mistletoe eater " , comes from *viscum* " mistletoe " and *vorare* , " to devour " .

There are more than 60 species of medium to large thrushes in the genus *Turdus* , characterised by rounded heads , longish pointed wings , and usually melodious songs . A mitochondrial DNA study identified the mistle thrush 's closest relatives as the similarly plumaged song and Chinese thrushes , all three species being early offshoots from the main *Turdus* radiation , and hence more distantly related to other European thrushes such as the common blackbird .

At least eight subspecies have been proposed , but the differences are mainly clinal , with birds of the nominate subspecies becoming paler and less densely spotted in the east of the range . The currently accepted subspecies are :

Turdus viscivorus viscivorus , Linnaeus , 1758 . The nominate subspecies .

T. v. bonapartei , Cabanis , 1860 .

T. v. deichleri , Erlanger , 1897 .

An isolated population in Crimea has sometimes been separated as *T. v. tauricus* , but this is not considered to be a valid form . Mistle thrush fossils have been found in Pleistocene deposits from Poland and Sicily .

= = Description = =

The mistle thrush is the largest thrush native to Europe . The nominate subspecies measures 27 ? 28 cm (11 ? 11 in) in length , with a 45 cm (18 in) wingspan . It weighs 93 to 167 g (3 @. 3 to 5 @. 9 oz) , with an average of around 130 g (4 @. 6 oz) . It has a stocky upright posture when on the ground . It has pale grey @-@ brown upperparts , the chin and throat are greyish @-@ white , and the yellowish @-@ buff breast and off @-@ white belly are marked with round black spots . The spotting becomes denser on the lower chest , giving the appearance of a breast @-@ band . The long tail has white tips on the outer feathers , and the underwing coverts are white . The eyes

are dark brown and the bill is blackish with a yellowish base to the lower mandible . The legs and feet are yellowish @-@ brown . There are no plumage differences between the sexes . Juveniles are similar to adults , but they have paler upperparts with creamy centres to many of the feathers and smaller spots on the yellowish underparts . By their first winter they are very similar to adults , but the underparts are usually more buff @-@ toned .

The eastern subspecies *T. v. bonapartei* is 30 cm (12 in) in length , and therefore slightly larger than the nominate form . It is paler grey above and whiter below , with fewer black spots . Birds of intermediate appearance are seen west of the Ob River where the range overlaps with *viscivorus* . The southern race *T. v. deichleri* resembles *bonapartei* in appearance , but is closer in size to the nominate *viscivorus* , although it has a more slender bill .

Adults have a full moult after breeding , beginning between late May and the end of June , and completed by early October . Juvenile birds have a partial moult , replacing their head , body , and covert feathers ; this is completed by October , although the start of the moult depends on when the chicks hatched .

The mistle thrush is much larger , paler and longer @-@ tailed than the sympatric song thrush . In the western Himalayas it could be confused with both the plain @-@ backed and the long @-@ tailed thrushes . These are similar to the mistle thrush , but the plain ? backed thrush lacks obvious wing bars , is more rufous above than its relative , and is barred rather than spotted below . The long @-@ tailed thrush has olive @-@ toned upperparts , bars on its breast and two wing bars . Juvenile mistle thrushes are superficially similar to White 's thrush , but that species has golden @-@ yellow plumage , scalloped underparts and a distinctive underwing pattern .

= = = Voice = = =

The male mistle thrush has a loud melodious song with fluted whistles , sounding like chewee @-@ trewuu ... trueetruuruu or similar , repeated three to six times , and used to advertise his territory , attract a mate and maintain the pair bond . The tone resembles that of the song thrush or blackbird , but compared to its relatives the mistle thrush 's repertoire is less varied and the delivery is slower . The song is , however , much louder , often audible up to 2 km (2 @,@ 000 yd) away . The song is given from a treetop or other elevated position mainly from November to early June . The male is most vocal in the early morning , and its tendency to sing after , and sometimes during , wet and windy weather led to the old name " stormcock " . The song may be heard in any month , although it is uncommon from July to August while the thrush is moulting . The main call , given by both sexes , is a dry chattering krrrr , louder when it is alarmed or excited . It is often likened to the sound of a football rattle , a form of musical ratchet . There is also a squeaky tuk contact call .

= = Distribution and habitat = =

The mistle thrush breeds in much of Europe and temperate Asia , although it is absent from the treeless far north , and its range becomes discontinuous in southeast Europe , Turkey and the Middle East . In these warmer southern areas , it tends to be found in the milder uplands and coastal regions . Nominate *T. v. viscivorus* breeds in Europe and in Asia east to the Ob , beyond which it is replaced by *T. v. bonapartei* . The southern form *T. v. deichleri* is resident in North Africa , Corsica and Sardinia .

