

= Corn crane =

The corn crane , corncrane or landrail (*Crex crex*) is a bird in the rail family . It breeds in Europe and Asia as far east as western China , and migrates to Africa for the northern hemisphere 's winter . It is a medium @-@ sized crane with buff- or grey @-@ streaked brownish @-@ black upperparts , chestnut markings on the wings , and blue @-@ grey underparts with rust @-@ coloured and white bars on the flanks and undertail . The strong bill is flesh @-@ toned , the iris is pale brown , and the legs and feet are pale grey . Juveniles are similar in plumage to adults , and downy chicks are black , as with all rails . There are no subspecies , although individuals from the east of the breeding range tend to be slightly paler than their western counterparts . The male 's call is a loud krek krek , from which the scientific name is derived . The corn crane is larger than its closest relative , the African crane , which shares its wintering range ; that species is also darker @-@ plumaged , and has a plainer face .

The corn crane 's breeding habitat is grassland , particularly hayfields , and it uses similar environments on the wintering grounds . This secretive species builds a nest of grass leaves in a hollow in the ground and lays 6 ? 14 cream @-@ coloured eggs which are covered with rufous blotches . These hatch in 19 ? 20 days , and the black precocial chicks fledge after about five weeks . This crane is in steep decline across much of its former breeding range because modern farming practices often destroy nests before breeding is completed . The corn crane is omnivorous but mainly feeds on invertebrates , the occasional small frog or mammal , and plant material including grass seed and cereal grain . Natural threats include introduced and feral mammals , large birds , various parasites and diseases .

Although numbers have declined steeply in western Europe , this bird is classed as least concern on the IUCN Red List because of its huge range and large , apparently stable , populations in Russia and Kazakhstan . Numbers in western China are more significant than previously thought , and conservation measures have facilitated an increased population in some countries which had suffered the greatest losses . Despite its elusive nature , the loud call has ensured the corn crane has been noted in literature , and garnered a range of local and dialect names .

= = Taxonomy = =

The rails are a bird family comprising nearly 150 species . Although origins of the group are lost in antiquity , the largest number of species and least specialised forms are found in the Old World , suggesting this family originated there . The taxonomy of the small cranes is complicated , but the closest relative of the corn crane is the African crane , *C. egregia* , which has sometimes been given its own genus , *Crecopsis* , but is now more usually placed in *Crex* . Both species are short @-@ billed brown birds with a preference for grassland rather than wetland habitats typical of rails . Porzana cranes , particularly the ash @-@ throated crane (*Porzana albicollis*) are near relatives of the *Crex* genus .

Corn cranes were first described by Linnaeus in his *Systema Naturae* in 1758 as *Rallus crex* , but was subsequently moved to the genus *Crex* , created by German naturalist and ornithologist Johann Matthäus Bechstein in 1803 , and named *Crex pratensis* . The earlier use of *crex* gives it priority over Bechstein 's specific name *pratensis* , and leads to the current name of *Crex crex* . The binomial name , *Crex crex* , from the Ancient Greek " ????? " , is onomatopoeic , referring to the crane 's repetitive grating call . The common name was formerly spelt as a single word , " corncrane " , but the official version is now " corn crane " . The English names refer to the species habit of nesting in dry hay or cereal fields , rather than marshes used by most members of this family .

= = Description = =

The corn crane is a medium @-@ sized rail , 27 ? 30 cm (11 ? 12 in) long with a wingspan of 42 ? 53 cm (17 ? 21 in) . Males weigh 165 g (5 @.@ 8 oz) on average and females 145 g (5 @.@ 1 oz) . The adult male has the crown of its head and all of its upperparts brown @-@ black in colour ,

