

= Yellow @-@ faced honeyeater =

The yellow @-@ faced honeyeater (*Caligavis chrysops*) is a medium @-@ small bird in the honeyeater family Meliphagidae . It takes both its common name and scientific name from the distinctive yellow stripes on the sides of its head . It has a loud clear call , and is one of the first birds heard in the morning . It is widespread across eastern and south eastern Australia , in open sclerophyll forests from coastal dunes to high @-@ altitude subalpine areas , and woodlands along creeks and rivers . Comparatively short @-@ billed for a honeyeater , it is thought to have adapted for a diet of flies , spiders and beetles , as well as nectar and pollen from the flowers of plants such as Banksia and Grevillea , and soft fruits . It catches insects in flight as well as gleaning them from the foliage of trees and shrubs .

While some yellow @-@ faced honeyeaters are sedentary , hundreds of thousands of them migrate northwards between March and May to spend the winter in southern Queensland and return in July and August to breed in southern New South Wales and Victoria . They form socially monogamous pairs and lay two or three eggs in a delicate cup @-@ shaped nest . While the success rate can be low , the pairs nest several times during the breeding season .

Honeyeaters ? preferred woodland habitat is vulnerable to the effects of land clearing , grazing and weeds . However , as it is common and widespread , the yellow @-@ faced honeyeater is considered by the IUCN to be of least concern for conservation . It is considered a pest in orchards in some areas .

= = Taxonomy = =

The yellow @-@ faced honeyeater was first described , and placed in the genus *Sylvia* , by ornithologist John Latham in his 1801 work *Supplementum Indicis Ornithologici , sive Systematis Ornithologiae* . The generic name *Lichenostomus* comes from the Ancient Greek words meaning " lichen @-@ like eruption of the mouth " referring to the bare skin at the gape flange thought to look like lichen , and the specific name *chrysops* is from the Greek words meaning " gold " and " face " in reference to the stripe of yellow feathers . It is also known as the yellow @-@ gaped honeyeater , or the quitchup in reference to its call .

Delineating the genus *Lichenostomus* has been systematically contentious , and evaluations of relationships among honeyeaters in the genus using dense taxon and nucleotide sampling confirmed previous findings that *Lichenostomus* is not monophyletic . While five species have previously been described as comprising the *Caligavis* subgroup , studies using the mitochondrial ND2 and nuclear ? @-@ fibrinogen @-@ 7 genes identified the yellow @-@ faced honeyeater as closely related to the black @-@ throated honeyeater (*C. subfrenatus*) , and the obscure honeyeater (*C. obscurus*) , and they were therefore able to be grouped in the genus *Caligavis* . The bridled honeyeater (*B. frenatus*) and the Eungella honeyeater (*B. hindwoodi*) were sufficiently different to be a separate genus as *Bolemoreus* .

Three subspecies have been described (Matthews , 1912) but are not universally recognised . There are only very slight differences between the nominate race and *L.c. samueli* found in the Mount Lofty Ranges in South Australia and *L. c. barroni* from Clarke Range and the Atherton Tableland in Queensland . The latter race is described as " poorly differentiated " and " possibly not worthy of recognition " by the Handbook of the Birds of the World .

= = Description = =

= = = Appearance = = =

The yellow @-@ faced honeyeater is a medium @-@ small , greyish @-@ brown bird that takes its common name from distinctive yellow stripes on the sides of the head . Yellow feathers form a narrow stripe above the gape , then broaden and curve below the eye to end in a small white patch

of feathers on the ear @-@ coverts . Above the yellow stripe is a black eye stripe which is broken by a small yellow to off @-@ white patch behind the eye , and below is another distinct black stripe running the length of the yellow line . The chin and throat are a pale greyish @-@ brown , streaked with slightly darker grey , and the upper body is a dark greyish @-@ brown to olive @-@ brown . Olive green outer edges on the remiges combine to form an olive panel on the folded wing . The bill is black and slightly down @-@ curved , and the gape is cream . The iris is a dusky blue in adult birds , and brown in juveniles . Juveniles are very similar to the adult , with slightly less streaking on the breast , an orange @-@ brown tip on the bill and a yellower gape ; male and female birds are also similar , with the male being slightly larger ; and in the field there are no visible differences between the subspecies . The yellow @-@ faced honeyeater averages 15 ? 17 @.@ 5 centimetres (5 @.@ 9 ? 6 @.@ 9 in) in length , with a wingspan of 21 @.@ 5 ? 26 centimetres (8 @.@ 5 ? 10 @.@ 2 in) and a weight of between 12 @.@ 5 ? 20 @.@ 5 grams (0 @.@ 44 ? 0 @.@ 72 oz) (average 17 grams (0 @.@ 60 oz)) .

