

= Eurasian blackcap =

The Eurasian blackcap (*Sylvia atricapilla*) usually known simply as the blackcap , is a common and widespread typical warbler . It has mainly olive @-@ grey upperparts and pale grey underparts , and differences between the five subspecies are small . Both sexes have a neat coloured cap to the head , black in the male and reddish @-@ brown in the female . The male 's typical song is a rich musical warbling , often ending in a loud high @-@ pitched crescendo , but a simpler song is given in some isolated areas , such as valleys in the Alps . The blackcap 's closest relative is the garden warbler , which looks quite different but has a similar song .

The blackcap breeds in much of Europe , western Asia and northwestern Africa , and its preferred habitat is mature deciduous woodland . The male holds a territory when breeding , which is defended against garden warblers as well as other blackcaps . The nest is a neat cup , built low in brambles or scrub , and the clutch is typically 4 ? 6 mainly buff eggs , which hatch in about 11 days . The chicks fledge in 11 ? 12 days , but are cared for by both adults for some time after leaving the nest . The blackcap is a partial migrant ; birds from the colder areas of its range winter in scrub or trees in northwestern Europe , around the Mediterranean and in tropical Africa . Some German birds have adapted to spending the winter in gardens in Great Britain and Ireland . Insects are the main food in the breeding season , but , for the rest of the year , blackcaps survive primarily on small fruit . Garden birds also eat bread , fat and peanuts in winter .

Despite extensive hunting in Mediterranean countries and the natural hazards of predation and disease , the blackcap has been extending its range for several decades , and is classified by the International Union for Conservation of Nature as Least Concern . Its rich and varied song has led to it being described as the " mock nightingale " and it has featured in literature , films and music . In Messiaen 's opera Saint François d 'Assise , the saint is represented by themes based on the blackcap 's song .

= = Taxonomy = =

The genus *Sylvia* , the typical warblers , forms part of a large family of Old World warblers , the Sylviidae . The blackcap and its nearest relative , the garden warbler , are an ancient species pair which diverged very early from the rest of the genus at between 12 and 16 million years ago . In the course of time , these two species have become sufficiently distinctive that they have been placed in separate subgenera , with the blackcap in subgenus *Sylvia* and the garden warbler in *Epilais* . These sister species have a breeding range which extends farther northeast than all other *Sylvia* species except the lesser whitethroat and common whitethroat . The nearest relatives of the garden warbler outside the sister group are believed to be the African hill babbler and Dohrn 's thrush @-@ babbler , both of which should probably be placed in *Sylvia* rather than their current genera , *Pseudalcippe* and *Horizorhinus* respectively .

The blackcap was first described by Linnaeus in his *Systema Naturae* of 1758 as *Motacilla atricapilla* . The current genus name is from Modern Latin *silvia* , a woodland sprite , related to *silva* , a wood . The species name , like the English name , refers to the male 's black cap . *Atricapilla* is from the Latin *ater* , black , and *capillus* , hair (of the head) .

Fossils and subfossils of the blackcap have been found in a number of European countries ; the oldest , dated to 1 @. @ 2 ? 1 @. @ 0 million years ago , are from the Early Pleistocene of Bulgaria . Fossils from France show that the *Sylvia* genus dates back at least 20 million years .

= = = Subspecies = = =

The differences between subspecies are small , making subspecific boundaries hard to define , and the exact distribution of *S. a. heineken* is unclear , since birds from northwest Africa may be of this form . About 2 % of male blackcaps on Madeira and the Azores are melanistic , with black plumage on the whole head and upper breast . Melanistic females are rarer , and are characterised by grey @-@ brown underparts . This dark morph has also been recorded from the Canary Islands , but not

from Cape Verde . The melanistic birds were formerly sometimes considered to be a distinct subspecies , *S. a. obscura* .

