

Songbird
ReMix

Paridae

of the World



15 Species in the Tit Family

Avian Models for 3D Applications
Characters and Texture Mapping by Ken Gilliland

Songbird ReMix

Paridae of the World

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Paridae of the World

Introduction

Let's get the obvious out of the way first. All birds in this set belong to the passerine family, *Paridae*, which are more commonly known as "Tits". It's important to note that the type of bird as known as a "Tit" was named hundreds of years before the slang form of the word **ever existed**. Simply put, *'titt'* was an Old English word for something small and "Tits" are indeed, very little birds. Even the Great Tit (named so because it's one of the largest of the tits) is only 14 cm in length. Tits are, for the most part, bold inquisitive birds, that are acrobatic in nature. This set includes a good variety of crested and non-crested, many with striking patterning and color.

Overview and Use

The set is located within the **Animals : Songbird ReMix** folder. Here is where you will find a number of folders, such as **Bird Library**, **Manuals** and **Resources**. Let's look at what is contained in these folders:

- **Bird Library:** This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - **Perching Birds (Order Passerines)**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3".

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*Firefly* or *Superfly*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may

Where to find your birds

Type Folder	Bird Species
<p>Perching Birds (Order Passeriformes) Chickadees, Tits & their Allies</p>	<p>Fire-capped Tit Azure Tit Gray-crested Tit Yellow Tit White-naped Tit Yellow-cheeked Tit White-winged Black Tit Acacia Tit Sultan Tit Elegant Tit Rufous-naped tit Sombre Tit Marsh Tit Varied Tit Yellow-browed Tit</p>

Where to find your poses

Type Folder	For what species?
<p>Perching Birds (Order Passeriformes) Poses can be found in “Universal Poses” & “type” folders</p>	<p>All Songbirds</p>

Physical-based Rendering

Iray and **Superfly** requires more CPU and memory horsepower than the legacy renderers because of ray-trace bounces and higher resolution meshes needed for displacement. Poser’s **Superfly** renderer will require that the “Min Transparent Bounces” be set to **at least 16** and that the “Max Transparent Bounces” be set to **at least 32** in render settings. Superfly renders may show artifacts in the head area. The higher the bounce settings, less chance those will be apparent. This is a known Poser issue and may be addressed in the future. Increasing the SubD may minimize this issue. A good work around solution for Superfly artifacts is to HIDE Fluff areas (Correction Controls).

IK Concerns

Some poses may go askew when IK is turned on. By default, Poser’s IK feature is turned off when loading a bird. To turn it on, select the “Figure” category from the main tool bar and “Use Inverse Kinematics” from the submenu.

By default, DAZ Studio’s IK feature is turned on when loading a bird. This will cause the thigh and shin rotations change when the character is moved. The **CTRL K**

keypress will turn IK on and off in DAZ Studio. IK doesn't work that well in Studio, so I suggest selecting the character in the **Scene tab** and simply deleting the two IK body parts to remove IK.

Posing & Shaping Considerations

This volume has various species, so when using generic poses not every pose will work perfectly with every bird. You may find that some minor alteration on the stock poses may be warranted.

Here are some of the most common alterations you may need to make:

- Birds will not be flat on the zero plane due to leg size and overall scale.
- Because of the numerous beak shapes, closing the beak may range from 0.5 to 1. Usually 0.8 is about right.
- **Raise Upper Beak** (*in Action Controls*): This morph is a "one size fits all" control. Because of the variety of beak shapes. It may not work with all birds.
- **Tongue poke-through** (especially when the beak is open). This can be easily solved by using the **Throat-Fuller1 & 2** morphs (*found in Creation Control/Head Shapes*).

Hiding Transparency Panes

In some camera angles and lighting situations, the area where a transparency pane connects to the main body may be obvious and undesirable. In the Correction Controls area of the model, you can hide individual sections on these transparency panes to avoid this issue.

Working with "Crested" Tits

Many of the tits included have crests. In certain instances and poses, you may want to adjust the crests. Some crested tits are normally seen with what is referred to as an "Erect Crest" which uses a special morph (found in the Action Controls : Head Controls : Expressions and Behavior folder). This crest is almost always "up" except in flight. Turning off this morph would give close to the "in-flight" look. With normal crests, using the "Crest Down" morph (found in the Creation Controls : Crest Shapes folder), works well to give the "in-flight" look. Additional controls that are helpful (found in the Creation Controls : Crest Shapes folder) are Crest Length, Crest Forward, Crest Curl Up, and Crest End Up.

Crested Tits (normal crests)

- Yellow-cheeked Tit (m/f)
- Rufous-napped Tit (m/f)
- Yellow-browed Tit

Crested Tits that are usually seen with "Erect Crests"

- Gray-crested Tit
- Yellow Tit (m/f)
- Sultan Tit (m/f)

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Paridae of the World

Fire-capped Tit

Azure Tit

Gray-crested Tit

Yellow Tit

White-naped tit

Yellow-cheeked Tit

White-winged Black Tit

Acacia Tit

Sultan Tit

Elegant Ttit

Rufous-naped Tit

Sombre tit

Marsh Tit

Varied Tit

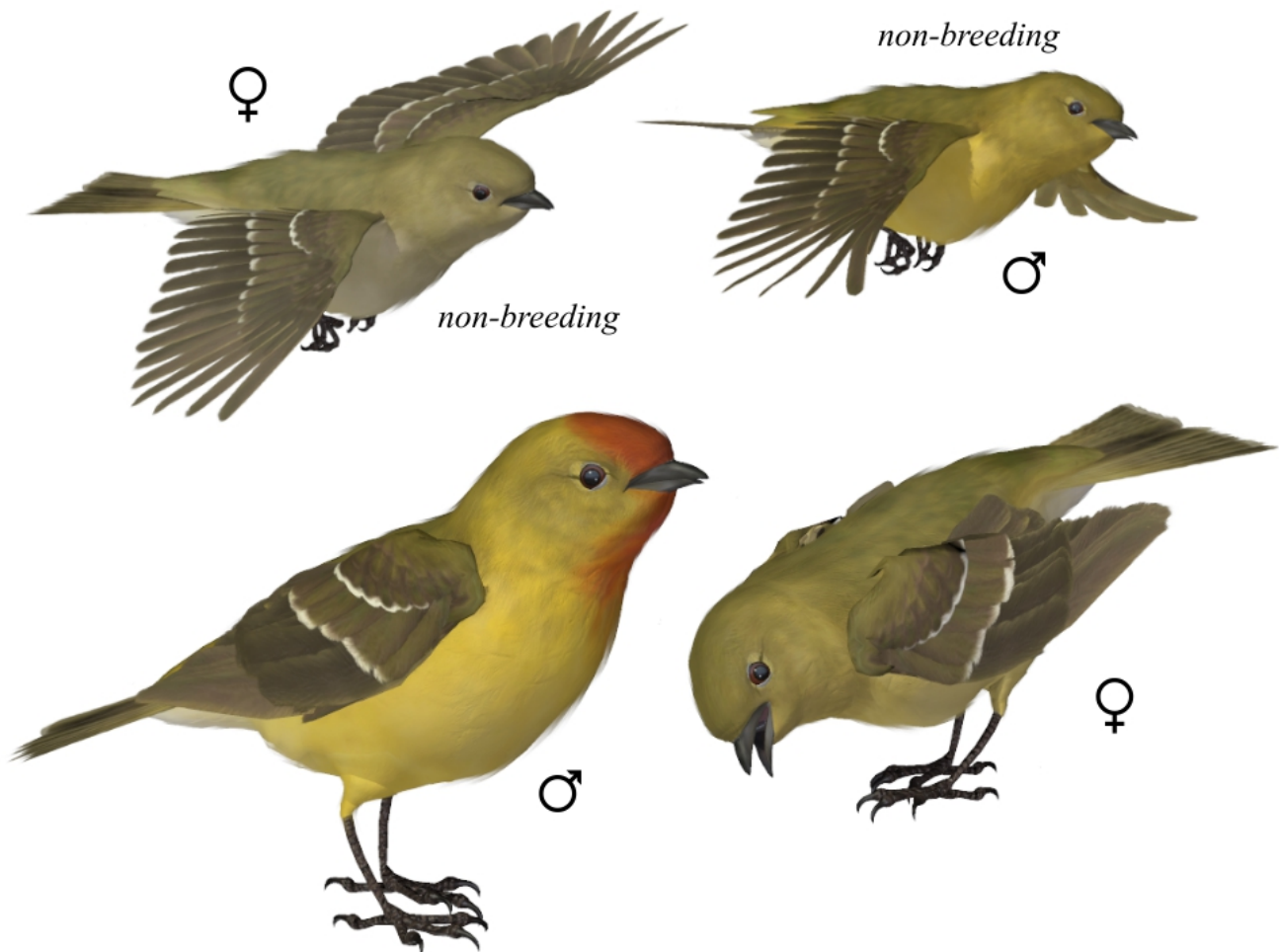
Yellow-browed Tit

Common Name: Fire-capped Tit
Scientific Name: *Cephalopyrus flammiceps*

Size: 3.3-3.7 inches (8.5-9.5 cm); **Wingspan:** 5.5-5.9 inches (14-15 cm)

Habitat: Asia; breeds in the temperate forest bordering the Himalayas to the south, in the Hengduan Shan and Nujiang Shan on the Myanmar-China border, the Micah Shan and Daba Shan on the Northern Sichuan border.

The fire-capped tit occurs in forest, woodlands and regions with solitary trees. It prefers temperate rainforest and mixed deciduous forest with oak, hazel, elm and walnut, just below the conifer belt. At higher altitudes it frequents clusters of cherry and scattered willows. In Kashmir and Ladakh, it nests in shrubs at high altitude. In China, it is reported in spruce, fir and rhododendron. In Thailand, it stays in deciduous hillside forests. Nesting occurs at different altitudes depending on the region. In Pakistan, the fire-capped tit nests



between 1,800 m (5,900 ft) and 2,600 m (8,500 ft), in the northwest of India from 1800 m to 3,500 m (11,500 ft), and in Nepal from 2,135 m (7,005 ft) to 3,000 m (9,800 ft). Western populations winter in the plains of North-Central India. Populations of the eastern Himalayas spend the period from November to May in southern Sikkim, between 300 m (980 ft) and 1,400 m (4,600 ft). In

the far east of the breeding range, seasonal migration is less pronounced, and in Sichuan and Burma the birds remain during the winter at relatively high altitudes, around 1800 meters. During the winter it is also found in evergreen broad-leaved forest in Thailand.

Status: Least Concern. **Global population:** 1,430,000-2,770,000 mature individuals with a declining population trend. This species is not well known; it is clearly much under-recorded, as it is difficult to locate among leaves of the tall forest trees. Locally, it is quite common in the western Himalayas, especially Kashmir and Ladakh, and in the Kulu and Simla districts of Himachal Pradesh. It is decidedly scarce and somewhat irregular in Nepal. It is seen with regularity in Bhutan (notably in the forest patches leading to the Pele La). In northeastern India, there are relatively few reports from northern West Bengal or from the hills flanking Brahmaputra valley in Assam and Arunachal Pradesh. In China, it is widespread in the central and southern mountains. In winter months, the nominate race should be looked for in gatherings of birds in fruiting trees; even trees in the gardens of the Taj Mahal, at Agra. With such an elusive species, it is difficult to assess population levels, but its tolerance of patchy forests and forest clearings with flowering trees makes it less vulnerable than many other small forest birds in its range. It is known to be present in several national parks.

