

= Eurasian nuthatch =

The Eurasian nuthatch or wood nuthatch (*Sitta europaea*) is a small passerine bird found throughout temperate Asia and in Europe , where its name is the nuthatch . Like other nuthatches , it is a short @-@ tailed bird with a long bill , blue @-@ grey upperparts and a black eye @-@ stripe . It is a vocal bird with a repeated loud dwip call . There are more than 20 subspecies in three main groups ; birds in the west of the range have orange @-@ buff underparts and a white throat , those in Russia have whitish underparts , and those in the Far East have a similar appearance to European birds , but lack the white throat .

The preferred habitat is mature deciduous or mixed woodland with large , old trees , preferably oak . Pairs hold permanent territories , and nest in tree holes , usually old woodpecker nests , but sometimes natural cavities . If the entrance to the hole is too large , the female plasters it with mud to reduce its size , and often coats the inside of the cavity too . The 6 ? 9 red @-@ speckled white eggs are laid on a deep base of pine or other wood chips .

The Eurasian nuthatch eats mainly insects , particularly caterpillars and beetles , although in autumn and winter its diet is supplemented with nuts and seeds . The young are fed mainly on insects , with some seeds , food items mainly being found on tree trunks and large branches . The nuthatch can forage when descending trees head first , as well as when climbing . It readily visits bird tables , eating fatty man @-@ made food items as well as seeds . It is an inveterate hoarder , storing food year @-@ round . Its main natural predator is the Eurasian sparrowhawk .

Fragmentation of woodland can lead to local losses of breeding birds , but the species ' range is still expanding . It has a large population and huge breeding area , and is therefore classified by the International Union for Conservation of Nature (IUCN) as being of least concern .

= = Taxonomy = =

The nuthatches are a family of similar @-@ looking birds with short tails and wings , compact bodies and longish pointed bills . They have grey or bluish upperparts , a black eyestripe and strong feet . All are in the single genus *Sitta* . Within the genus , the Eurasian nuthatch forms a superspecies with the chestnut @-@ vented , Indian , chestnut @-@ bellied and Kashmir nuthatches and has in the past been considered conspecific with all of these .

The Eurasian nuthatch was described by Linnaeus in his *Systema naturae* in 1758 under its current scientific name . *Sitta* is derived from the Ancient Greek name for this bird , ????? , *sitt?* , and the species name , *europaea* , is Latin for " European " . " Nuthatch " , first recorded in 1350 , is derived from " nut " and a word probably related to " hack " , since these birds hack at nuts they have wedged into crevices .

The fossil record for nuthatches is sparse , and in Europe is limited to the extinct *Sitta senogalliensis* from the Lower Miocene in Italy and somewhat later material from France ; the family appears to be of relatively recent origin .

= = Subspecies = =

There are more than 20 subspecies , but the precise number is disputed . These taxa can be divided into three main groups ; these may have been geographically isolated from each other until relatively recently . Birds of intermediate appearance occur where the group ranges overlap .

The large , white @-@ breasted *S. e. arctica* of north east Siberia is distinctive in appearance and genetically , and may be another subspecies group or even a separate species .

= = Description = =

The adult male of the nominate subspecies , *S. e. europaea* is 14 cm (5 @.@ 5 in) long with a 22 @.@ 5 ? 27 cm (8 @.@ 9 ? 10 @.@ 6 in) wingspan . It weighs 17 ? 28 g (0 @.@ 6 ? 1 oz) . It has blue @-@ grey upperparts , a black eye @-@ stripe and whitish throat and underparts . The

flanks and lower belly are orange @-@ red , mottled with white on the undertail . The stout bill is dark grey with a paler area on the base of the lower mandible , the iris is dark brown and the legs and feet are pale brown or greyish . Most other members of the *S. e. europaea* group differ only in detail from the nominate form , often with respect to the hue of the underparts , but *S. e. arctica* is quite distinctive . It is large , pale , has a white forehead and a reduced eye @-@ stripe , and it has more white in the tail and wings than any other subspecies . Nuthatches move on trees with short leaps , and do not use their tails for support . In flight , they have a characteristic appearance , with a pointed head , round wings and a short , square tail . Their flight is fast , with wings closed between beats , and is usually of short duration .