= = Description = =

The blackcap is a mainly grey warbler with distinct male and female plumages . The nominate subspecies is about 13 cm (5 @. @ 1 in) long with a 7 ? 8 cm (2 @. @ 8 ? 3 @. @ 1 in) wing length . The weight is typically 16 ? 25 g (0 @. @ 56 ? 0 @. @ 88 oz) , but can be up to 31 g (1 @. @ 1 oz) for birds preparing to migrate . The adult male has olive @-@ grey upperparts , other than a paler grey nape and a neat black cap on the head . The underparts are light grey , becoming silvery white on the chin , throat and upper breast . The tail is dark grey , with an olive tint to the outer edge of each feather . The bill and long legs are grey , and the iris is reddish @-@ brown . The female resembles the male , but has a reddish @-@ brown cap and a slightly browner tone to the grey of the upperparts . Juveniles are similar to the female , but their upperparts have a slight rufous tinge , and the breast and flanks have a more olive tone ; young males have a darker brown cap than their female counterparts . This species is unmistakable ; other dark @-@ headed *Sylvia* species , such as Sardinian and Orphean warblers have extensive black on the head instead of a small cap . They are also larger and have white edges on the tail .

Blackcaps have a complete moult in their breeding areas in August and September prior to migration . Some birds , typically those migrating the greatest distances , have a further partial moult between December and March . Juveniles replace their loosely structured body feathers with adult plumage , starting earlier , but taking longer to complete , than the adults . Blackcaps breeding in the north of the range have an earlier and shorter post @-@ juvenile moult than those further south , and cross @-@ breeding of captive birds shows that the timing is genetically controlled .

= = = Voice = = =

The male 's song is a rich musical warbling , often ending in a loud high @-@ pitched crescendo , which is given in bursts of up to 30 seconds . The song is repeated for about two @-@ and @-@ a @-@ half minutes , with a short pause before each repetition . In some geographically isolated areas , such as islands , peninsulas and valleys in the Alps , a simplified fluting song occurs , named the Leiern (drawling) song by the German ornithologists who first described it . The song 's introduction is like that of other blackcaps , but the final warbling part is a simple alternation between two notes , as in a great tit 's call but more fluting . The main song is confusable with that of the garden warbler , but it is slightly higher pitched than in that species , more broken into discrete song segments , and less mellow . Both species have a quiet subsong , a muted version of the full song , which is even more difficult to separate . The blackcap occasionally mimics the song of other birds , the most frequently copied including the garden warbler and the common nightingale . The main call is a hard tac @-@ tac , like stones knocking together , and other vocalisations include a squeaking sweet alarm , and a low @-@ pitched trill similar to that of a garden warbler .

Male blackcaps will sometimes sing even when incubating , especially with the second brood . This appears to be intended to maintain the bond with the female . Wintering birds in Africa are quiet initially , but start singing in January or February prior to their return north .

= = Distribution and habitat = =

= = = Distribution = = =

The continental breeding range of the blackcap lies between the 14 ? 30 ° July isotherms , and is occupied by the nominate subspecies , the other forms being restricted to islands or fringe areas in the Caucasus and eastern Iberia . Birds on the Mediterranean and Atlantic islands and in the milder west and south of the main Eurasian distribution often winter within the nesting range , but

populations elsewhere are migratory . The blackcap is a leap @-@ frog migrant ; birds from the north of the breeding range travel furthest south , whereas Mediterranean breeders move much shorter distances . The wintering areas overlap with the breeding range , but also include extensive areas in West Africa , East Africa south to Lake Malawi , and further north in Ethiopia , South Sudan and Eritrea . The large majority of birds wintering in eastern Africa are of the southwest Asian race , *S. a. dammholzi* .

There is a migratory divide in Europe at longitude 10 ? 11 ° E. Birds to the west of this line head southwest towards Iberia or West Africa , whereas populations to the east migrate to the eastern Mediterranean and on to East Africa . Cross @-@ breeding in captivity of birds from the resident population on the Canary Islands with migratory blackcaps from Germany showed the urge to migrate is genetically controlled , the offspring showing intermediate behaviour in terms of restlessness at migration time . Similar experiments using birds from southern Germany and eastern Austria , on opposite sides of the migratory divide , demonstrated that the direction of migration is also genetically determined . Climate change appears to be affecting the migration pattern of the garden warbler and blackcap . Both are arriving in Europe earlier than previously , and blackcaps and juvenile (but not adult) garden warblers are departing nearly two weeks later than in the 1980s . Birds of both species are longer @-@ winged and lighter than in the past , suggesting a longer migration as the breeding range expands northwards .