The mistle thrush is a partial migrant : birds from the north and east of the range wintering in the milder areas of Europe and North Africa . Scandinavian and Russian birds start moving south from mid @-@ September onwards , most birds wintering in Europe , western Turkey and the Middle East . Between mid @-@ October and November , large numbers cross the Strait of Gibraltar and others pass through Cyprus , but there is hardly any migration across the North Sea . Breeding birds in the British Isles and north @-@ west Europe are resident or move only short distances . In the Himalayas , the breeding population moves to nearby lower @-@ altitude sites in winter . Return migration starts mainly from late March , although it can be a month earlier in the Middle East , and northern breeders may not arrive back on their territories until late April or early May . Migration may

be by day or night , and typically involves individuals or small groups . Vagrant birds have occurred in the Azores , China , Crete , Faroe Islands , Iceland , Japan , Oman , Saudi Arabia , Sikkim and the United Arab Emirates .

The mistle thrush is found in a wide range of habitats containing trees , including forests , plantations , hedges and town parks . In the south and east of its range , it inhabits upland coniferous woodland and the range extends above the main tree line where dwarf juniper is present . Breeding occurs at up to 600 m (2 @, @ 000 ft) in the mountains of North Africa , and occasionally much higher , to 1 @, @ 700 m (5 @, @ 600 ft) . In the highlands of Europe , its preferred altitude is from 800 ? 1 @, @ 800 m (2 @, @ 600 ? 5 @, @ 900 ft) . More open habitats , such as agricultural land , moors and grassy hills , are extensively used in winter or on migration .

There is evidence that this species has changed its natural habitat in at least parts of its range . In Germany and elsewhere in central Europe , it was found only in coniferous forest until the mid @-@ 1920s when its range rapidly expanded , first into farmland , and then to suburbs and urban parks . The reasons for this expansion are unclear . In areas of intensive farming , such as eastern England , arable land has in turn largely been abandoned in favour of built @-@ up areas with their greater variety of green habitats .

= = Behaviour = =

Mistle thrushes are found as individuals or pairs for much of the year , although families forage together in late summer , and groups may merge to form flocks of several tens of birds ; it is not uncommon for up to 50 thrushes to feed together at that time of year . They roost at night in trees or bushes , again typically as individuals or pairs , but with families roosting together in autumn .

The mistle thrush is quite terrestrial , hopping with its head held up and body erect ; when excited , it will flick its wings and tail . The flight consists of undulating bounds interspersed with glides .

= = = Breeding = = =

Mistle thrushes breed in the year subsequent to their hatching ; they are monogamous and stay as a pair throughout the year in areas where they are not migratory . Their territories are much larger than those of blackbirds or song thrushes ; although the nest territory is only about 0 @. @ 6 hectares (1 @. @ 5 acres) , around 15 ? 17 ha (37 ? 42 acres) is used for feeding . Territories are normally reoccupied in subsequent years . Territories are larger in woods than in farmland . The male will attack intruders into its breeding area , including birds of prey and corvids , and sometimes cats or humans . Courtship feeding of the female by her partner has sometimes been observed . Breeding typically commences in mid @-@ March in the south and west of Europe (late February in Britain) , but not till early May in Finland . The nest is usually built in a tree in the fork of a branch or against the trunk , although hedges , ledges on buildings and cliff faces may also be used . The nest site may be up to 20 m (66 ft) above the ground , although 2 ? 9 m (6 @. @ 6 ? 29 @. @ 5 ft) is more typical . The common chaffinch often nests close to a mistle thrush , the vigilance of the finch and the aggressive behaviour of the thrush benefiting both species . The thrush 's nest is a large cup of sticks , dry grass , roots and moss , coated on the inside with a layer of mud and lined with fine grass and leaves . The nest is built by the female , although the male may help . Nests built early in the breeding season may be destroyed by bad weather .

The clutch is typically three to five eggs (range two to six) , which are usually whitish @-@ buff or greenish @-@ blue and are spotted with red , purple or brown . The average size of the egg is 30 mm x 22 mm (1 @. @ 18 in x 0 @. @ 87 in) , and weighs 7 @. @ 8 g (0 @. @ 28 oz) , of which 6 % is shell . The eggs are incubated for 12 ? 15 days , mainly by the female . The chicks are altricial and downy , and are fed by both parents . They fledge about 14 ? 16 days after hatching . There are normally two broods , except in Siberia , where there is only one , the male feeding the fledglings from the first brood while the female sits on the second clutch . Sometimes the same nest is reused for both broods . The young are dependent on their parents for 15 ? 20 days after fledging .

In a study carried out in Britain , the survival rate for juveniles in their first year is 57 per cent , and

the adult annual survival rate is 62 per cent . Life expectancy is typically three years , but the maximum age recorded from bird ringing recoveries is 21 years and 3 months for a bird shot in Switzerland .