Diet: Small invertebrates, chiefly insects, but some vegetable material also taken (flower buds and young leaves, and also to take juice or sap exuded from banyan (*Ficus*) leaves).

It forages in the middle and upper canopy of tall trees and in riverine bushes. Foraging in tit-like fashion in canopy, it is often seen swinging upside-down to investigate leaf bunches, or climbing along the underside of branches, peering into nooks and crannies. Although it feeds with tit-like agility, seems to “walk” with deliberate gait rather like a tiny parrot, sidling along twigs to pull in rolled leaves with its bill, and then, while holding a leaf securely underfoot, prises it open. It holds larger prey items with its foot, extracting the soft contents. It is usually found in small parties, but can be found in gatherings up to a 100 individuals. The flocks may gather on bare trees on hillsides, looking like tiny finches. Also, it joins mixed-species flocks, especially outside breeding season.

Breeding: A tiny olive-and-yellow passerine with slightly notched short tail (two-thirds of which concealed by long uppertail-coverts) and small, slightly decurved, narrowly conical and sharply pointed bill; in plumage superficially resembling various leaf-warblers (*Phylloscopus*). The male nominate race in breeding plumage (February–July) has varying amounts of bright orange or red on its forecrown, chin and throat. The remainder of its head and upper parts are yellowish-olive, brightest on rump. The upper wing is dark olive-brown, feathers edged pale yellowish (clear wingbars and pale tertial fringes when feathers fresh). The tail is blackish-brown, the feathers fringed yellowish-green and tipped white (when fresh). The lores and area around eye are deep yellow, sometimes washed orange or reddish color. The under parts are yellow, often looking quite bright, shading into the bright orange or red of

throat. The iris is brown to dark-brown and the bill is blackish with some gray. The legs are dark blue-gray.

The non-breeding male lacks the reddish on crown, throat and face, resembles female but is a brighter yellowish-olive above and yellower below, and has whiter throat. Female is duller than male, more grayish-olive on the crown and nape, becoming more yellowish-olive on the rump and upper tail-coverts, with the grayish-white under parts washed pale yellow on the belly and flanks. In breeding plumage, it is yellower on the throat, face and breast, contrasting with the off-white lower belly and ventral area. The juvenile resembles a dull female, having no yellow below and being very grayish-olive above, but by autumn many are quite bright yellow below (latter, however, possibly fresh-plumaged non-breeding males).

The nesting season runs from early April to mid-June. The nest is built in a hollow inside a trunk or large branch. The fire-capped tit prefers cavities with their entrance protected by a branch or scar. It usually uses natural cavities but often takes over an abandoned woodpecker nest. Occasionally, a hollow is excavated where a rotting branch fell off. The nest, usually between 6 and 12 meters above the ground, is often very difficult to detect. The nest itself is a bowl built of dry grass, rootlets and sometimes a few feathers. It is lined with finer grasses and feathers. This is done by the female, while the male protects the territory. There are usually four dull blue-green eggs. The incubation period is unknown. If she is disturbed, she tries to deter the intruders by inflating her feathers and making hissing sounds. It is unknown if the male takes part in incubating. Youngsters are fed by both parents. The female takes care of maintenance and cleaning of the nest on her own.

Cool Facts: The species was once considered to be a kinglet but is today treated as a tit.

- *C. f. flammiceps*. First reported by E. Burton in 1836. The nominate subspecies is found in northern Pakistan (Gilgit) and Kashmir eastward to western Nepal; non-breeding north-central India.
- *C. f. olivaceus*. First reported by Rothschild in 1923. This subspecies is found in central Nepal eastward to Bhutan and northeastern India (Assam, Arunachal Pradesh), and south-central and southern China (south Ningxia, southeastern Gansu, south Shaanxi, south-central Sichuan, southeastern Xizang, Yunnan and western Guizhou). Non-breeding birds are found in the foothills, also (rarely) in eastern Myanmar, northwestern Thailand and northwestern Laos. *Race olivaceus* is darker green above than the nominate, with the yellow of the underparts a sullied olive, also the male has smaller areas of orange on crown and throat.

Common Name: Azure Tit
Scientific Name: *Cyanistes cyanus*

Size: 5.1-5.5 inches (13-14 cm); **Wingspan:** 7-7.8 inches (18-20 cm)

Habitat: Asia; throughout Russia and Central Asia and northwest China, Manchuria and Pakistan.

It is found in the lowlands in a wide variety of forested habitats; including light deciduous and mixed woodlands with shrubby underlayer, turanga (*Populus euphratica*) groves, swamp-forest, riverine thickets of willow, tamarisk in semi-desert oases, birch or poplar, in trees along ditches at the edges of cultivation, orchards, marshland edges and bushy or shrubby areas. In more upland areas, it breeds in birch forests with willow and larch thickets and stands of spruce or juniper. The central Asian races are found in montane deciduous and mixed forests, mature valley woodlands and willow scrub.

In non-breeding season, it can be found in similar habitats but more often along forest edges, in thickets, semi-desert areas, waterside scrub and reedbeds. In Tajikistan, it occurs in lowland gardens between late August and March.



Status: Least Concern. **Global population:** 20,000-99,999 mature individuals with a declining population trend. It is locally common to uncommon. In some areas, such as central Russia, it is very common, but is generally uncommon along the western edge of its range (west of the Volga river) and in China (except in the northwest). In central Siberia, it is rare along the Yenisei river. Central Asian races (*flavipectus* and *carruthersi*) are uncommon and localized. Race *berezowskii* is rare and very little known, possibly not recorded since originally collected, in 1880s. The estimated European breeding population is 30,600 pairs, the majority of which in Russia, with 600 in Belarus. There have been a few seen breeding in Finland.

Diet: Small invertebrates, eggs and larvae of insects (including aphids, moths, lacewings, antlions, grasshoppers, flies, bees, wasps and ants, beetles, spiders. It also feeds on seeds and some fruit, including berries of spruce, birch, buckthorn, rose hips and salt tree. Its nestlings diet is mostly comprised of moth caterpillars.

It is usually in pairs in breeding season, and in small groups or family parties in late summer and autumn. In non-breeding season, it is either alone or in race *flavipectus*'s case, occasionally in flocks of up to 15 individuals. It has been seen in mixed-species foraging flocks which include other tits, leaf-warblers and Goldcrests (*Regulus regulus*). It forages at all levels in trees and usually in dense foliage, frequently in canopy and undergrowth, and on the ground. It is a very active bird, with fairly quick or rapid movements, climbing up straight stems and reeds easily, usually accompanied by flicking of its tail and wings. It can also be elusive, spending long periods sitting quietly in a bush or within a reedbed. It gleans food items from substrate, and breaks open the stems of plants (e.g. *umbellifers*) to reach hibernating larvae. It will occasionally pursue insects in flight.

Breeding: It is a medium-sized to large, short-billed and fairly long-tailed tit with fluffy plumage. The nominate race has its entire head almost white or tinged gray with a narrow black eyestripe from lores to over ear-coverts, extending as broad blue-black band across nape and down the rear neck sides. The lower nape and upper center of mantle are white or white-gray, with the rest of upper parts being mostly pale gray (often some feathers tipped bluish-gray). The lower edge of the scapulars is whitish, the upper tail-coverts are blackish-blue, tipped white. The tail has the central feathers dark blue, tipped broadly white, and the outer three feather pairs mostly white. The upper wing blackish-blue, the median coverts narrowly fringed whitish at their tips, the greater and primary coverts are white or broadly tipped white, while the alula feathers are narrowly fringed white. The secondaries and primaries are dark gray, edged deep bluish and broadly tipped white (the white increasing along edges of the outer primaries). The tertials are dark blue, broadly tipped white, the upper tertial is mostly white. The chin, throat and under parts are almost entirely white, except for short and very narrow blackish line on center of belly (often partly or fully concealed by white tips) and faint grayish tinge on the flanks. The axillaries and under wing-coverts are white. In worn plumage, grayer feather bases sometimes visible on the face and throat, the white fringes and tips of the flight-feathers and tail feathers are abraded, and the dark line on the belly center is more obvious. The iris is brown or dark brown. The bill is blackish to dark gray and the legs are gray to grayish or slate-blue.

Sexes are alike. Juveniles resemble the adults, but the crown is pale gray, the eyestripe is often narrower or indistinct, the nape patch is grayer and doesn't extend to the sides of the neck. The upper parts (including the wing-coverts) are slightly grayer and the tail feathers are pointed at the tips. The under parts are washed creamy or yellowish and it often lacks the dark line on the belly.

Breeding season lasts from April to June. They are monogamous and territorial. Pair formations start in late winter with displays by the male including a slow gliding flight from branch to branch, wing-shivering and calling, together with a lengthy period of courtship feeding. The nest is built by the female and is mostly a cup of dry grasses, moss, plant down, animal fur and wool, placed 2–4 m from ground in hole or cavity in tree. Sometimes it is placed among rocks or in hole in building, and occasionally in a pole (including those carrying urban streetlight). The clutch is 7–11 eggs and is incubated by female for 13–14 days. The chicks are fed by both parents with the fledging period lasting about 16 days.

Cool Facts: The azure tit not infrequently hybridizes with the blue tit in western Russia. The resulting birds are called Pleske's tit (*Cyanistes × pleskei*) and were once considered a distinct species.

Cyanus Group:

- *C. c. cyanus*. The nominate subspecies is found in south-central Belarus and western and central European Russia eastward to the central Urals.
- *C. c. hyperrhiphaeus*. It is found in the southwestern Urals, southwestern Siberia and northern Kazakhstan. It is as nominate but paler, the upper parts are light bluish-gray, the rump more whitish, and more extensively white on the outer tail, the greater coverts and tertials.
- *C. c. koktalensis*. It is found in the lowlands of southeastern Kazakhstan. It has a larger or thicker bill, and is intermediate in plumage between the nominate and *race hyperrhiphaeus*.
- *C. c. tianschanicus*. It is found in the mountains of southeastern Kazakhstan and adjacent Kyrgyzstan (central and eastern Tien Shan) eastward to northwestern China (northern and western Xinjiang). It is as the nominate, but the crown to nape is a pale gray (the hindcrown sometimes tinged lavender-gray), the upper parts are slightly a deeper gray. There is less white on the outer tail, greater coverts and tertials. The under parts are also less white, with the flanks grayish. It is variable in western Tien Shan, the upper parts are paler, more powder-blue (and birds from eastern Kazakhstan eastward to southeastern Russia intermediate between present race and *race yenisseeensis*). The juvenile has its crown to nape grayer and the underparts are more clearly washed pale yellow.
- *C. c. yenisseeensis*. It is found in south-central Siberia, the Altai Mountains and northern Mongolia eastward to northeastern China (Inner Mongolia, Heliongjiang) and the Russian Far East. It is similar to *race tianschanicus* but slightly paler, with its crown pale gray, the rest of the head off-white and the upper parts a paler gray and tinged bluish. The juvenile is sometimes with pale yellow wash on the breast and belly.