In recent decades , substantial numbers of central European birds have taken to wintering in gardens in Great Britain , and , to a lesser extent , Ireland , where the blackcap was formerly just a summer visitor . Although the British climate is sub @-@ optimal , compensatory factors include the ready availability of food , (particularly from bird tables) , a shorter migration distance , and the avoidance of the Alps and the Sahara Desert . These wintering birds come from Germany , and isotope analysis (which enables the wintering location to be determined) showed that the German birds wintering in Britain tend to mate only among themselves , and do not usually interbreed with those wintering in the Mediterranean or western Africa . This is because the British migrants arrive back on the breeding grounds earlier than blackcaps wintering around the Mediterranean , and form pairs before the southern birds arrive . Mixed pairings are also selected against because the hybrid young would migrate in an intermediate direction , which would take them into the Bay of Biscay .

= = = Habitat = = =

The blackcap 's main breeding habitat is mature deciduous woodland , with good scrub cover below the trees . Other habitats , such as parks , large gardens and overgrown hedges , are used as long as they meet the essential requirements of tall trees for songposts and an established understory . Where other *Sylvia* warblers also breed , blackcaps tend to use taller trees than their relatives , preferably those with a good canopy , such as pedunculate oak . In prime habitat , breeding densities reach 100 ? 200 pairs per square kilometre (250 ? 500 pairs per square mile) in northern Europe , and 500 ? 900 pairs per square kilometre (1 @,@ 250 ? 2 @,@ 250 pairs per square mile) in Italy . Densities are much lower in poorer habitats such as conifer forests . Breeding occurs in Europe at altitudes up to 2 @,@ 200 m (7 @,@ 200 ft) .

The preferred winter habitat around the Mediterranean is scrub and olive orchards , where densities approach the levels found in the best breeding areas . The British wintering population is atypical , with 95 % found in gardens , mostly in towns at altitudes below 100 m (330 ft) . In Africa , habitats include cultivated land , acacia scrub , mangroves and forest , and these warblers are found at altitudes up to 3 @,@ 600 m (11 @,@ 800 ft) in the east of the continent . Wintering birds wander in search of good fruit supplies , but often stay in good feeding areas , and return in subsequent winters . Migrants may occur in a wide variety of habitats , such as reed bed and fen , but show a preference for shrubland .

= = Behaviour = =

== = Territory = = =

When male blackcaps return to their breeding areas , they establish a territory . Adults that have previously bred return to the site they have used in previous summers , whereas inexperienced birds either wander until they find a suitable area , or establish a very large initial territory which contracts under pressure from neighbours . Territorial boundaries are established initially by loud singing , performed while the male displays with his crown raised , tail fanned and slow wingbeats . This display is followed , if necessary , by a chase , often leading to a fight . The typical territory size in a French study was 1 @. @ 12 hectares (2 @. @ 8 acres) , but in insect @- @ rich tall maquis in Gibraltar , the average was only 0 @. @ 16 hectares (0 @. @ 40 acres) . Females feed within a home range which may overlap other blackcap territories , and covers up to six times the area of the defended zone .

Sylvia warblers are unusual in that they vigorously defend their territories against other members of their genus as well as conspecifics . Blackcaps and garden warblers use identical habits in the same wood , yet aggressive interactions mean that their territories never overlap . Similar songs are a feature of the Sylvia warblers as a group , and it has been suggested that this promotes interspecific competition and helps to segregate territories between related species . It appears more likely from later studies that segregation of sympatric species , other than the blackcap and garden warbler , is due to subtle habitat preferences rather than interspecies aggression .