streaked with buff or grey . The wing coverts are a distinctive chestnut colour with some white bars . The face , neck and breast are blue @-@ grey , apart from a pale brown streak from the base of the bill to behind the eye , the belly is white , and the flanks , and undertail are barred with chestnut and white . The strong bill is flesh @-@ coloured , the iris is pale brown , and the legs and feet are pale grey . Compared to the male , the female has warmer @-@ toned upperparts and a narrower duller eye streak . Outside the breeding season , the upperparts of both sexes become darker and the underparts less grey . The juvenile is like the adult in appearance , but has a yellow tone to its upperparts , and the grey of the underparts is replaced with buff @-@ brown . The chicks have black down , as with all rails . While there are no subspecies , all populations show great individual variation in colouring , and the birds gradually become paler and greyer towards the east of the range . Adults undergo a complete moult after breeding , which is normally finished by late August or early September , before migration to south eastern Africa . There is a pre @-@ breeding partial moult prior to the return from Africa , mainly involving the plumage of the head , body and tail . Young birds have a head and body moult about five weeks after hatching .

The corn crake is sympatric with the African crake on the wintering grounds , but can be distinguished by its larger size , paler upperparts , tawny upperwing and different underparts pattern . In flight , it has longer , less rounded wings , and shallower wingbeats than its African relative , and shows a white leading edge to the inner wing . In both the breeding and wintering ranges it is unlikely to be confused with any other rails , since sympatric species are smaller , with white markings on the upperparts , different underparts patterns and shorter bills . A flying corn crake can resemble a gamebird , but its chestnut wing pattern and dangling legs are diagnostic .

= = = Voice = = =

On the breeding grounds , the male corn crake 's advertising call is a loud , repetitive , grating krek krek normally delivered from a low perch with the bird 's head and neck almost vertical and its bill wide open . The call can be heard from 1 @.@ 5 km (0 @.@ 93 mi) away , and serves to establish the breeding territory , attract females , and challenge intruding males . Slight differences in vocalisations mean that individual males can be distinguished by their calls . Early in the season , the call is given almost continuously at night , and often during the day , too . It may be repeated more than 20 @,@ 000 times a night , with a peak between midnight and 3 am . The call has evolved to make a singing male 's location clear , as this species hides in vegetation . The frequency of calling reduces after a few weeks but may intensify again near the end of the laying period before falling away towards the end of the breeding season . To attract males , mechanical imitations of their call can be produced by rubbing a piece of wood down a notched stick , or by flicking a credit card against a comb or zip @-@ fastener . The male also has a growling call , given with the bill shut and used during aggressive interactions .

The female corn crake may give a call that is similar to that of the male ; it also has a distinctive barking sound , similar in rhythm to the main call but without the grating quality . The female also has a high @-@ pitched cheep call , and a oo @-@ oo @-@ oo sound to call the chick . The chicks make a quiet peeick @-@ peeick contact call , and a chirp used to beg for food . Because of the difficulty in seeing this species , it is usually censused by counting males calling between 11 pm and 3 am ; the birds do not move much at night , whereas they may wander up to 600 m (660 yd) during the day , which could lead to double @-@ counting if monitored then . Identifying individual males suggests that just counting calling birds underestimates the true count by nearly 30 % , and the discrepancy is likely to be greater , since only 80 % of males may call at all on a given night . The corn crake is silent in Africa .

= = Distribution and habitat = =

The corn crake breeds from Britain and Ireland east through Europe to central Siberia . Although it has vanished from much of its historic range , this bird was once found in suitable habitats in Eurasia everywhere between latitudes 41 ° N and 62 ° N. There is also a sizable population in

western China , but this species nests only rarely in northern Spain and in Turkey . Old claims of breeding in South Africa are incorrect , and result from misidentification of eggs in a museum collection which are actually those of the African rail .

The corn crane winters mainly in Africa , from the Democratic Republic of the Congo and central Tanzania south to eastern South Africa . North of this area , it is mainly seen on migration , but occasionally winters in North Africa and to the west and north of its core area in southeast Africa . Most of the South African population of about 2 @, @ 000 birds occurs in KwaZulu @-@ Natal and the former Transvaal Province , and numbers elsewhere in Africa are uncertain . There are several nineteenth @-@ century records , when populations were much higher than now , of birds being seen in western Europe , mainly Britain and Ireland , between December and February .