Flavipectus Group:

- *C. c. flavipectus*. It is found in southern Kyrgyzstan (eastern Alai Range and western Tien Shan) southward to northern Afghanistan. The male has slightly a grayer head and face, a whitish nuchal patch, a narrower band across the nape to neck sides. Its tail is similar to the nominate but the indigo-blue is more extensive and the white tips of central feathers is

smaller. The chin and throat are washed greyish, the breast to upper flanks is a bright lemon-yellow and there is a narrow blackish line on center of the lower breast and belly. The female is similar but has its crown grayer, the upper parts paler, and the yellow on the breast paler with the ventral line more grayish or absent.

- *C. c. berezowskii*. It is found in northeastern Qinghai, in north-central China. It is similar to *race flavipectus*, but paler on the head and face. It lacks the dark eye stripe and the band across the nape to neck sides is narrower. The upper parts are a dull gray, while the breast is a paler yellow.
- *C. c. carruthersi*. It is endemic to Kyrgyzstan and northern Tajikistan (Alai Mountains and western Pamirs). It is similar to *race flavipectus*, but its head to throat is grayer and almost uniform with the upper parts. It lacks the white nuchal patch, there is less white at the edges and tips of the tail, and the breast band is a slightly deeper yellow, with the belly tinged gray.

Common Name: Gray-crested Tit
Scientific Name: *Lophophanes dichrous*

Size: 4.5-4.9 inches (11.5-12.5 cm); **Wingspan:** 7-7.9 inches (18-20 cm)

Habitat: Asia; found in the Himalayan foothills and southern-central China.

It is found in forests. In the Himalayas, it prefers broad leaf forests, and mixed fir, hemlock, oak and rhododendron, pine, spruce and birch. In Myanmar, it is found in similar mixed fir forests, but with bamboo and hydrangea.

Status: Least Concern. **Global population:** 2,780,00 mature individuals with a stable population trend. It is uncommon in the western Himalayas and southern China, but fairly common in the eastern Himalayas. It is locally common in northern Myanmar. It occurs in several protected areas, including the Foping Panda Reserve, in China.



Diet: Mostly invertebrates and larvae.

It is seen usually in pairs or small groups; occasionally the pairs join mixed-species foraging flocks with other tits, particularly Coal Tits (*Periparus ater*), and leaf-warblers (*Phylloscopus*). It is generally shy, fairly quiet and unobtrusive. It forages in middle to lower levels of forest trees, also in undergrowth and shrub layers. It has been seen on the

ground, especially in winter, collecting food items beneath dwarf rhododendrons and birch scrub.

Breeding: It is a medium-sized, plain gray tit with long erect crest and buff under parts. The nominate race has pale buff lower forehead, becoming gray on the upper forehead and a deeper gray on crown and crest. Its upper parts, including upper wing-coverts are mostly an uniform plain gray, tinged buff, except for the dark gray upper edge of the mantle. The tail is a darker, brownish-gray, broadly fringed paler or buff-gray. The alula, primary coverts and flight-feathers are blackish, finely fringed paler. The lores, cheek and

ear-coverts are a pale buff, finely tipped gray (creating a mottled effect) while the rear and lower edges of ear-coverts are grayer. There is a fairly broad whitish submoustachial stripe and a buff-white half-collar. The chin and throat are grayish-buff or grayish-brown. The under parts are a dull orange-buff, sometimes tinged warmer brown, turning whiter on the belly and vent. In worn plumage, the upper parts are slightly darker gray and the underparts are paler buff. The iris is variably brownish-orange to crimson. The bill is a dark gray to black. The legs are a dark gray to bluish-gray. Sexes are alike. The juvenile is similar to the adult, but its crest is shorter. The crest and upper parts are slightly darker, the rump is tinged buff, the cheeks, ear-coverts and throat paler and less extensively buff-brown.

Breeding season occurs from April to at least June. The nest is a pad or small platform of moss, animal fur or hair and feathers, and is placed 3–7 m from ground in hole or cavity in tree trunk. It is often excavated by the nesting pair. A clutch 4–5 eggs is laid and the chicks are fed by both parents.

Cool Facts: The 4 subspecies races have slight variations in appearance.

- *L. d. kangrae*. It is found in the northwestern Himalayas (Jammu and Kashmir E to Kumaon). It is as the nominate, but the upper parts are slightly paler gray, the face is heavily flecked grayer and the submoustachial is paler and indistinct. The neck sides are slightly paler, the chin and throat are a grayish-buff (sometimes darker gray on lower throat) and contrasting with a dull rufous or cinnamon-buff wash on rest of the underparts.
- *L. d. dichrous*. The nominate subspecies is endemic to the coniferous forests of western Nepal to Arunachal Pradesh and southern Tibet.
- *L. d. dichroides*. This subspecies is found in central China (East and South Qinghai, South Gansu and South Shaanxi southward to northern Sichuan). It is similar to *race wellsi*, but its crown, crest and nape are paler than the dark gray upper parts, and the under parts are almost uniformly washed cinnamon-buff. It is also paler on the throat and breast and heavier on the flanks.
- *L. d. wellsi*. It is found in southern China (eastern Xizang eastward to northern Sichuan and western and northern Yunnan) and northeastern Myanmar. *Race wellsi* has upper parts slightly darker gray than the nominate. It is generally paler below. The chin and throat to breast and belly are a dull pale buff (with no contrast between throat and breast). It is variably rich cinnamon to pale cinnamon-buff on the belly side, flanks and vent.

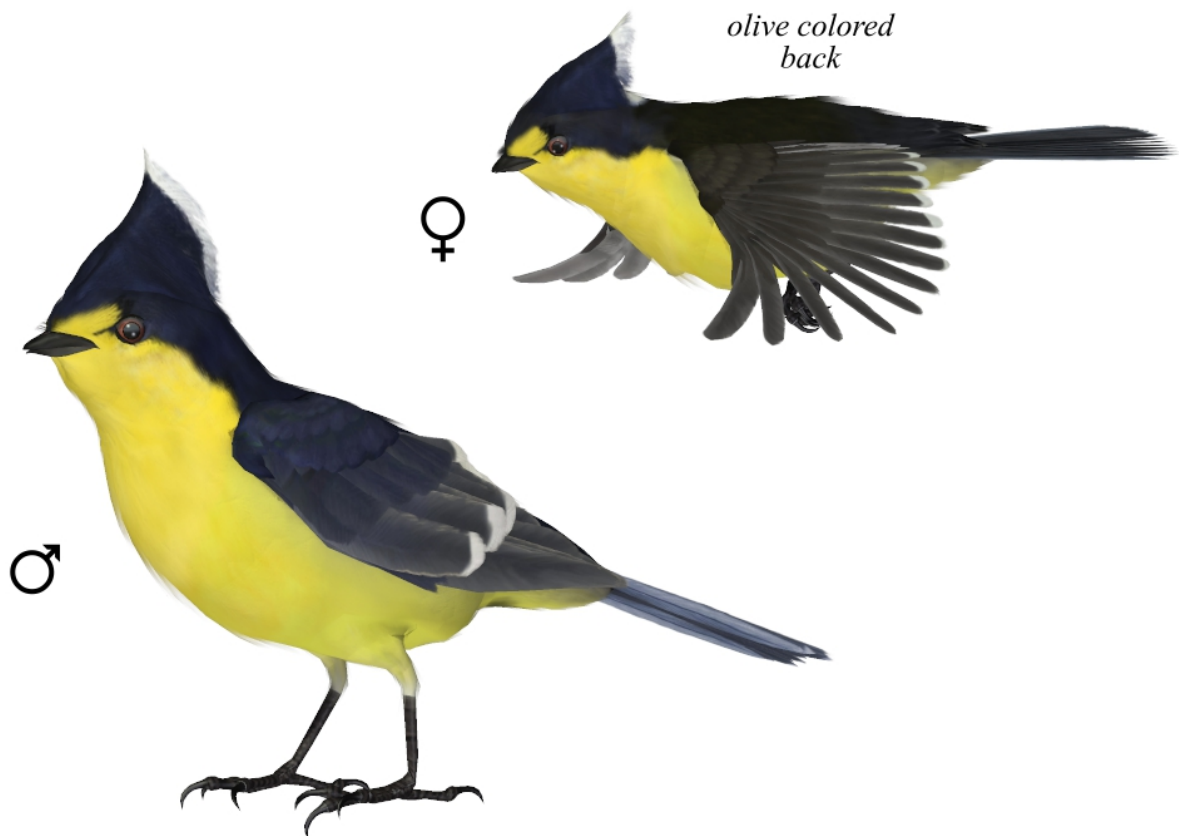
Common Name: Yellow Tit
Scientific Name: *Machlolophus holsti*

Size: 4.9-5.1 inches (12.5-13 cm); **Wingspan:** 7-7.9 inches (18-20 cm)

Habitat: Asia; this tit is endemic to Taiwan.

It breeds in temperate primary broad leaf forests, occasionally in mixed and secondary woodlands, usually at 1000–2500 m. In non-breeding season more often along forest edges and occasionally edges of human settlements; recorded down to 700 m.

Status: Near Threatened. **Global population:** 16,800 mature individuals with a declining population trend. It is considered uncommon or rare with most sightings occurring in the southern and western mountains. It has declined as a result of large-scale destruction of broad leaf forests. It does not adapt well to more marginal habitats, where meets competition from the Green-backed Tit (*P. monticolus*). Is also illegally sought after by bird-trappers for the caged bird trade.



Diet: Small invertebrates and larvae, with nestlings apparently fed largely with caterpillars. It has been seen feeding on small fruits .

It usually occurs singly and in pairs. Occasionally, it joins mixed-species foraging flocks. It can be found foraging in the upper and canopy levels of forest trees and in the tops of shrubs in lower undergrowth.

Breeding: A small tit with long erect crest. The males forehead, crown and crest to sides of its nape are black, glossed bluish. There is a white nuchal patch extending upwards onto tips of longest crest feathers. The upper parts are black, glossed bluish-green. The tail is also black, broadly fringed blue (variably iridescent to bright pale blue), and all feathers are narrowly tipped white, with the outer web of outermost feather being mostly white. The upper wing is black, with the greater coverts being a dark gray or grayish-blue, narrowly tipped white. The tertials are broadly fringed iridescent blue and broadly tipped white, the secondaries and primaries are edged iridescent blue, narrow white tips on the secondaries. The lores to eye and cheek, ear-coverts and neck sides to the breast and belly are a deep yellow. There is a small blackish spot in front of eye, while the sides of the lower breast and flanks are paler or washed gray. The vent is a dull black with the under tail-coverts being a yellowish-white. The axillaries and under wing-coverts are whitish. The iris is brown or a deep reddish-brown, while the bill is black and the legs are a slate-gray to blue-gray.

The female is similar to male, but the forehead to crest is sooty black, glossed bluish. The crown sides and upper-parts to the rump are a dull olive-green. The blue fringes on tail duller or grayer, the median and greater upper wing-coverts are bluish-gray, tipped bright pale gray. The edges of the flight-feathers are slightly duller or grayer and it lacks the black on vent. The juvenile has its forehead to crown and crest are bluish-gray with tips of the crest whitish. The upper parts are duller blue and washed olive-green. The wing and tail are as the adult. The face is a pale creamy yellow with the under parts white or sometimes washed yellowish.