S. e. caesia , the most widespread of the western subspecies , has orange @-@ buff underparts except for a white throat and cheeks . The other western forms mainly differ in the exact shade of the underparts , although some southeastern forms also show a white forehead and supercilium . *S. e. sinensis* and *S. e. formosana* , of China and Taiwan respectively , have buff underparts like the western races , but have buff , instead of white , throats .

The female is similar in appearance to the male , but may be identified by her slightly paler upperparts , a browner eyestripe and a more washed @-@ out tone to the flanks and lower belly . In the eastern form , *S. e. asiatica* , some males have buff underparts like the female , and birds with this appearance are difficult to sex in the field . Young birds resemble the female , although their plumage is duller and they have paler legs . Individuals can be reliably sexed as female from about 12 days old by their paler and buffer flanks , or , in some white @-@ breasted subspecies , by the creamier hue of their underparts .

Adults have a complete moult after breeding which takes about 80 days , starting from late May onwards and finishing by late September . The moult period for Siberian birds is more compressed , running from June to mid @-@ September . Fledged juveniles moult some of their wing coverts when they are about eight weeks old .

In much of its range , Eurasian is the only nuthatch present . In southeast Europe and southwest Asia , the western and eastern rock nuthatches are larger and paler than the Eurasian species . They also lack white spots in the tail and are usually found in a different , stony habitat , and Krüper 's nuthatch is small and has a black cap and reddish breast patch . In southwest China , the chestnut @-@ vented nuthatch is very similar to the European bird , but is darker above , has less white on the face and has greyer underparts .

= = = Voice = = =

The Eurasian nuthatch calls frequently , usually with a loud , sharp dwip normally repeated twice , sometimes more often if excited . It has a shrill sirrrr or tsi @-@ si @-@ si alarm call , and a thin tsit pre @-@ flight call . The song is a slow whistled pee @-@ pee @-@ pee with many variants , including a faster version , and may be intermingled with the call .

The song of the distinctive *S. e. arctica* is said to be noticeably different from that of its relatives , which would help to establish whether it is a full species , but there has been insufficient research into its vocalizations .

= = Distribution and habitat = =

The Eurasian nuthatch 's breeding range extends across temperate Eurasia from Great Britain (but not Ireland) to Japan . It is found between the 16 ? 20 ° C (61 ? 68 ° F) July isotherms , north to about latitude 64 ° N in western Russia and 69 ° N in Siberia . It breeds south to the Mediterranean in Europe , although it is absent from the islands , other than Sicily , and in most of Russia the southern boundary is around 54 ? 55 ° N. In the east , the range includes most of China and Taiwan and much of Korea . It has occurred as a vagrant in Lebanon and the Channel Islands , and the nominate race has been recorded a few times in Finland where *S. e. asiatica* is the normal form .

Most populations are sedentary , apart from some post @-@ breeding dispersal of young birds , and there is a reluctance to cross even short stretches of open water . Northern and eastern

breeders are dependent on the cones of the Siberian stone pine , and if the crop fails many birds of the *S. e. asiatica* subspecies may move west into northern Sweden and Finland in autumn , sometimes staying to breed . Siberian *S. e. arctica* may make more limited movements south and east in winter , and *S. e. amurensis* , from southeast Russia , is regular in winter in Korea .

The preferred habitat is mature woodland with large , old trees , which provide extensive growth for foraging and nesting holes . In Europe , deciduous or mixed forest is favoured , particularly when containing oak . Parks , old orchards and other wooded habitats may be occupied as long as they have at least a 1 ha (2 @. @ 5 acres) block of suitable trees . Particularly in mountains , old spruce and pine forests are used , and pine is also favoured in Taiwan . In most of Russia , conifers are used for nesting , but population densities are relatively low . Moroccan birds nest in oak , Atlas cedar and fir . Unusual habitats include dwarf juniper in Mongolia and rocky terrain in a limited part of southern Siberia .