This crane migrates to Africa along two main routes : a western route through Morocco and Algeria , and a more important flyway through Egypt . On passage , it has been recorded in most countries between its breeding and wintering ranges , including much of West Africa . Birds from Coll following the western route paused in West Africa on their way further south , and again on the return flight , when they also rested in Spain or North Africa . Eastern migrants have been recorded in those parts of southern Asia that lie between the east of the breeding range and Africa . Further afield , the corn crane has been recorded as a vagrant to Sri Lanka , Vietnam and Australia , the Seychelles , Bermuda , Canada , the US , Greenland , Iceland , the Faroes , the Azores , Madeira , and the Canary Islands .

The corn crane is mainly a lowland species , but breeds up to 1 @, @ 400 m (4 @, @ 600 ft) altitude in the Alps , 2 @, @ 700 m (8 @, @ 900 ft) in China and 3 @, @ 000 m (9 @, @ 800 ft) in Russia . When breeding in Eurasia , the corn crane 's habitats would originally have included river meadows with tall grass and meadow plants including sedges and irises . It is now mainly found in cool moist grassland used for the production of hay , particularly moist traditional farmland with limited cutting or fertiliser use . It also utilises other treeless grasslands in mountains or taiga , on coasts , or where created by fire . Moister areas like wetland edges may be used , but very wet habitats are avoided , as are open areas and those with vegetation more than 50 cm (20 in) tall , or too dense to walk through . The odd bush or hedge may be used as a calling post . Grassland which is not mown or grazed becomes too matted to be suitable for nesting , but locally crops such as cereals , peas , rape , clover or potatoes may be used . After breeding , adults move to taller vegetation such as common reed , iris , or nettles to moult , returning to the hay and silage meadows for the second brood . In China , flax is also used for nest sites . Although males often sing in intensively managed grass or cereal crops , successful breeding is uncommon , and nests in the field margins or nearby fallow ground are more likely to succeed .

When wintering in Africa , the corn crane occupies dry grassland and savanna habitats , occurring in vegetation 30 ? 200 cm (0 @. @ 98 ? 6 @. @ 56 ft) tall , including seasonally burnt areas and occasionally sedges or reed beds . It is also found on fallow and abandoned fields , uncut grass on airfields , and the edges of crops . It occurs at up to at least 1 @, @ 750 metres (5 @, @ 740 ft) altitude in South Africa . Each bird stays within a fairly small area . Although it sometimes occurs with the African crane , that species normally prefers moister and shorter grassland habitats than does the corn crane . On migration , the corn crane may also occur in wheatfields and around golf courses .

= = Behaviour = =

The corn crane is a difficult bird to see in its breeding sites , usually being hidden by vegetation , but will sometimes emerge into the open . Occasionally , individuals may become very trusting ; for five consecutive summers , an individual crane on the Scottish island of Tiree entered a kitchen to feed on scraps , and , in 1999 , a wintering Barra bird would come for poultry feed once the chickens had finished . In Africa , it is more secretive than the African crane , and , unlike its relative , it is rarely seen in the open , although it occasionally feeds on tracks or road sides . The corn crane is most active early and late in the day , after heavy rain and during light rain . Its typical flight is weak and fluttering , although less so than that of the African crane . For longer flights , such as migration , it

has a steadier , stronger action with legs drawn up . It walks with a high @-@ stepping action , and can run swiftly through grass with its body held horizontal and laterally flattened . It will swim if essential . When flushed by a dog , it will fly less than 50 m (160 ft) , frequently landing behind a bush or thicket , and then crouch on landing . If disturbed in the open , this crane will often run in a crouch for a short distance , with its neck stretched forward , then stand upright to watch the intruder . When captured it may feign death , recovering at once if it sees a way out .