It breeds in April with nests being built mostly of dried leaves, bamboo, lichens, moss and feathers and placed up to 7 m above ground in hole or cavity in tree trunk. Nests are apparently reused in subsequent years, with new material added. There is a clutch 3–4 eggs.

Cool Facts: It is also known as the Taiwan yellow tit, or Formosan yellow tit. The yellow tit was formerly one of the many species in the genus *Parus* but was moved to *Machlolophus* after a molecular phylogenetic analysis published in 2013 showed that the members of the new genus formed a distinct clade.

Common Name: White-naped Tit
Scientific Name: *Machlolophus nuchalis*

Size: 4.7-5.1 inches (12-13 cm); **Wingspan:** 6.6-7 inches (6.8-7.9 cm)

Habitat: Asia; a patchy distribution in northwestern and southern peninsular India.

It inhabits lowland dry acacia thorn-scrub (usually dominated by *Acacia catechu* and *Acacia nilotica*), generally in stony or hilly areas. It is also found in dry deciduous forests with scrub, and enters adjacent orchards and gardens. In the southwest of its range, in Kerala, it formerly occurred mostly in moist deciduous forests.

Status: Vulnerable. **Global population:** 2,500-9,999 mature individuals with a declining population trend. It has declined considerably in both range and



numbers over last century. The distribution has probably always been patchy, but local declines and extinctions have exacerbated this tendency. In the northwestern part of range, sparse and sporadic in Kutch and north Gujarat, south and south-central Rajasthan. It has always rare in southern India, but even rarer now with no recent records from Andhra Pradesh and few from Karnataka and Tamil Nadu. In Rajasthan, 8 pairs found in Kumbhalgarh

Wildlife Sanctuary and adjacent areas in 2004. There is also an apparently healthy population at Sajjangarh Wildlife Sanctuary (Udaipur). It has been recorded in Anshi National Park (Karnataka) and on border of Mudumalai National Park (Tamil Nadu). Its habitat is now widely degraded and its range fragmented. Its decline due mainly to depletion and destruction of its habitat, largely through clearance for agriculture, fodder, human settlements and urban development, quarrying and gypsum-mining, and overgrazing. The cutting of trees for making charcoal has caused declines. At one site in Kutch, Acacia bushes were severely lopped (100 bushes/day) to meet local demand for disposable toothbrushes. Main conservation target is a strict protection of a network of patches of healthy habitat. This species is largely being replaced by the Great Tit (*P. major*) in areas of increasing urbanization.

Diet: Small invertebrates, principally spiders and larvae, and also some fruit (especially berries), and nectar.

It is usually found in pairs or in small family parties of up to five individuals; occasionally in mixed-species foraging flocks. It is fairly shy or wary. It forages at all levels in trees, but mainly in canopy. It can also be found in shrubs and sparse undergrowth.

Breeding: A medium-sized, strongly patterned, pied tit. The male has its forehead and upper lores to crown, nape and most of upper parts, including all wing-coverts, a glossy bluish-black. It has a large or prominent white patch on lower nape and upper mantle. The central tail feathers are black, narrowly tipped with white, the outer two pairs (and outer web and tip of next inner) are white. The flight feathers are black, but tertials are largely white (only centers at base black), the innermost secondary edged and tipped white, the rest of secondaries broadly white at bases, white increasing in extent onto primaries, all secondaries and primaries tipped white (narrowly on primaries). The cheek, ear-coverts and the sides of neck are white. The chin, throat (narrowly onto throat side) and breast are black or glossy bluish-black as a broad blackish ventral line extending to lower belly. The rest of underparts creamy, or slightly whiter on lower flanks. The axillaries and under wing-coverts are whitish. The iris is dark brown, the bill is black and the legs slate-gray. Female differs from male in having slightly duller and less glossy upper parts, the nuchal patch smaller, there is less white on tertials and bases of flight-feathers and white tips restricted to inner feathers, with cheeks and ear-coverts duller, chin yellowish-white, bib and ventral line sooty brown, rest of underparts yellowish. The juvenile is similar to the adult, but its head and upper parts sooty black and lacking gloss, nuchal patch pale creamy yellow, white on outer tail feathers duller or washed brownish, usually lacks white tips on inner rectrices (all tail feathers more pointed than adult's), has white tips on some (mostly inner) greater coverts, white otherwise restricted to edges of tertials and bases of flight-feathers (usually less on juvenile female), only inner primaries narrowly tipped white; chin to bib and ventral line sooty brown.

The breeding season in Rajasthan is during the monsoons, from May to August. The nest is a pad of fibre and hair placed inside a cavity typically on a tree. They choose cavities made by woodpeckers and coppersmith barbets.

Nests have been found in old trees of *Salvadora persica* and *Boswellia serrata*. The clutch size is not known but adults with three young have been observed. The female develops a brood-patch and it is not known if the male incubates. Both parents take part in care of the chicks. The chicks are fed mainly with non-hairy caterpillars, the parents may bring food as late as 2000 Hrs in the evening. It is said to be dependent on old woodpeckers nest holes, especially those made by yellow-crowned woodpeckers, which are used for nesting and roosting. Suggestions that the species might migrate from western to southern India have been made but have not found support and birds (including juveniles) have been seen in southern India during summer. Birds ringed in western India have been recaptured within a radius of 5 to 7 km. Breeding has not been studied in the southern population.

Cool Facts: It is the only strongly patterned, black-and-white tit in its range. This species was discovered in the Eastern Ghats near Nellore by T C Jerdon who received a specimen from a local hunter. A specimen was later obtained in 1863 from near Bangalore and for a long time the species was not observed anywhere in southern India.

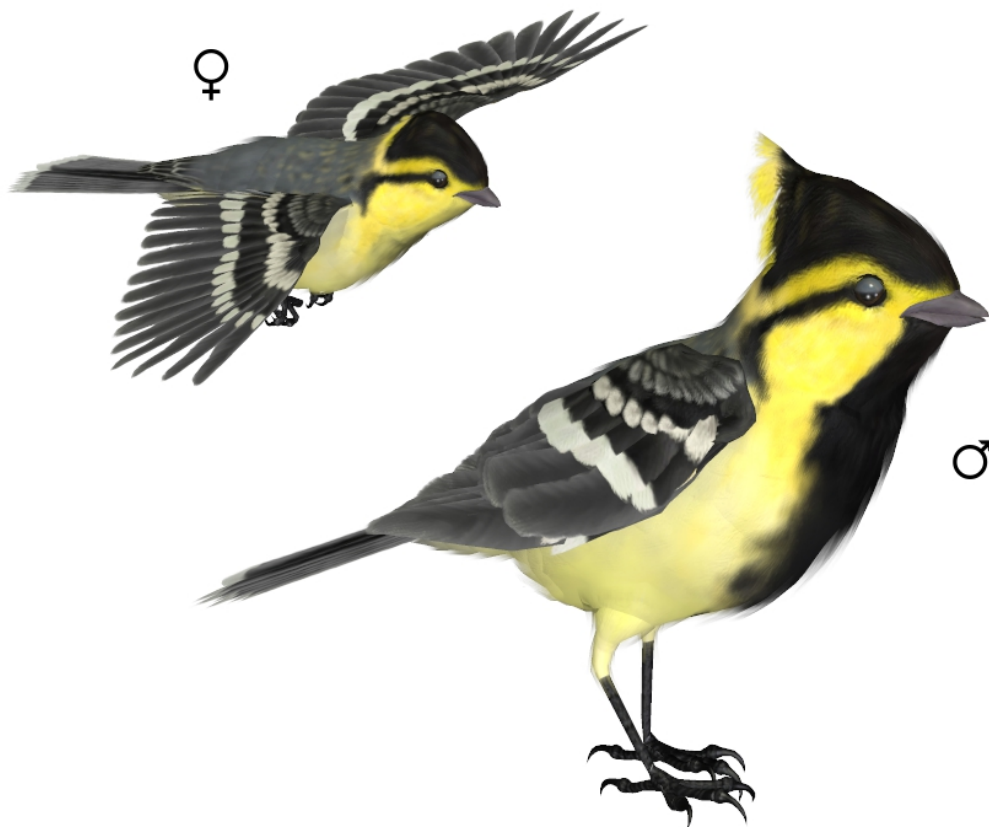
Common Name: Yellow-cheeked Tit
Scientific Name: *Machlolophus spilonotus*

Size: 5.3-6.1 inches (13.5-15.5 cm); **Wingspan:** 8.4-9.2 inches (21.3-23.5 cm)

Habitat: Asia; found in Bangladesh, Bhutan, China, Hong Kong, India, Laos, Burma, Nepal, Thailand, and Vietnam.

Its natural habitats are subtropical or tropical moist lowland forest and subtropical or tropical moist montane forest.

Status: Least Concern. **Global population:** 3,880,000 mature individuals with an increasing population trend. It is common to locally common to rare. It is scarce or rare in the Himalayas, but locally common in northeastern Indian hill states and Myanmar. It is common in northern Thailand; fairly common in northern Vietnam, and recently recorded as breeding in eastern Tonkin (Ha Giang province). In China, it is generally uncommon, but locally common in northwestern Fujian, northern Guangdong and southeastern Yunnan. Since 1988, the range in China has expanded southward into Hong Kong, where small population now resident.



Diet: Small invertebrates and larvae, including spiders. It also eats some flower buds and fruit (e.g. berries).

It is usually in pairs or small family parties. In non-breeding season, it can be seen in mixed-species foraging flocks with other tits and small babblers. It appears fairly tame and often confiding, and noisy. It actively forages in the middle and lower levels of forest trees. It can also be seen in shrubs and undergrowth.

Breeding: A medium-sized to large size tit with erect black crest, an eyestripe and yellow cheeks. The male nominate has its forehead and lores to the supercilium and nuchal spot colored yellow; the crown and crest to the sides of nape are black and the yellow of the nape extending upwards onto tips of longest crest feathers. There is a broad black eyestripe from eye to rear ear-coverts. Its upper parts are olive-green (greener in northeastern Myanmar), and are tinged yellow, with blackish centers on the mantle, back and scapular feathers. The rump is slightly greyish and the tail is black, fringed bluish-gray, with all feathers narrowly tipped white, outer web of outermost feather white. The upper wing-coverts are black, while the median and greater coverts are broadly tipped white and the alula is finely tipped white. The flight-feathers are black-gray, the tertials are narrowly fringed pale gray and broadly tipped white. The secondaries and primaries fringed blue-gray, the outer primaries broadly white at base; forming short panel on closed wing. The cheeks, ear-coverts and sides of neck are yellow. The chin, throat (including the sides of throat) to center of breast and continuing in irregular line to center of belly is black. It is slightly glossed blue on throat and breast. The sides of breast and belly are pale olive, tinged with yellow, while the flanks range from the same to grayish-olive. The under tail-coverts are dark gray and tipped white. The under wing-coverts are blackish and broadly tipped white. In worn plumage, the upper parts are duller or grayer and the dark centers of the mantle and scapulars larger. The fringes of flight-feathers are reduced and the white tips of the tail appear worn. The ventral line is slightly broader, while the rest of under parts are paler. The iris is brown, the bill is a dark grayish-horn to black. The legs appear blue-gray to gray.