The Eurasian nuthatch is primarily a lowland bird in the north of its range , but reaches the tree @-@ line in Switzerland , at 1 @, @ 200 m (3 @, @ 900 ft) or higher , and breeds occasionally at 1 @, @ 800 ? 2 @, @ 100 m (5 @, @ 900 ? 6 @, @ 900 ft) in Austria . It breeds at similar levels in the mountains of Turkey , the Middle East and Central Asia . It is mainly a mountain bird in southern Japan , 760 ? 2 @, @ 100 m (2 @, @ 490 ? 6 @, @ 890 ft) , and Taiwan , 800 ? 3 @, @ 300 m (2 @, @ 600 ? 10 @, @ 800 ft) , but in southern China , the chestnut @-@ vented nuthatch is the highland species , with the Eurasian species at lower levels .

= = Behaviour = =

= = = Breeding = = =

Nuthatches are monogamous , and a pair occupies a breeding territory in which it spends the winter as well . Territory sizes range from 2 ? 10 ha (5 ? 25 acres) in Europe to an average of 30 @. @ 2 ha (75 acres) in the sub @-@ optimal conifer forests of Siberia . The male sings to defend his territory and attract a mate . Both sexes have a courtship display with a floating , quivering flight , and the male will also make circular flights with a spread tail and raised head . He will also feed the female while courting her . Despite the lifelong pairing , genetic research in Germany showed that at least 10 % of the young in the study area were fathered by another male , usually from an adjacent territory .

The nest is in a tree cavity , usually an old woodpecker hole , but sometimes of natural origin . Occasionally the female will enlarge an existing hole in rotten wood . The nest site is typically 2 ? 20 m (7 ? 66 ft) above the ground and has a deep base of pine bark or chips of other wood , rarely supplemented with dry plant material . If the entrance to the hole is too large , it is plastered with mud , clay and sometimes dung to make it smaller . A small entrance and large interior , together with the use of a deep layer of wood chips in which to bury the eggs and small young when the adults leave the nest , may be adaptations to reduce the chance of predation . Nests with small entrance holes are most successful . Locally , a small entrance may make it less likely that the nest will be taken over by common starlings . The female undertakes most of the work , and often plasters the inside of the cavity too , taking up to four weeks to complete the construction . A nest is often re @-@ used in subsequent years .

The clutch is usually 6 ? 9 red @-@ speckled white eggs , although up to 13 eggs are sometimes laid . They average 19 @. @ 5 mm x 14 @. @ 4 mm (0 @. @ 77 in x 0 @. @ 57 in) and weigh 2 @. @ 3 g (0 @. @ 081 oz) of which 6 % is shell . The female incubates the eggs for 13 ? 18 days to hatching , and broods the altricial downy chicks until they fledge 20 ? 26 days later . Both adults feed the chicks in the nest and continue after they fledge until they become independent in about 8 ? 14 days . Normally only one brood is raised each year . When nest boxes are used , the clutch size and number of fledglings are greater in larger boxes . For reasons that are unclear , there is no link between cavity size and nesting outcomes for natural holes .

The sedentary nature of this species means that juveniles can only acquire a territory by finding a

vacant area or replacing a dead adult . In Europe , young birds almost always move to unoccupied habitat , but in the larger territories of Siberia most live within the breeding range of an adult pair .

The adult annual survival rate across most of the range is around 51 % , and a small Belgian study found a 25 % local survival rate for juveniles . The typical lifespan is two years and the maximum known age for a wild bird is 12 years 11 months in the UK . There is also a Swiss longevity record of a 10 years 6 months .