The corn crane is solitary on the wintering grounds , where each bird occupies 4 @. @ 2 ? 4 @. @ 9 ha (10 ? 12 acres) at one time , although the total area used may be double that , since an individual may move locally due to flooding , plant growth , or grass cutting . Flocks of up to 40 birds may form on migration , sometimes associating with common quails . Migration takes place at night , and flocks resting during the day may aggregate to hundreds of birds at favoured sites . The ability to migrate is innate , not learned from adults . Chicks raised from birds kept in captivity for ten generations were able to migrate to Africa and return with similar success to wild @-@ bred young .

= = = Breeding = = =

Until 1995 , it was assumed that the corn crane is monogamous , but it transpires that a male may have a shifting home range , and mate with two or more females , moving on when laying is almost complete . The male 's territory can vary from 3 to 51 ha (7 @. @ 4 to 126 @. @ 0 acres) , but averages 15 @. @ 7 ha (39 acres) . The female has a much smaller range , averaging only 5 @. @ 5 ha (14 acres) . A male will challenge an intruder by calling with his wings drooped and his head pointing forward . Usually the stranger moves off ; if it stays , the two birds square up with heads and necks raised and the wings touching the ground . They then run around giving the growling call and lunging at each other . A real fight may ensue , with the birds leaping at each other and pecking , and sometimes kicking . Females play no part in defending the territory .

The female may be offered food by the male during courtship . He has a brief courtship display in which the neck is extended and the head held down , the tail is fanned , and the wings are spread with the tips touching the ground . He will then attempt to approach the female from behind , and then leap on her back to copulate . The nest is typically in grassland , sometimes in safer sites along a hedge , or near an isolated tree or bush , or in overgrown vegetation . Where grass is not tall enough at the start of the season , the first nest may be constructed in herby or marsh vegetation , with the second brood in hay . The second nest may also be at a higher altitude than the first , to take advantage of the later @-@ developing grasses further up a hill . The nest , well hidden in the grass , is built in a scrape or hollow in the ground . It is made of woven coarse dry grass and other plants , and lined with finer grasses . Although nest construction is usually described as undertaken by the female , a recent aviary study found that in the captive population the male always built the nest .

The nest is 12 ? 15 cm (4 @. @ 7 ? 5 @. @ 9 in) in diameter and 3 ? 4 cm (1 @. @ 2 ? 1 @. @ 6 in) deep . The clutch is 6 ? 14 , usually 8 ? 12 eggs ; these are oval , slightly glossy , creamy or tinted with green , blue or grey , and blotched red @-@ brown . They average 37 mm x 26 mm (1 @. @ 5 in x 1 @. @ 0 in) and weigh about 13 ? 16 g (0 @. @ 46 ? 0 @. @ 56 oz) , of which 7 % is shell . The eggs are laid at daily intervals , but second clutches may sometimes have two eggs added per day . Incubation is by the female only ; her tendency to sit tight when disturbed , or wait until the last moment to flee , leads to many deaths during hay @-@ cutting and harvesting . The eggs hatch together after 19 ? 20 days , and the precocial chicks leave the nest within a day or two . They are fed by the female for three or four days , but can find their own food thereafter . The juveniles fledge after 34 ? 38 days . The second brood is started about 42 days after the first , and the incubation period is slightly shorter at 16 ? 18 days . The grown young may stay with the female until departure for Africa .

Nest success in undisturbed sites is high , at 80 ? 90 % , but much lower in fertilised meadows and on arable land . The method and timing of mowing is crucial ; mechanized mowing can kill 38 ? 95 % of chicks in a given site , and losses average 50 % of first brood chicks and somewhat less than 40 % of second brood chicks . The influence of weather on chick survival is limited ; although chick

growth is faster in dry or warm weather , the effects are relatively small . Unlike many precocial species , chicks are fed by their mother to a greater or lesser extent until they become independent , and this may cushion them from adverse conditions . The number of live chicks hatched is more important than the weather , with lower survival in large broods . The annual adult survival rate is under 30 % , although some individuals may live for 5 ? 7 years .