Female differs from males in having their wingbars a yellowish-white, the fringes of flight-feathers more olive and the bib slightly duller and less full. Juveniles are like the adults, but the crown is duller, the crest is shorter, and the face and nuchal patch are paler. The upper parts also appear duller, becoming grayer on rump and on the upper tail-coverts. The whitish tail tips are poorly defined (or absent), the upper wing-coverts are similar to the adult but duller and tipped yellowish, while the secondaries are fringed gray and the tertials are fringed olive-gray. The cheeks and ear-coverts are pale yellow. The small dull brownish-black (paler on juvenile female) bib to the center of the breast and ventral line to center of the belly, the rest of the under parts are pale yellow, grayish wash on the flanks.

Breeding season occurs in late February through mid-August. The nest is a small platform or pad of moss, grass, bracken strips, leaves, animal fur, wool and feathers. It is sometimes supplemented with other locally available items such as flower petals and snakeskin, and placed up to 15 m above ground in hole in tree. It has been seen less frequently in a hole in the wall or on a rocky bank. The female has a clutch of 4–6 eggs.

Cool Facts: Racial variation fairly well defined between the four subspecies:

- *M. s. spilonotus*. The nominate subspecies is endemic to the eastern Himalayas from eastern Nepal eastward to northeastern India (Arunachal Pradesh and northern Assam), northern and western Myanmar and southwestern China (South Xizang).
- *M. s. subviridis*. This subspecies is found in northeastern India (Southern Assam southward to Manipur), Myanmar (except in the north, west and central portions), western, northwestern and northeastern Thailand and southern China (West Yunnan). *Race subviridis* is as the nominate, but slightly darker olive on the upper parts with dark centers showing like scales. The tips of the upper wing-coverts are white or washed yellowish, while the neck sides and under parts are slightly duller or paler. The flanks are washed grayish-olive. The female has more uniform and less scaled on the mantle, its flight-feather edges are light olive, and the bib and ventral stripe are olive-yellow or absent.
- *M. s. rex*. It is found in southern and southeastern China (South Sichuan and south and east Yunnan eastward to Guangdong, Fujian and South Zhejiang, including Hong Kong), northern Laos and northwestern Vietnam. *Race rex* is as the nominate, but in the male, it has yellow that on the head is richer; the eyestripe is broader and blacker, the upper parts are bluish-gray and broadly streaked blackish. There is more extensive black below (reaching to the sides of neck, the entire breast and broadly to center of the upper belly). The flanks are gray and the under tail-coverts whiter. The female is similar to male but the crown is duller, the upper parts are olive-gray and diffusely streaked darker. The bib and ventral stripe are olive-gray and often, little different from the rest of the under parts.
- *M. s. basileus*. This subspecies is endemic to southern Laos and south-central Vietnam (Annam). *Race basileus* is an intermediate between the previous two races, but the mantle is with a variable olive tinge, and it lacks the black on the neck sides. The yellow of the face merges with paler or duller yellow on the sides of the breast. The belly is whitish and the flanks grayish-olive. The female is similar to that of race *rex* but yellower and less gray.

Common Name: White-winged Black Tit
Scientific Name: *Melaniparus leucomelas*

Size: 5.9-6.3 inches (15-16 cm); **Wingspan:** 9-9.5 inches (23-24.3 cm)

Habitat: Africa; the nominate species is found in southeastern Sudan, northern Eritrea and central and south-central Ethiopia. The *insignis* subspecies is endemic to southern Gabon and the southern Congo eastward to eastern Democratic Republic of the Congo, southwestern Uganda, western Rwanda, northern Burundi and northwestern and central Tanzania, southward to Angola, Zambia and Malawi.

In Ethiopia, it is found in dry podocarpus forests of juniper and olive in the highlands and in the lower lying subtropical riverine forests and acacia thornbush savanna. In central Africa, it is principally found in grassland savanna with acacia thornbush, and occasionally in miombo or secondary brachystegia woodlands. In Malawi, it is also found in riparian scrub and montane grassland with scattered trees. It has been seen on the edges and clearings in light miombo woodland and edges of acacia savanna. In coastal Angola, it occurs in mist-belt woodland below the escarpment.



Status: Least Concern. **Global population:** 8,360,000 mature individuals with a stable population trend. It is generally common or locally common throughout its range.

Diet: Food includes small invertebrates and larvae, also seeds and some fruit, in particular custard-apple fruit (*Annona*).

They are usually seen in pairs or in small groups (probably family parties) of up to six individuals. They can also be found in fast-moving mixed-species foraging flocks containing small warblers and African Spotted Creepers (*Salpornis salvadori*). They actively and diligently forage in interior of tall trees, preferring to search the trunks rather than foliage. They are often seen clinging

sideways or hanging upside-down, while they probe crevices in the bark and branches. They occasionally pursue insects in flight.

Breeding: It is a large, glossy black tit with dark eyes and large white patch on wing-coverts. The male (of the nominate race) has its entire body and tail black. In fresh plumage, the crown to upper tail-coverts are glossed bluish or bluish-purple, slight gloss on the side of neck to belly, less visible on the flanks and under tail-coverts. It sometimes has a short and ragged crest on the hind crown. The fringes of all tail feathers glossed bluish-black, faint narrow pale edge on the outermost. The lesser upper wing-coverts are black, while the median and greater coverts are a contrasting white (both have concealed black bases) except for blackish outermost greater coverts. The alula and primary coverts black, finely fringed or tipped white. The flight-feathers are blackish-brown, fringes of upper tertials are glossy bluish, with white on the lowest tertial. The secondaries are broadly fringed white (forming broad white panel on the closed wing). The primaries are narrowly fringed white or whitish; the axillaries black and the under wing-coverts black with white tips. In worn plumage everything is duller overall, the white in wing duller and abraded, and darker centers of the greater coverts are visible. The iris is dark gray or brown. The bill black and the legs are dark brown to bluish-gray or black.

Breeding season can last from March to December, possibly throughout the entire year. The White-winged Black tit is monogamous and a solitary breeder. Its nest is a pad or small platform of grass and lichens, placed up to 4 m above ground in hole or cavity in tree trunk. Holes in walls of buildings occasionally are utilized. The female has a clutch of 3–5 eggs. The incubation is performed by both sexes, and the young fledge at about 26 days.

Cool Facts: It is also referred as the dark-eyed Black Tit.

There are two races:

- *M. l. leucomelas*. First reported by Rüppell in 1840. The nominate subspecies is found in Ethiopia, Eritrea, Sudan and South Sudan.
- *M. l. insignis*. First reported by Cabanis in 1880. This subspecies is found from the African equator to southern subtropics. Race *insignis* differs from the nominate in having the gloss on body plumage a bluish to bottle-green, the tail feathers (except central pair) often with very narrow whitish fringe or tip, and the under wing-coverts are more extensively white.

Common Name: Acacia Tit
Scientific Name: *Melaniparus thruppi*

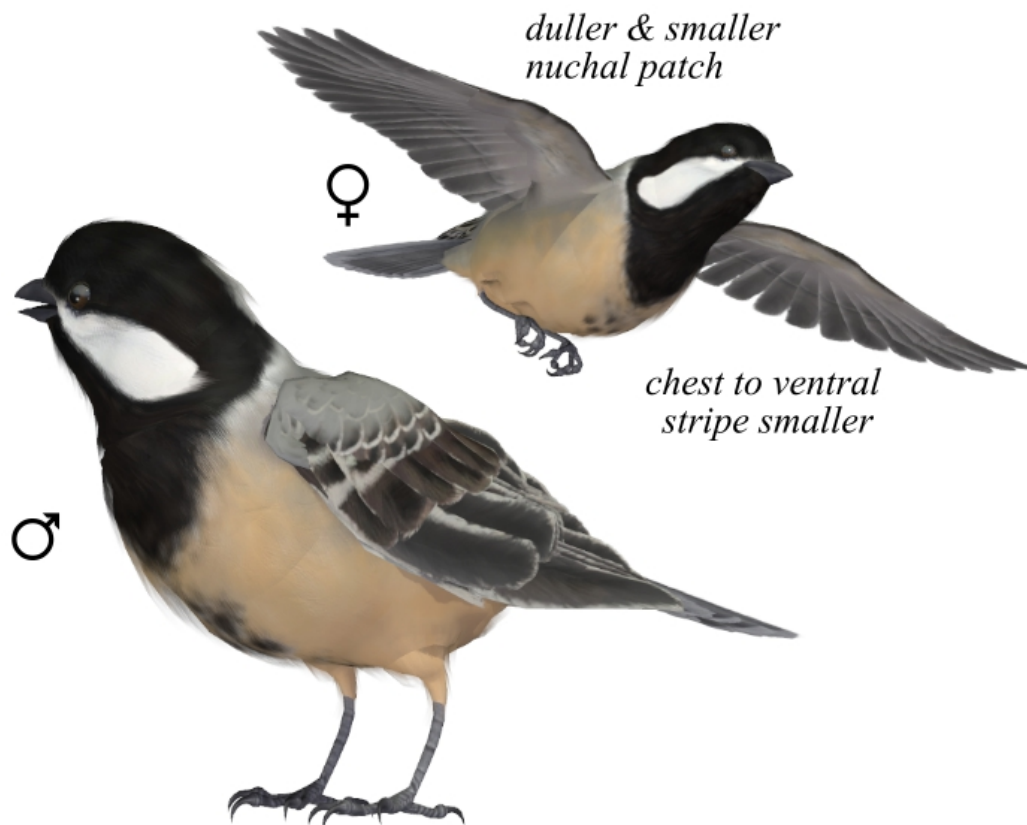
Size: 4.5-4.7 inches (11.5-12 cm); **Wingspan:** 6.7-7.4 inches (17-19 cm)

Habitat: Africa; The acacia tit is found from Ethiopia and Somalia southward to northeastern Tanzania.

Status: Least Concern. **Global population:** 1,710,000 mature individuals with a stable population trend. It is uncommon to locally common within its range.

Diet: It's diet is small invertebrates, principally wasps, beetles and caterpillars.

It is found usually in pairs or in small to medium-sized groups of family parties. It is often seen in mixed-species foraging flocks. It appears to forage mostly in the upper levels of trees, inspecting the bark and branches, gleaning insects.



Breeding: A small gray tit with large white face patch and black cap, bib and ventral stripe. The nominate race male has its forehead and upper lores blackish in color, tipped buff. The crown and crown sides (to below eye), the nape and sides of neck are black. In "fresh" plumage it is slightly glossed bluish. There is a small off-white patch on lower nape. The upper parts are gray, washed with a slightly buff color. The longest upper tail-coverts are tipped blackish. The tail is black, with all feathers except central pair narrowly tipped white, broadest on the outermost. The upper wing-coverts are sooty black, fringed and more broadly tipped with white. The alula and primary

coverts are black, finely fringed and tipped white as well. The flight-feathers are black, while the tertials are fringed whitish on the outer edges. The secondaries and primaries finely fringed whitish. The cheek and ear-coverts are white while the chin, throat and center of the upper breast is black. The bib continues as narrow black line to vent (it may show irregular white tips on throat, upper breast and ventral line). There is a narrow white border to the black on the breast and upper belly. The sides of the lower breast and belly pale buff (sometimes tinged pinkish) to the grayish, under tail-coverts which are fringed whitish. The axillaries are pale gray, and the under wing-coverts are off-white. In worn plumage, the forehead, crown and nape are duller, the upper parts a duller gray, with less white at the tips of tail. The fringes of wing feathers are abraded. The iris is brown to reddish-brown. The bill is dark slate or black and the legs are bluish-gray to black.