= = = Feeding = = =

Mistle thrushes feed mainly on invertebrates , fruit and berries . Animal prey include earthworms , insects and other arthropods , slugs and snails . Snails are sometimes smashed on a stone " anvil " , a technique also used by the song thrush . The mistle thrush has been known to kill slow worms and the young of the song thrush , blackbird and dunnock .

Plant food includes the fruits and seeds of bushes and trees , mainly holly , yew , ivy and mistletoe , but also , for example , blackberry , cherry , elder , hawthorn , olive and rose . It may eat the flowers and shoots of grasses and other plants , and will take fallen apples and plums . It forages within its breeding habitat and in open fields , sometimes sharing these feeding areas with redwings or fieldfares .

Young birds are initially mainly fed on invertebrates , often collected from low foliage or under bushes rather than in the grassland preferred by the adults . Adults will roam up to 1 km (1000 yd) from the nest on pasture or ploughed land . After fledging the young may accompany their parents until the onset of winter . Individuals or pairs will defend one or more fruit @-@ bearing trees throughout the winter , mistletoe being preferred where available , with holly as the first choice elsewhere . Although the thrush normally feeds on the ground or other trees , the defence of this resource conserves the fruit for later in the season when other food items are becoming scarce . The trees are defended against conspecifics , other thrushes and species such as the bullfinch and great spotted woodpecker . In years when there is an abundance of winter fruit , this strategy may be abandoned , with the mistle thrushes foraging in flocks . Conversely , in hard winters , the defender may be overwhelmed by large flocks of fieldfares , redwings or Bohemian waxwings .

As its name implies , the mistle thrush is important in propagating the mistletoe , an aerial parasite , which needs its seeds to be deposited on the branches of suitable trees . The highly nutritious fruits are favoured by the thrush , which digests the flesh leaving the sticky seeds to be excreted , possibly in a suitable location for germination .

= = Predators and parasites = =

The mistle thrush is hunted by birds of prey including the boreal owl , short @-@ eared owl , tawny owl , Ural owl , Eurasian eagle @-@ owl , golden eagle , kestrel , common buzzard , red kite , northern goshawk , peregrine falcon , and sparrowhawk . The eggs and chicks may be targeted by cats and corvids , although the adults are fearless in defence of their nests , occasionally even attacking humans . The mistle thrush is not normally a host of the common cuckoo , a brood parasite .

External parasites of the mistle thrush include the hen flea , the moorhen flea , the castor bean tick and the brightly coloured harvest mite . Internally , the thrush may be hosting tapeworms , nematodes , and *Syngamus merulae* a relative of the gapeworm . Blood parasites include *Trypanosoma* and *Plasmodium* species .

= = Status = =

The mistle thrush has an extensive distribution in Europe and western Asia , and its European breeding population is estimated at 9 ? 22 @.@ 2 million birds . When Asian breeders are added , this gives a global total of 12 @.@ 2 ? 44 @.@ 4 million . The species was formerly more restricted in range , and rarely bred even in northern England in the 1700s . It expanded rapidly into lowland and coastal areas of Europe during the 18th century and the first half of the 19th century , colonising areas where it was formerly rare or absent , such as Ireland (where it first bred in 1807) , Scotland and the Netherlands . The range also increased in Denmark , Norway , Hungary and Austria .

Although the population now appears to be declining , the decrease is not rapid or large enough to trigger conservation vulnerability criteria . Given its high numbers and very large range , this thrush is therefore classified by the International Union for Conservation of Nature as being of least concern . The perceived decline may be due to the loss of invertebrate @-@ rich pastures and mixed farms through conversion to arable agriculture or more intensively managed grassland . Adult survival , clutch size and fledging success are all lower in arable landscapes than in areas with extensive pasture . In Finland , the loss of ancient forests is thought to have led to a local decline .

= = In culture = =

Desiderius Erasmus 's early sixteenth @-@ century collection of Latin proverbs included *Turdus malum sibi ipse cacat* , (the thrush himself excretes his own trouble) , which refers to the use of the sticky berries favoured by this species to make birdlime for trapping birds . The thrush is literally spreading the seeds of his own destruction .

Giovanni da Udine painted in Raphael 's workshop in the 16th century . His Mistle Thrush and Alpine Chough was a sketch for his *Bird with Garland and Fruit* , and this in turn was the basis for a Raphael fresco in the Apostolic Palace .

The early Renaissance poem " *The Harmony of Birds* " had the thrusshe (mistle thrush) sing " *sanctus , sanctus* " , and distinguished it from the song thrush , the mauys or throstle . The song is also described in Thomas Hardy 's " *Darkling Thrush* " and Edward Thomas 's " *The Thrush* " . The loud call of this common and conspicuous bird also led to many old or local names , including " *screech* " , " *shrite* " and " *gawthrush* " . Other names , including " *stormcock* " referred to its willingness to sing in wind and rain . " *Holm thrush* " , " *hollin cock* " and " *holm cock* " are based on obsolete names for the holly tree , which may be defended by the thrush in winter for its berries .