== = Breeding = = =

Blackcaps first breed when they are one year old , and are mainly monogamous , although both sexes may sometimes deviate from this . A male attracts a female to his territory through song and a display involving raising the black crown feathers , fluffing the tail , slow wingbeats , and a short flapping flight . He also builds one or more simple nests (cock nests) , usually near his songpost . The final nest , which may be one of the cock nests or built from scratch , is a neat cup of roots , stems and grasses lined with fine material such as hair . The nest is typically 5 @. @ 5 cm (2 @. @ 2 in) deep and 10 cm (3 @. @ 9 in) across , and is built in the cover of bramble , scrubs or trees . It is constructed mainly by the female , and may be up to 4 @. @ 5 m (15 ft) above the ground , although lower than 1 m (3 @. @ 3 ft) is more typical . The clutch is typically 4 ? 6 eggs (range 2 ? 7) , which are usually buff with grey and brown blotches and a few dark brown spots . The average size of the egg is 19 @. @ 7 mm x 14 @. @ 7 mm (0 @. @ 78 in x 0 @. @ 58 in) .

The eggs are incubated for an average of 11 days (range 10 ? 16) . Both adults incubate , although only the female stays on the nest at night . The chicks are altricial , hatching naked and with closed eyes , and are fed by both parents . They fledge about 11 ? 12 days after hatching , leaving the nest shortly before they are able to fly . They are assisted with feeding for a further two or three weeks . If the nest is threatened , the non @- @ incubating bird gives an alarm call so that the sitting parent and chicks stay still and quiet . A male blackcap may mob a potential predator , or try to lure it away with disjointed runs and flaps on the ground . The blackcap normally raises just one brood , but second nestings are sometimes recorded , particularly in the milder climate of the Mediterranean and the Atlantic islands ; triple brooding has been observed once , the female laying a total of 23 eggs in the season .

Of eggs laid , 65 ? 93 % hatch successfully , and 75 ? 92 % of the chicks go on to fledge . The productivity (young fledged per nest) varies with location , level of predation and quality of habitat , but the national figure for the UK was 2 @. @ 5 . The adult annual survival rate is 43 % (males 46 % , females 29 %) , and 36 % of juveniles live through their first year . The typical life expectancy is two years , but the record is 13 years and 10 months for a bird in the Czech Republic .

== = Feeding = = =

The blackcap feeds mainly on insects during the breeding season , then switches to fruit in late summer , the change being triggered by an internal biological rhythm . When migrants arrive on their

territories they initially take berries , pollen and nectar if there are insufficient insects available , then soon switch to their preferred diet . They mainly pick prey off foliage and twigs , but may occasionally hover , flycatch or feed on the ground . Blackcaps eat a wide range of invertebrate prey , although aphids are particularly important early in the season , and flies , beetles and caterpillars are also taken in large numbers . Small snails are swallowed whole , since the shell is a source of calcium for the bird 's eggs . Chicks are mainly fed soft @-@ bodied insects , fruit only being provided if invertebrates are scarce .

In July , the diet switches increasingly to fruit . The protein needed for egg @-@ laying and for the chicks to grow is replaced by fruit sugar which helps the birds to fatten for migration . Aphids are still taken while they are available , since they often contain sugars from the plant sap on which they feed . Blackcaps eat a wide range of small fruit , and squeeze out any seeds on a branch before consuming the pulp . This technique makes them an important propagator of mistletoe . The mistle thrush , which also favours that plant , is less beneficial since it tends to crush the seeds . Although any suitable fruit may be eaten , some have seasonal or local importance ; elder makes up a large proportion of the diet of northern birds preparing for migration , and energy @-@ rich olives and lentisc are favoured by blackcaps wintering in the Mediterranean .

The German birds wintering in British gardens rely on provided food , and the major items are bread and fat , each making up around 20 % of the diet ; one bird survived the whole winter eating only Christmas cake . Fruit is also eaten , notably cotoneaster (41 % of the fruit consumed) , ivy and honeysuckle , and apple if available . Some birds have learned to take peanuts from feeders . Blackcaps defend good winter food sources in the wild , and at garden feeding stations they repel competitors as large as starlings and blackbirds . Birds occasionally become tame enough to feed from the hand .