The female is like male, but slightly duller and there is less extensive black on chin to breast. Juveniles resemble the adults, with the lower forehead being pale buff, the crown to nape is sooty brown, and the upper parts are tinged duller brown. The tail is a darker brown without the white at tips, while the wings are dark sooty brown; the median and greater coverts are with broad off-white tips. The edges of the greater coverts are narrower than on adult, the chin to center of the upper breast is sooty brown and the ventral line is usually absent. The rest of the under parts are duller. The first-years are separable from adult by mixture of old and new wing-coverts and flight-feathers.

Breeding season from February to June. It is very territorial. The nest is usually placed 3–7 m from ground in hole of a dead tree. The egg clutch is usually 2 eggs. Little else is currently known about nesting behavior.

Cool Facts: It is the smallest of the gray *Melaniparus* tits of Africa and sometimes known as the Somali or Northern Grey Tit. This tit was formerly one of the many species in the genus *Parus* but was moved to *Melaniparus* after a molecular phylogenetic analysis published in 2013 showed that the members of the new genus formed a distinct clade. It forms a super species with the Southern Grey Tit and probably also the Miombo and Ashy Tits. All of these species have been treated as conspecific with the palearctic Great Tit, but they are not now thought to be closely related to that species.

There are two currently recognized subspecies, they are:

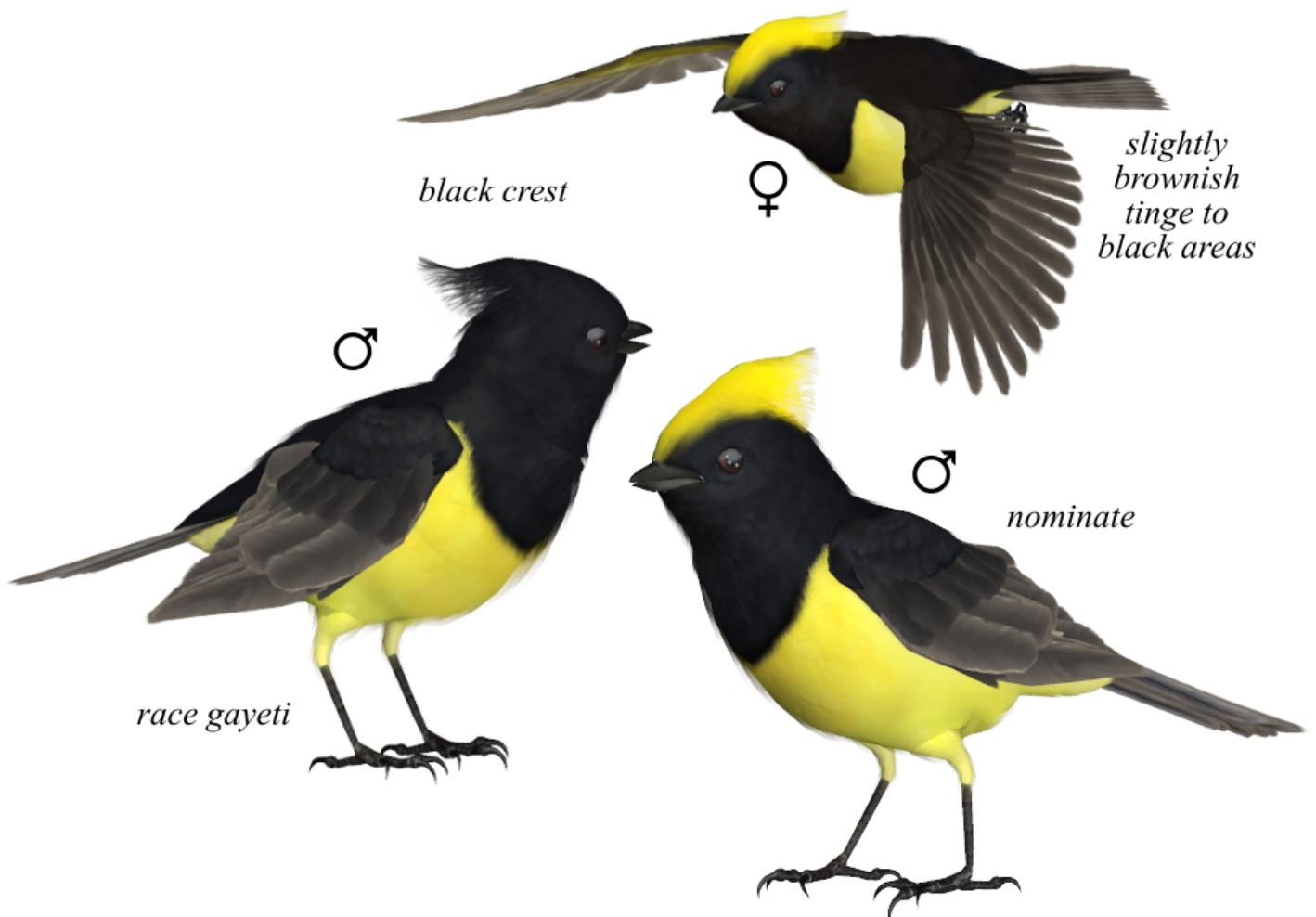
- *M. t. thruppi*. First reported by Shelley in 1885. The nominate subspecies is found in Ethiopia and Somalia.
- *M. t. barakae*. First reported by Jackson in 1899. It is found in southwestern Somalia to Kenya, Uganda and northeastern Tanzania. Race *barakae* is similar to the nominate, but the upper parts are slightly paler, the nuchal spot smaller or absent, the breast sides and border of the ventral line is broader and whiter. The flanks are a pale gray with faint buff tinge.

Common Name: Sultan Tit
Scientific Name: *Melanochlora sultanea*

Size: 7.9-8.2 inches (20-21 cm); **Wingspan:** 12-12.7 inches (30.5-32.5 cm)

Habitat: Asia; it is found from Central Nepal into the eastern Himalayas extending into Myanmar, northern Thailand and southern and eastern China. It is also found further south in Thailand, the Malay Peninsula Hainan, Laos and Vietnam.

In India, this species occurs in the lower ranges of the Himalayas from Nepal to the head of the Assam valley, the Khasi hills, Cachar, Manipur, the Kakhyen hills east of Bhamo, Arrakan, the Pegu hills, Karennee, and Tenasserim. This species does not appear to be found above 4000 feet of elevation. It extends down the Malay peninsula..



It is found on the edges of lowland and submontane deciduous, mixed deciduous and evergreen forests. It can also be found in light forests with bamboo, secondary growth, scrub and edges of cultivation. It breeds mostly below 1220 m in south-central China, but occurs up to 1370 m in Nepal, 1900

m in Sikkim, 1600 m in Arunachal Pradesh, at 200–2000 m in Bhutan, to 1680 m in N Myanmar, 1000 m in Thailand and 1220 m in Malay Peninsula (but to 1500 m in the Cameron Highlands); in Central Vietnam, it is rarely seen below 200 m and frequently at 1400 m.

Status: Least Concern. **Global population:** 6,310,000 Mature individuals with a declining population trend. It is widely distributed within suitable habitats throughout its large range.

Diet: Small invertebrates and larvae, principally grasshoppers and crickets, mantises and spiders. It also feeds on some fruit, mainly berries, as well as seeds.

It is usually seen in pairs and in family groups (up to twelve individuals). It will forage with mixed-species flocks (sibias and other small babblers). It forages usually in foliage of upper and canopy levels of trees, when it is inconspicuous. It does perch in the open on tops of trees, and occasionally in middle levels or tops of taller undergrowth and bamboo. It is active and somewhat acrobatic in foraging motions, but rather more lethargic than other tits, and movements can appear rather stiff. It flits between branches, and is agile when in flight through forest. In open areas, the flight fairly fast and bounding. It gleans items from under the bark. It also hovers briefly on outside of foliage, and occasionally catches insects in flight.

Breeding: The largest member of the tit family. It is strikingly black and yellow, with long bright yellow (or black) floppy crest and a long and slightly graduated tail. The male of the nominate race has its forehead, crown and crest bright sulphur-yellow. The rest of head, upper-parts, including the wing and tail, and chin, throat and breast are a glossy greenish black. Some individuals have an outer tail feathers narrowly tipped whitish. The under-parts below breast, including the auxiliaries and under-wing coverts are bright yellow. The iris brown to reddish brown and the bill is black or bluish slate-gray. The legs are blue-gray, sometimes tinged greenish.

The female is much like male, but slightly duller or sooty brown, and glossed greenish. The bib is often brownish-black. The juvenile is as female but lacking the gloss, has a shorter crest and more rounded, narrow pale yellow or whitish tips on greater coverts and occasionally primary-coverts. The under-parts are a duller yellow. The young male may show a bluish gloss on upper-parts from early age.

Breeding season goes from March to July. Nests are composed mostly of grass, green moss, plant down and fibers, leaves and animal hair. They are usually placed up to 15 m above the ground in hole, crevice or cavity in tree. The clutch is 5–7 eggs.

Cool Facts: They show an unusual behaviour of panicking in captivity when they encounter unusual noise or other species. Unlike other Paridae, they have their nostrils exposed and not covered by feathers.

Races differ little in appearance:

- *M. s. seorsa*. It is found in northern Indochina (southward to central Laos) and southeastern China (Guangxi, Fujian). It is similar to the nominate, but the yellow areas of plumage are slightly paler, and it may have black shaft-streaks in crest.
- *M. s. sultanea*. First reported by Hodgson in 1837. The nominate subspecies is found in the eastern Himalayas from central Nepal to northeastern India (Arunachal Pradesh southward to Manipur and Mizoram), Myanmar, northern Thailand and southern China (western and southern Yunnan). This intergrades with the race *flavocristata*.
- *M. s. flavocristata*. First reported by Lafresnaye in 1837. It is found in central and southern Thailand, Malay Peninsula and southeastern China (Hainan). It is possibly also found in Sumatra. It is as the nominate but the crest is shorter. Juveniles has dark shaft-streaks in crest and occasionally white tips on tertials and secondaries;
- *M. s. gayeti*. First reported by Delacour & Jabouille in 1925. The “Black-crested” Sultan Tit is endemic to SC Vietnam (C Annam) and apparently S Laos. is distinctive, has forehead, crown and crest black (not yellow), black upperparts only lightly glossed bluish, female browner and with generally duller greenish gloss.