= = = Feeding = = =

The Eurasian nuthatch eats mainly insects , particularly caterpillar and beetles . In autumn and winter , the diet is supplemented with nuts and seeds , hazel nuts and beech mast being preferred . The young are fed mainly on the insects favoured by their parents , with some seeds . Food items are found mainly on tree trunks and large branches , but smaller branches may also be investigated , and food may be taken from the ground , especially outside the breeding season . Nuthatches can forage when descending trees head first , as well as when climbing . Some prey is caught in flight , and a nuthatch will remove bark or rotten wood to reach insects , although it cannot chisel into healthy wood like a woodpecker . A pair may temporarily join a mixed @-@ species foraging flock as it passes near their territory . The Eurasian nuthatch readily visits bird tables and bird feeders in winter , eating human @-@ made food items such as fat , cheese , butter and bread . It has even been recorded as taking slaughterhouse offal . Sizeable hard food items like nuts or large insects are wedged into crevices in tree bark and smashed with the strong bill .

Plant food is stored year @-@ round , but mainly in autumn . Individual seeds are hidden in cracks in bark , occasionally in walls or in the ground . The food item is usually concealed with lichen , moss or small pieces of bark . The cached food is retrieved in cold weather . Siberian birds store the seeds of the Siberian stone pine , sometimes hoarding enough to last a whole year . Cached food may sometimes include non @-@ plant material such as pieces of bread , caterpillars and grubs , the larvae being incapacitated by battering . Hoarding is a long @-@ term strategy , stored food items only being consumed when fresh food is hard to find , sometimes up to three months after caching . Birds with good stored food supplies are fitter than those with more limited resources . Beech mast crops vary widely from year to year . Where beech mast is an important part of the diet , adult survival rates are largely unaffected in years with a poor mast crop , but the number of juvenile birds falls in the autumn as they are lost through starvation or emigration . In areas where common hazel is the prevalent tree species , there is a similar pattern of adult survival and loss of juvenile birds in years with poor nut production .

= = Predators and parasites = =

Across most of its European range , the most important predator of the Eurasian nuthatch is the sparrowhawk . Other species known to prey on this nuthatch include the northern goshawk , hobby , tawny owl , pygmy owl and least weasel . A Swedish study showed that 6 @. 2 % of the nuthatch nests in their study area were raided by predators . The perpetrators were not identified , but the main single predator of tit nests in the same study was the great spotted woodpecker .

Common starlings will take over Eurasian nuthatch nest holes , reducing their breeding success . This is most likely to occur if the nest is high in a tree and there is a good local breeding density of the nuthatch . Introduced ring @-@ necked parakeets may also compete with Eurasian nuthatches for nesting holes . The parakeets tend to occur in fragmented urban woodlands , while nuthatches prefer large old oak woodlands , which reduces the level of competition . Ornithologists conducting a 2010 Belgian study suggested that the problem was not so severe as to warrant culling of the parakeets .

Mites of the genus *Ptilonyssus* , such as *P. sittae* , have been found in the Eurasian nuthatch 's nasal cavities . Intestinal worms include the nematodes *Tridentocapillaria parusi* and *Pterothominx longifilla* . Small studies in Slovakia and Spain found no blood parasites , but a larger Spanish survey found some evidence of *Plasmodium* infection .

= = Status = =

The European population of the Eurasian nuthatch has been estimated as 22 @. @ 5 ? 57 million birds , suggesting a global total of 45 @. @ 9 ? 228 million individuals . China , Taiwan , Korea , Japan and Russia each have between 10 @, @ 000 and 100 @, @ 000 breeding pairs . The known breeding area is about 23 @. @ 3 million km² (9 million sq mi) , which is a large proportion of the potential suitable habitat , and the population appears to be stable . The large numbers and huge breeding range mean that this species is classified by the International Union for Conservation of Nature as being of least concern .

The Eurasian nuthatch is common throughout much of its range , although densities are lower in the far north and in coniferous forests . Annual numbers in Siberia fluctuate depending on the availability of pine cones from year to year . In recent decades the nuthatch has colonised Scotland and the Netherlands , and expanded its range in Wales , northern England , Norway and the High Atlas mountain range in North Africa . *S. e. asiatica* breeds intermittently in Finland and northern Sweden following irruptions . Because large trees are essential , felling or fragmentation of old woodland can lead to local declines or losses .