= = = Vocalizations = = =

One of the first birds heard in the morning , the yellow @-@ faced honeyeater utters calls that are full and loud , and extremely varied . The male sings from a roost for up to an hour , beginning twenty or thirty minutes before dawn . The song is a running series of cheerful notes sounding like chick @-@ up , chick @-@ up , from which its common name of quitchup is derived . Counter @-@ singing by neighbouring birds is common . The territorial call , also given by opponents during fights , is a long preet with an upward inflection . The alarm call is a loud trilling whistle . Common calls , thought to be contact calls , are animated two @-@ note calls variously described as terric , terric , cr @-@ rook , cr @-@ rook or put @-@ put , put @-@ put .

= = Distribution and habitat = =

= = = Habitat = = =

The yellow @-@ faced honeyeater is widespread across eastern and south eastern Australia , in open sclerophyll forests from coastal dunes to high @-@ altitude subalpine areas , and often in riparian woodlands . It is usually found in open forests dominated by spotted gum with ironbarks and stringybarks such as *Eucalyptus crebra* and *E. melanophloia* , with a light shrubby understorey , and less often in dry open forests and woodlands dominated by *Angophora* , *Acacia* , *Banksia* , *Casuarina* or *Callitris* . It occurs in high @-@ altitude , tall , open forests of alpine ash and woodlands dominated by snow gum or white box . It has been recorded in coastal heath when banksias are flowering , and amongst flowering mangroves . It occupies areas infested with weeds such as Scotch broom and blackberries , and developed areas including orchards and parks and gardens , where it feeds on cultivated fruit and flowers . It can be found in forests regenerating after fire or logging , though it is more common in mature forests .

While the yellow @-@ faced honeyeater tends to nest away from the edge of forest remnants , experiments with natural and artificial nests at varying distances from the open areas showed no increase in the number of avian predators at the forest edge . The experiment results do not support the " ecological trap " and " predator influx " theories and contribute to a belief that fragmented habitats may not be as problematic as previously thought .

= = = Range = = =

The yellow @-@ faced honeyeater ranges across a broad arc from near Cooktown in north Queensland , south west between a line from Charters Towers to Albury and the coast , and then west to the Fleurieu Peninsula and Mount Lofty Ranges in South Australia . Population densities have been recorded from 0 @.@ 01 birds per hectare (2 @.@ 5 acres) near Armidale in New

South Wales to 7 @. @ 8 birds per hectare at Tarnagulla , Victoria . During the winter months of June and July , numbers are generally decreased in Victoria and increased in Queensland , following northward migration .

= = = Migration = = =

While there are resident populations of the yellow @-@ faced honeyeater throughout its range , it is for the most part a seasonal , latitudinal , daytime migrant . During the autumn (March to May) it migrates north along the highlands and coastal fringe of eastern Australia to southern Queensland , to return in the spring (August to October) of the same year . The birds commonly move in flocks of 10 to 100 birds , but occasionally in larger groups of up to 1 @, @ 000 or more birds . The groups can include other species such as the white @-@ naped honeyeater , fuscous honeyeater , noisy friarbird and silvereye . They move in successive flocks at a rate of up to several thousand birds an hour . Near Hastings Point in New South Wales over 100 @, @ 000 passed through in a single day . The species is able to detect geomagnetic fields and uses them to navigate while migrating . Experiments where the vertical component of the magnetic field was reversed indicate that the magnetic compass of the yellow @-@ faced honeyeater is based on the inclination of the field lines and not on polarity , distinguishing between the direction of the equator and the poles , rather than north and south . While their flight is in one general direction , it is not in a straight line as the flocks stay in vegetated areas , negotiate gaps in the mountain ranges and detour around cities .

The migration of many birds in Australia , including honeyeaters , has generally been described as occurring mainly in response to external environmental stimuli , such as food availability or an influx of water . However , the yellow @-@ faced honeyeater has been found to have a broad range of characteristics which are consistent with the adaptations of Northern Hemisphere migrants to their mobile lifestyle : an annual cycle of migratory restlessness ; seasonally appropriate orientation based on magnetic , solar and polarised light cues ; and a migration program based on the magnetic inclination compass .

= = Behaviour = =

The yellow @-@ faced honeyeater is usually seen singly , in pairs or in small family groups when not migrating . While it is generally active , in the early morning it will often sit still on high perches for long periods of time .