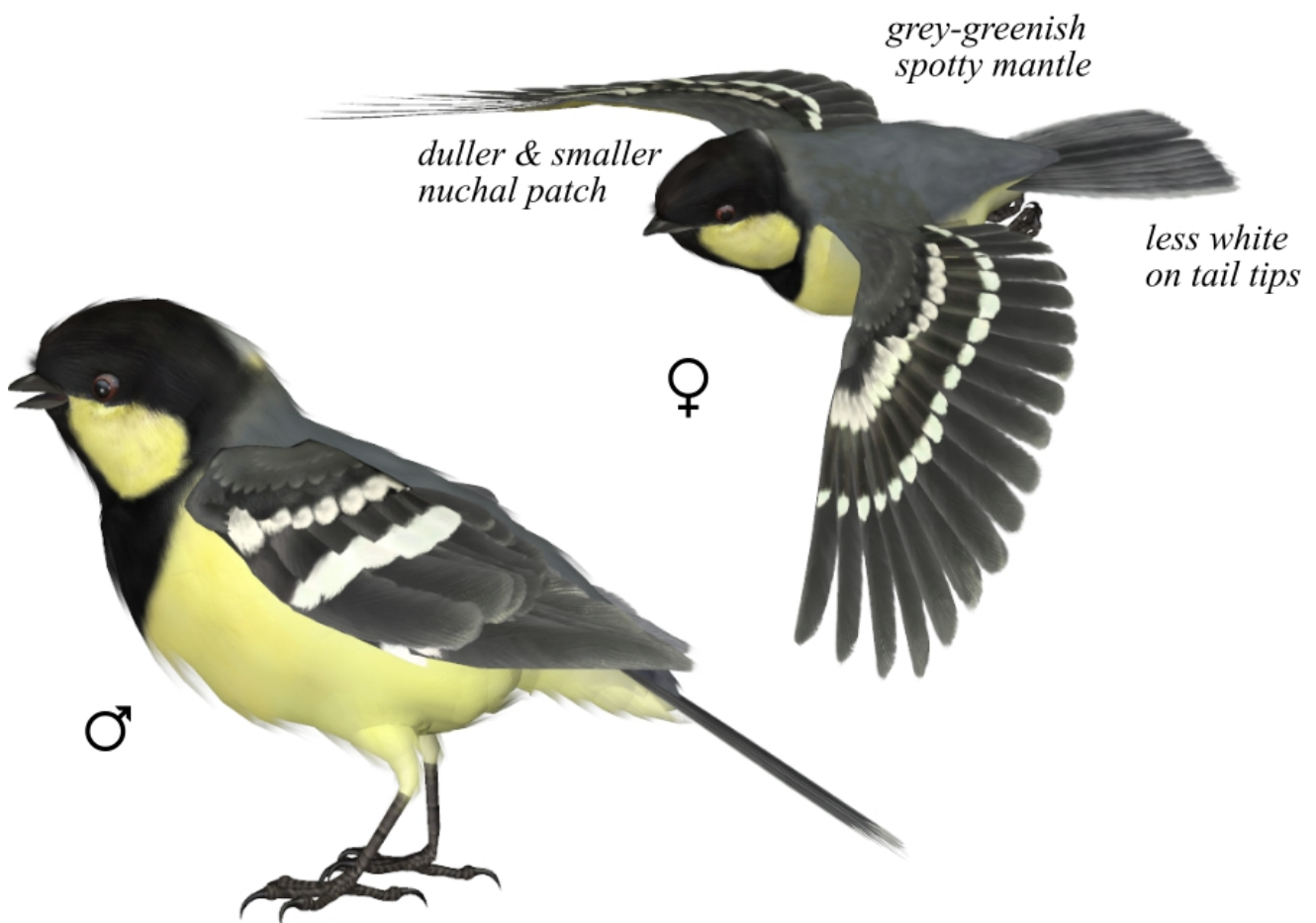
Common Name: Elegant Tit
Scientific Name: *Periparus elegans*

Size: 4.5-4.7 inches (11.5-12 cm); **Wingspan:** 7-7.7 inches (18-19.5 cm)

Habitat: Asia and Oceania; endemic to the Philippines.

It prefers dense primary evergreen forests, including pine and moss forests. It also is found at the edges of secondary forest and scattered trees at edges of cultivation.

Status: Least Concern. **Global population:** 844,000 mature individuals with a stable population trend. It is considered common or fairly common and appears to be able to persist in suboptimal habitats.



Diet: Small invertebrates and larvae, seeds, some fruit.

It is usually found in pairs or in small groups of up to eight individuals. It may join mixed-species foraging flocks with *Phylloscopus* warblers, fantails or Velvet-fronted Nuthatches (*Sitta frontalis*). It actively forages in the middle to lower levels of forest trees and at canopy level in smaller trees and bushy shrubs.

Breeding: A small to medium-sized tit with mostly black-and-yellow plumage. The male in the nominate race has its forehead to crown (including crown sides to the eye) and nape black which is glossed bluish. There is a long pale yellow nuchal patch and the cheek, ear-coverts and sides of the neck are yellow. The mantle is blackish, broadly and irregularly streaked whitish. The scapulars are similar to the mantle but tipped yellowish-grey or white. The back and rump are light yellowish-gray and the upper-tail are coverts black. The tail is black, with all feathers broadly tipped white, outer feathers with white middle section of outer web (amount of white increasing outwards to outermost rectrix). The upper-wing is black, the median and greater wing-coverts are broadly tipped white, the alula is narrowly edged whitish, the tertials broadly tipped white and the secondaries and primaries finely tipped white (on outer webs only). The chin and throat (including the sides of the throat to below the cheeks) to the sides of the upper breast are black, forming a bib. The lower edge of which tipped pale yellow. The rest of under-parts are yellow, paler on under-tail coverts, and the rear flanks are tinged grayish. The axillaries and under-wing coverts are white, fringed pale yellow.

In worn plumage, the crown is less glossy, the upper-parts paler or whitish, with the pale fringes and tips of flight-feathers abraded. The bib is duller, as well. The iris is reddish-brown to dark brown. The bill black and bluish-gray at its base. The legs are pale blue-gray to dark bluish-slate.

The female is similar to male, but the crown slightly less glossy, the nuchal patch is smaller and duller yellow, the mantle and scapulars greenish-gray and broadly spotted brownish-black (or with occasional yellowish-white spots on mantle). The pale tips of the tail are smaller. The upper-wing coverts are duller and the white tips smaller. The flight-feathers are fringed olive-gray. The cheek to ear-coverts and the neck sides are paler and duller. The bib is slightly smaller and browner, and the under-parts are a paler yellow.

The juvenile male is similar to adult, but the crown is grayer, darker on the sides of the crown and on the upper nape and nape sides; the nuchal patch is smaller and dull yellowish-white. The upper-parts are greenish-gray, the scapular edges spotted darker, the lores and cheeks are dull yellow, becoming whiter on the ear-coverts. There is a short dark malar stripe and it lacks the dark bib. It has the under-parts a dingy yellow, the lower mandible pale yellowish. The juvenile female is similar, but the forehead and crown is grayish-brown, the nuchal patch is small or poorly defined. It usually has larger dark spots on scapulars, the wing bars are tinged yellowish with less white on tips of tertials. The face is a dull yellowish and it lacks the malar stripe.

Breeding season lasts from January to June. Nest building occurs in March and April and fledging in late April. Juveniles have been seen from March to November on Luzon, and April and October on Mindanao. Their nests include moss and twigs and are placed in a hole or in a hollow tree.

Cool Facts: The species was formerly included in the much larger genus *Parus* but was moved to *Pardaliparus* with the yellow-bellied tit and the Palawan tit when *Parus* was split into several resurrected genera following the publication of a detailed molecular phylogenetic analysis in 2013.

Subspecies races well marked. The proposed race *panayensis* (Panay) may merit recognition (tentatively it is included in the nominate, although bird taxa from Panay usually closest to Negros forms; further research required). Currently, nine subspecies are recognized.

- *P. e. elegans*. It is found in east-central and southern Luzon, Mindoro, Catanduanes and Panay.
- *P. e. edithae*. It is endemic to the extreme Northern Philippine Islands (Calayan, Camiguin Norte). It is as nominate but longer-billed, the mantle blacker with reduced white spots, the back and rump are greenish-gray. The cheeks, ear-coverts and nuchal spot are white. The under-parts are duller yellow
- *P. e. montigenus*. It is found on Northwest Luzon in Northern Philippines. It differs from the nominate in having nuchal patch longer (extending to upper mantle), the white spots on the mantle are smaller, the under-parts are a paler yellow. The female is more extensively greenish-gray (with fewer dark centers) on the upper-parts.
- *P. e. gilliardi*. It is found on the Bataan Peninsula in west-central Luzon. It is as nominate, but the male has a nuchal patch, cheeks, ear-coverts and under-parts in a deeper yellow, the upper-parts more broadly yellow (fringed blackish on the mantle and scapulars), with larger white tips on the wing-coverts, tertials and rectrices. The female very similar to the male and its bib is nearly as dark, but the mantle and back are tinged browner, the tips of the wing-coverts are tinged yellowish and the edges of the primaries are greenish-yellow.
- *P. e. albescens*. It is endemic to the central Philippines (Ticao, Masbate, Guimaras, Negros). This race has a large nuchal patch and the upper mantle is white, while the rest of the mantle and scapulars are broadly pale grayish-white. The back and rump are pale gray with a yellow tinge. It has larger white tips on the wing-coverts, tertials and secondaries. It has uniformly pale yellow under-parts. The female is similar but with yellowish spots on the upper-parts (on Negros, males may have yellow wash on spots on back and rump, and the female has crown paler, greater-covert fringes olive-green, smaller white tips of the wing-coverts and tertials. The flight-feathers are fringed yellowish-olive, and the bib is slightly paler, not so black).
- *P. e. visayanus*. It is found on Cebu, in SC Philippines and differs from the nominate in having a more heavily spotted back, with fewer spots on the wings, and dark greenish-gray flanks. The female is similar but grayer on the flanks.
- *P. e. mindanensis*. It is found in the eastern-central and southern Philippines (Samar, Leyte, Mindanao). It has a nuchal patch that is yellow, the mantle, back and scapulars are blackish, heavily tipped or washed yellow, back and rump olive-yellow, wing spots and tail spots edged yellow, flight-feathers edged yellow or olive-yellow. The female is similar but the cap is sooty brown and extends to the side of the mantle. The tips of the wing-coverts and rectrices are smaller, the flight-feathers fringed olive-green, the bib is dark olive-green and the under-parts are yellowish with olive-green wash.

- *P. e. suluensis*. It is endemic to the Sulu Archipelago (except Bongao). It is similar to *mindanensis* but has greenish upper-parts and gray-green scapulars, with reduced yellowish spots on the mantle (which are absent on the female). It has slightly deeper yellow under-parts as well.
- *P. e. bongaoensis*. It is endemic to Bongao Island in Western Sulu Archipelago. It is similar to *suluensis*, but the male has a mantle and back which are blacker, slightly fringed greenish. The white tips of the wing-coverts and rectrices are smaller and the flight-feathers are fringed greenish.