= = = Feeding = = =

The corn crane is omnivorous , but mainly feeds on invertebrates , including earthworms , slugs and snails , spiders , beetles , dragonflies , grasshoppers and other insects . In the breeding areas , it is a predator of Sitona weevils , which infest legume crops. and in the past consumed large amounts of the former grassland pests , leatherjackets and wireworms . This crane will also eat small frogs and mammals , and plant material including grass seed and cereal grain . Its diet on the wintering grounds is generally similar , but includes locally available items such as termites , cockroaches and dung beetles . Food is taken from the ground , low @-@ growing plants and from inside grass tussocks ; the crane may search leaf litter with its bill , and run in pursuit of active prey . Hunting is normally in cover , but , particularly in the wintering areas , it will occasionally feed on grassy tracks or dirt roads . Indigestible material is regurgitated as 1 cm (0 @.@ 39 in) pellets . Chicks are fed mainly on animal food , and when fully grown they may fly with the parents up to 6 @.@ 4 km (4 @.@ 0 mi) to visit supplementary feeding areas . As with other rails , grit is swallowed to help break up food in the stomach .

= = Predators and parasites = =

Predators on the breeding grounds include feral and domestic cats , introduced American mink , feral ferrets , otters and red foxes , and birds including the common buzzard and hooded crow . In Lithuania , the introduced raccoon dog has also been recorded as taking corn cranes . When chicks are exposed by rapid mowing , they may be taken by large birds including the white stork , harriers and other birds of prey , gulls and corvids . At undisturbed sites nests and broods are rarely attacked , as reflected in a high breeding success . There is a record of a corn crane on migration through Gabon being killed by a black sparrowhawk .

The widespread fluke *Prosthogonimus ovatus* , which lives in the oviducts of birds , has been recorded in the corn crane , as have the parasitic worm *Plagiorchis elegans* , the larvae of parasitic flies , and hard ticks of the genera *Haemaphysalis* and *Ixodes* .

During the reintroduction of corn cranes to England in the 2003 breeding season , enteritis and ill health in pre @-@ release birds was due to bacteria of a pathogenic *Campylobacter* species . Subsequently , microbiology tests were done to detect infected individuals and to find the source of the bacteria in their environment .

= = Status = =

Until 2010 , despite a breeding range estimated at 12 @,@ 400 @,@ 000 km² (4 @,@ 800 @,@ 000 sq mi) , the corn crane was classified as near threatened on the IUCN Red List because of serious declines in Europe , but improved monitoring in Russia indicates that anticipated losses there have not occurred and numbers have remained stable or possibly increased . It is therefore now classed as least concern , since the major populations in Russia and Kazakhstan are not expected to change much in the short term . There are an estimated 1 @.@ 3 ? 2 @.@ 0 million breeding pairs in Europe , three @-@ quarters of which are in European Russia , and a further 515 @,@ 000 ? 1 @,@ 240 @,@ 000 pairs in Asiatic Russia ; the total Eurasian population has been estimated at between 5 @.@ 45 and 9 @.@ 72 million individuals . In much of the western half of its range , there have been long @-@ term declines that are expected to continue , although conservation measures have enabled numbers to grow in several countries , including a five @-@ fold increase in Finland , and a doubling in the UK . In the Netherlands , there were 33 breeding

territories in 1996 , but this number had increased to at least 500 by 1998 .

The breeding corn crane population had begun to decline in the 19th century , but the process gained pace after World War II . The main cause of the steep declines in much of Europe is the loss of nests and chicks from early mowing . Haymaking dates have moved forward in the past century due to faster crop growth , made possible by land drainage and the use of fertilisers , and the move from manual grass cutting using scythes to mechanical mowers , at first horse drawn and later pulled by tractors . Mechanisation also means that large areas can be cut quickly , leaving the crane with no alternative sites to raise either a first brood if suitable habitat has gone , or a replacement brood if the first nest is destroyed . The pattern of mowing , typically in a circular pattern from the outside of a field to its centre , gives little chance of escape for the chicks , which are also exposed to potential animal predators . Adults can often escape the mowers , although some incubating females sit tight on the nest , with fatal results .