= = Predators and parasites = =

Blackcaps are caught by Eurasian sparrowhawks in the breeding range , and by Eleonora 's falcons on migration . Eurasian jays and Eurasian magpies take eggs and young , as do mammals such as stoats , weasels and squirrels . Domestic cats are the most important predator , possibly killing up to 10 % of blackcaps . Blackcaps are occasionally hosts of the common cuckoo , a brood parasite . The level of parasitism is low because the cuckoo 's eggs are often rejected . Blackcaps have evolved adaptations which make it difficult for the parasitic species to succeed , despite the cuckoo 's tendency to lay eggs which resemble those of their host . Blackcaps are good at spotting alien eggs , and their own eggs are very alike within a clutch , making it easier to spot the intruder . There is , however , considerable variation between different clutches , making it harder for the cuckoo to convincingly mimic a blackcap egg . The open habitat and cup nest of the warbler make it a potential target for the cuckoo ; it may have experienced much higher levels of parasitism in the past , and countermeasures would have spread rapidly once they evolved .

The only blood parasites found in a study of blackcaps trapped on migration were protozoans from the genera *Haemoproteus* and *Plasmodium* . Of those affected , 45 @.@ 5 % were males and 22 @.@ 7 % were females , but the number of parasites was small , and the ability to store fat for the migration flight was unimpaired . Seventeen strains of *H. parabelopolskyi* are found only in the blackcap , and form a monophyletic group ; three further members of that group are found only in the garden warbler , and another three occur in the African hill babbler , supporting the shared ancestry of the three bird species . The protozoan *Isospora ashmoonensis* was first identified in a blackcap in Egypt . Blackcaps may carry parasitic worms that sometimes kill their hosts . External parasites include chewing lice and feather mites . The latter do little damage , although heavy infestations cause individual tail feathers to develop asymmetrically .

= = In culture = =

Aristotle , in his *History of Animals* , considered that the garden warbler eventually metamorphosed into a blackcap . The blackcap 's song has led to it being described as the " mock nightingale " or "

country nightingale " , and John Clare , in " The March Nightingale " describes the listener as believing that the rarer species has arrived prematurely . " He stops his own and thinks the nightingale / Hath of her monthly reckoning counted wrong " . The song is also the topic of Italian poet Giovanni Pascoli 's " La Capinera " [The Blackcap] .

Giovanni Verga 's 1871 novel *Storia di una capinera* , according to its author , was inspired by a story of a blackcap trapped and caged by children . The bird , silent and pining for its lost freedom , eventually dies . In the book , a nun evacuated from her convent by cholera falls in love with a family friend , only to have to return to her confinement when the disease wanes . The novel was adapted as films of the same name in 1917 , 1943 and 1993 . The last version was directed by Franco Zeffirelli , and its English @-@ language version was retitled as *Sparrow* . In *Saint François d 'Assise* , an opera by Messiaen , the orchestration is based on bird song . St Francis himself is represented by the blackcap .

Folk names for the blackcap often refer to its most obvious plumage feature (black @-@ headed peggy , King Harry black cap and coal hoodie) or to its song , as in the " nightingale " names above . Other old names are based on its choice of nesting material (Jack Straw , hay bird , hay chat and hay Jack) . There is a tradition of the Royal Navy 's Fleet Air Arm bases being named for birds . A former base near Stretton in Cheshire was called HMS Blackcap .

= = Status = =

The blackcap has a very large range , and its population in Europe is estimated at 25 ? 49 million breeding pairs . Allowing for birds breeding in Africa and Asia , the total population is between 80 ? 196 million individuals . It is therefore classified by the International Union for Conservation of Nature as being of Least Concern .

Blackcaps and other small birds are illegally trapped in large numbers in Mediterranean countries , particularly in Cyprus , where they are considered a delicacy . Despite hunting and natural hazards , the European population of the blackcap has been rising for several decades as the range extends northwards , for example to Scotland and Denmark . There are occasional nesting records from outside the main range , such as in northern Israel and the Faroes , and wandering birds may appear further afield in Iceland or on the islands of Arctic Russia . In the Baltic , the spread of the blackcap appears to have been helped by the availability of territories formerly occupied by the declining barred warbler .