= = = Feeding = = =

Comparatively short @-@ billed for a honeyeater , the yellow @-@ faced honeyeater is thought to have adapted for a mixed diet . Its diet consists of nectar , pollen , fruit , seeds , honeydew and insects . It is arboreal , foraging primarily amongst the foliage and flowers of trees , shrubs and mistletoes , less often on branches and tree trunk , and rarely on the ground . A study of the pollen on the bills and foreheads of captured birds found that 70 % carried pollen from silver banksia (*Banksia marginata*) , 61 % from heath @-@ leaved banksia (*Banksia ericifolia*) , and 22 % carried pollen from other plants in the area including fern @-@ leaved banksia (*Banksia oblongifolia*) , mountain devil (*Lambertia formosa*) and green spider flower (*Grevillea mucronulata*) . Of 545 observations of yellow @-@ faced honeyeaters feeding , around 40 % were feeding on nectar with 60 % feeding on insects . The yellow @-@ faced honeyeater feeds on insects by gleaning , and by sallying or catching insects in flight or probing in bark crevices . The insects eaten are primarily Diptera (flies , mosquitoes , maggots , gnats and midges) , beetles and spiders . They feed as individuals , as pairs or as small groups of up to ten birds , and during migration in larger groups . They sometimes feed in large mixed @-@ species foraging flocks composed predominately of insectivorous birds .

In April and May , before the autumn migration , the yellow @-@ faced honeyeater increases its nectar consumption , which increases its body mass . The average body mass in late autumn of 17

@. @ 5 grams (0 @. @ 62 oz) is 13 % higher than the average recorded between January and April , and the yellow @-@ faced honeyeater begins the migration with good fat reserves .

= = = Breeding = = =

The yellow @-@ faced honeyeater breeds in monogamous pairs in a breeding season that extends from July to March . Migrating birds begin nesting later than sedentary birds . They nest solitarily in all @-@ purpose territories that both parents defend against conspecifics and other species including thornbills , spinebills and silvereyes , although the male is involved in more aggressive interactions than the female . Within a breeding season females lay two or three clutches of eggs , re @-@ nesting with the same partner in the same territory . Banded birds have been identified in the same territory for periods of up to five years .

The nest is built in the understorey shrubs , relatively close to the ground . Nests have been recorded in prickly coprosma (*Coprosma quadrifida*) , Cassinia , tea @-@ trees (*Melaleuca*) , eucalypts , and acacias , as well as in garden shrubs . The nest is a fragile , transparent structure , cup @-@ shaped , but swollen at the sides and narrower at the rim . The female builds the nest , but is often accompanied by the male as she gathers nesting material . Most nests are built of greenish material which varies with the location ; in coastal areas grass is the primary material , while in mountain forests the nest is often covered with moss . One bird was recorded repeatedly flying between the nest and a koala 36 metres (118 ft) away and plucking the long hair near its ears to incorporate in the nest . The nests are very fine , with the eggs visible through the gauze @-@ like walls , and they sometimes fall apart . They have been known to disintegrate with eggs and nestlings falling through the bottom .

The female undertakes the incubation alone . Eggs are oval , approximately 21 millimetres (0 @. @ 83 in) long and 14 millimetres (0 @. @ 55 in) wide , and pinkish @-@ white in colour with spots and blotches of dark reddish @-@ brown . The clutch size varies from one to three eggs , and eggs take around two weeks to hatch . Upon hatching , both parents feed the nestlings and remove faecal pellets . The chicks fledge after thirteen days , and leave the parental territory after a further two weeks . The success rate can be as low as 16 % of eggs developing into fledged young , with nest failure , hot weather , heavy rain , human activity (including fungicide spraying and nest damage) , egg destruction by brood parasites , and predation by brown snakes , cats and currawongs all recorded as contributing to brood failure . (Among the species that parasitize the nests of yellow @-@ faced honeyeaters are fan @-@ tailed cuckoos , brush cuckoos , pallid cuckoos , shining bronze cuckoos and Horsfield 's bronze cuckoos .) The yellow @-@ faced honeyeater rapidly nests again after both successful and failed breeding attempts .

A paternity analysis of yellow @-@ faced honeyeater nestlings found that 10 of 18 nestlings were fathered by the male of the nesting pair , with clear evidence for extra @-@ pair paternity in the case of the remaining 44 % . This conflicts with the usual pattern , where genetic monogamy is linked to the characteristics of strong social pairing , essential paternal contributions to brood rearing , and to sexual monomorphism ; characteristics exhibited by the yellow honeyeater .

= = Conservation status = =

Several ectoparasites which can affect both survival and reproductive fitness have been found on the yellow @-@ faced honeyeater ; the mites *Ptilonyssus meliphagae* and *Ptilonyssus thymanzae* and *Ixodes* species ticks .

In general , honeyeaters require extensive corridors of mature trees along their migratory routes , and flowering woodlands for nesting , so they are vulnerable to the effects of land clearing , grazing and weed infestations . The woodland habitat they prefer is considered an endangered ecological community . However , as it is common and widespread , the yellow @-@ faced honeyeater is considered by the IUCN to be of least concern for conservation . In some areas it is considered a pest because of its intrusion into orchards and urban gardens where it damages fruit .