Loss of habitat is the other major threat to the corn crane . Apart from the reduced suitability of drained and fertilised silage fields compared to traditional hay meadows , in western Europe the conversion of grassland to arable has been aided by subsidies , and further east the collapse of collective farming has led to the abandonment and lack of management of much land in this important breeding area . More localised threats include floods in spring , and disturbance by roads or wind farms . This bird is good eating ; when they were common in England , Mrs Beeton recommended roasting four on a skewer . More significant than direct hunting is the loss of many birds , up to 14 million a year , in Egypt , where migrating birds are captured in nets set for the quail with which they often migrate . Although this may account for 0.5 - 2.7 % of the European population , the losses to this form of hunting are less than when the targeted species were more numerous and predictable .

Most European countries have taken steps to conserve the corn crane and produce national management policies ; there is also an overall European action plan . The focus of conservation effort is to monitor populations and ecology and to improve survival , principally through changing the timing and method of hay harvesting . Later cutting gives time for breeding to be completed , and leaving uncut strips at the edges of fields and cutting from the centre outwards reduces the casualties from mowing . Implementing these changes is predicted to stop the population decline if the measures are applied on a sufficiently large scale . Reduction of illegal hunting , and protection in countries where hunting is still allowed , are also conservation aims . Reintroduction of the corn crane is being attempted in England , and breeding sites are scheduled for protection in many other countries . Where breeding sites impinge on urban areas , there are cost implications , estimated in one German study at several million euros per corn crane . The corn crane does not appear to be seriously threatened on its wintering grounds and may benefit from deforestation , which creates more open habitats .

== In culture ==

Most rails are secretive wetland birds that have made little cultural impression , but as a formerly common farmland bird with a loud nocturnal call that sometimes led to disturbed sleep for rural dwellers , the corn crane has acquired a variety of folk names and some commemoration in literature .

=== Names ===

The favoured name for this species among naturalists has changed over the years , with " landrail " and variants of " corncrake " being preferred at various times . " Crane gallinule " also had a period of popularity between 1768 and 1813 . The originally Older Scots " cornecrake " was popularised by Thomas Bewick , who used this term in his 1797 *A History of British Birds* . Other Scots names include " corn scrack " and " quailzie " ; the latter term , like " king of the quail " , " grass quail " , the French " roi de caille " , and the German " Wachtelkönig " refer to the association with the small gamebird . Another name , " daker " , has been variously interpreted as onomatopoeic , or derived

from the Old Norse *agr* @-@ *hoene* , meaning " cock of the field " ; variants include " drake " , " drake Hen " and " gorse drake " .

= = = In literature = = =

Corn crakes are the subject of three stanzas of the seventeenth century poet Andrew Marvell 's " Upon Appleton House " , written in 1651 about the North Yorkshire country estate of Thomas Fairfax . The narrator depicts the scene of a mower cutting the grass , before his " whistling Sithe " unknowingly " carves the Rail " . The farmhand draws out the scythe " all bloody from its breast " and " does the stroke detest " . It continues with a stanza that demonstrates the problematic nature of the corn crake 's nesting habits :

John Clare , the nineteenth @-@ century English poet based in Northamptonshire , wrote " The Landrail " , a semi @-@ comic piece which is primarily about the difficulty of seeing corn crakes ? as opposed to hearing them . In the fourth verse he exclaims : " Tis like a fancy everywhere / A sort of living doubt " . Clare wrote about corn crakes in his prose works too , and his writings help to clarify the distribution of this rail when it was far more widespread than now .

The Finnish poet Eino Leino also wrote about the bird in his poem " Nocturne " .

The proverbial use of the corn crake 's call to describe someone with a grating or unmelodious voice is illustrated in the quotation " thanks to a wee woman with a voice like a corncrake who believed she was an apprentice angel " . This usage dates from at least the first half of the nineteenth century , and continues through to the present .