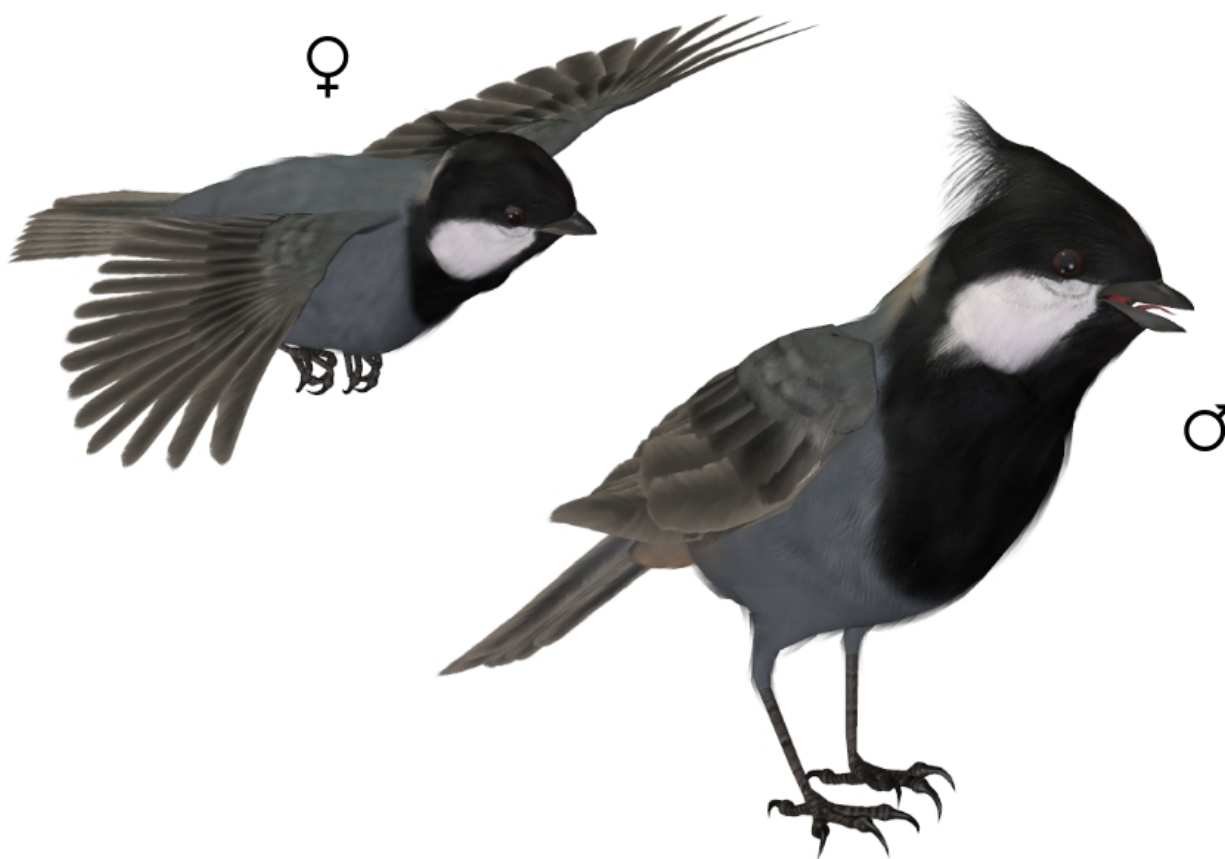
Common Name: Rufous-napped Tit

Scientific Name: *Periparus rufonuchalis*

Size: 5.1 inches (13 cm); **Wingspan:** 7 inches (7.9 cm)

Habitat: Eurasia; it is found in southern Uzbekistan, Tajikistan and Kyrgyzstan, northwestern China (west Xinjiang), northwestern and eastern Afghanistan, western and northern Pakistan and eastward in the Himalayas to west-central Nepal (Kali Gandaki Gorge).

It is found in montane and submontane conifer forests, principally of spruce, fir, deodar and pine. In the west of its range (eastward to the northwestern Himalayas) it is most frequently found in junipers, and in the central Himalayas, it extends into spruce-oak, birch and rhododendrons. It occurs also in more open areas of scattered scrub and trees on the hillsides. In northwestern Pakistan, it is found in poplars, willows and the edges of cultivation (particularly mulberries and in hazel scrub).



Status: Least Concern. **Global population:** 2,700,000 Mature individuals with a stable population trend. It is common in northern India, fairly common in Nepal, and elsewhere in range locally common. It is uncommon in western China.

Diet: Its diet is mostly small invertebrates, seeds and berries. Nestlings feed entirely with insects and larvae.

They forages at all levels, from tops of trees to undergrowth, and frequently on ground. They use cracks in bark or branches as regular 'anvils' in which they place seeds and nuts, opening these by hammering them rapidly with the bill. They are not known to store food. They are usually solitary, but found in pairs during breeding season. They may join small mixed-species foraging flocks, often including Black-crested Tits (*P. melanolophus*).

Breeding: A medium-sized to large, dark tit with short peaked crest and bright white cheeks. The males forehead to crown and crest is black or slightly glossy blue-black, small whitish nuchal patch with lower edge buff. The cheek and ear-coverts are white. The upper-parts are dark gray, tinged lightly olive (the mantle is paler gray in eastern Afghanistan and northern Pakistan. The tail similar to upper-parts with all rectrices finely fringed paler or bluish-grey. The upper-wing coverts are dark gray, fringed with bluish-gray. The flight-feathers blackish-gray, finely fringed with bluish-gray. The chin and throat (including sides of throat) to breast and the upper belly are black, the side of lower breast, upper flanks and auxiliaries are rufous or light cinnamon (often visible at bend of wing) while the lower belly and lower flanks are gray. The under-tail coverts are light rufous to cinnamon (paler and more buff in northern Pakistan). The iris is brown, the bill black and the legs gray to black.

The female is very much like the male, but on average has less gloss on the crown and has duller, less extensive black on breast and upper belly. Juveniles are similar to adults, but the crowns and crests are duller or dark gray. Also the crest is shorter, the nape patch is dull whitish, the upper-parts are more clearly washed brownish-olive (but the tail and wings as adult), the cheeks are washed faintly buffish, the chin to breast is smudged blackish, and the rest of the underparts are dull gray-brown, with paler buff on the under-tail coverts.

Breeding season goes from April to July. They are monogamous. The breeding display by the male includes drooping and quivering of half-opened wings, hopping around female while emitting soft twittering notes. The nest built by both sexes, mostly of moss, animal hair or fur, wool and feathers, male adding material while female incubating, placed deep within hole or cavity low down (less than 1 m from ground) in tree trunk or stump, or in hole in wall, or frequently on ground in hole in steep bank, under stones or among roots of tree. The clutch is 4–6 eggs which is incubated by the female, The chicks are fed by both parents.

Cool Facts: It differs from the Rufous-vented Tit (*P. rubidiventris*) in its larger size, more extensive black bib (reaching to the upper belly) and the gray (not rufous) lower belly and from the Black-crested Tit (*P. melanolophus*) in having more uniform colored wings.

Common Name: Sombre Tit
Scientific Name: *Poecile lugubris*

Size: 4.8-5.9 inches (12.4-15 cm); **Wingspan:** 7.5-9 inches (19-23 cm)

Habitat: Eurasia; it is found in southeast Europe and southwest Asia.

It inhabits dry scrubland areas of scattered trees and bushes, including olive groves, wild plum orchards (as well as other fruit trees) and vineyards. It also is seen in parkland areas of open oak forests including scrub oak, beech, willows and poplars. It is also found in areas with conifers, particularly spruce and cedars. in areas of rocky limestone hills.

Status: Least Concern. **Global population:** 4,080,000 mature individuals with a stable population trend. It is generally uncommon to locally common. It is common and widespread in Greece and western Turkey (but less common inland), absent from Ionian islands except Corfu. It also breeds on Lesbos, Samos and Kythira. It is rare on Crete. In Iran, it is common in Zagros Mountains of the west and south. It is rare or sporadic throughout Caucasus, very scarce in Lebanon and locally common in northern Israel.



Diet: It prefers small invertebrates and larvae, including beetles, grasshoppers, bugs, flies, bees and wasps, ants, damselflies, lacewings), moths, spiders, woodlice and snails. It also feeds on seeds, mainly of the *Leguminosae* species.

In captivity, it frequently stores food. They are usually in pairs in breeding season; often in small groups in autumn and winter, and sometimes with mixed-species flocks (typically first-winter birds), occasionally solitary in winter. They are shy and unobtrusive, foraging in lower branches of trees and shrubs,

occasionally briefly on ground, but usually returns to bush or branches of tree with food items.

It is active but generally less acrobatic or agile than other tits. They climb tree trunks like a nuthatch, and occasionally pursues insects in flight in manner of flycatcher. Food items are held in their foot and hammered open with their bill. Seeds are often wedged in bark before being opened while seedheads, including those of herbs, torn open in manner of a finch.

Breeding: A larger, large-billed, gray-brown tit with blackish cap and bib. The male in the nominate race have their upper lores and crown to the nape a blackish-brown to dark sooty brown color. The lower lores, cheeks and ear-coverts are white, becoming buffish on the neck-sides. The upper-parts are mostly dull ash-brown, becoming slightly grayer on upper-tail coverts. The tail is gray-brown, tinged olive-gray with fine whitish fringes on the outermost feathers. The upper-wing coverts as upper-parts, but the greater coverts are fringed buffish or paler. The alula is dark gray to blackish and the flight-feathers dark gray, narrowly fringed pale greyish buff. The tertials are similar but more broadly fringed grayish to buffish white. The chin, lower cheeks and throat are sooty brown, forming a bib (with lower border poorly defined). The under-parts are whitish, washed buffish on breast and flanks (duller off-white and grayish on flanks when worn). The plumage is grayer above and whiter below in east of range. The iris is brown to dark brown and the bill is dark grey to blackish horn, with paler or greyish cutting edges of maxilla. The legs dark gray to bluish slate. This species differs from the willow Tit (*P. palustris*) mainly in a larger size, a more robust bill, a dull blackish-brown (not glossy black) cap, grayer-tinged brown upper-parts, and more black on bib and throat.

The female is very much like the male, but its crown varies from blackish brown (as male) to dark chocolate-brown, the bib is browner, the under-parts are duller or washed grayer. The juvenile is similar to female, but its crown is brown or dark gray-brown (as is its upper-parts), whitish cheeks washed buffish or brownish, greater coverts prominently tipped whitish, the bib is smaller and finely tipped greyish buff, underparts washed buffish or dingy, to off-white on under-tail.

Breeding season is from March to early August. It is monogamous and territorial, during breeding season, with most of its time being spent within 150 m of its nest, although territorial conflicts are rare. In courtship, the male feeds female, and its display includes wing-shivering and begging calls. The nest is built by female and is a cup of wool, plant material, bark strips, animal hair and feathers, placed up to 7 m from ground in hole in tree. The clutch is usually 5–7 white eggs with fine reddish-brown or purplish-red speckling, sometimes concentrated at larger end. Both sexes feed the chicks with the nestling period lasting 21–23 days. The young become fully independent after an additional 12 days.

Cool Facts: Sombre tits defend their nest from predatory ants (*Liometopum microcephalum*) in oaks in the Balkans by collecting those passing near nest

entrance and crushing them against bark (which apparently causes alarm pheromone to be released by ants, deterring others from entering hole).

While racial variations in the subspecies are moderate, there is considerable individual variation. Four subspecies recognized.

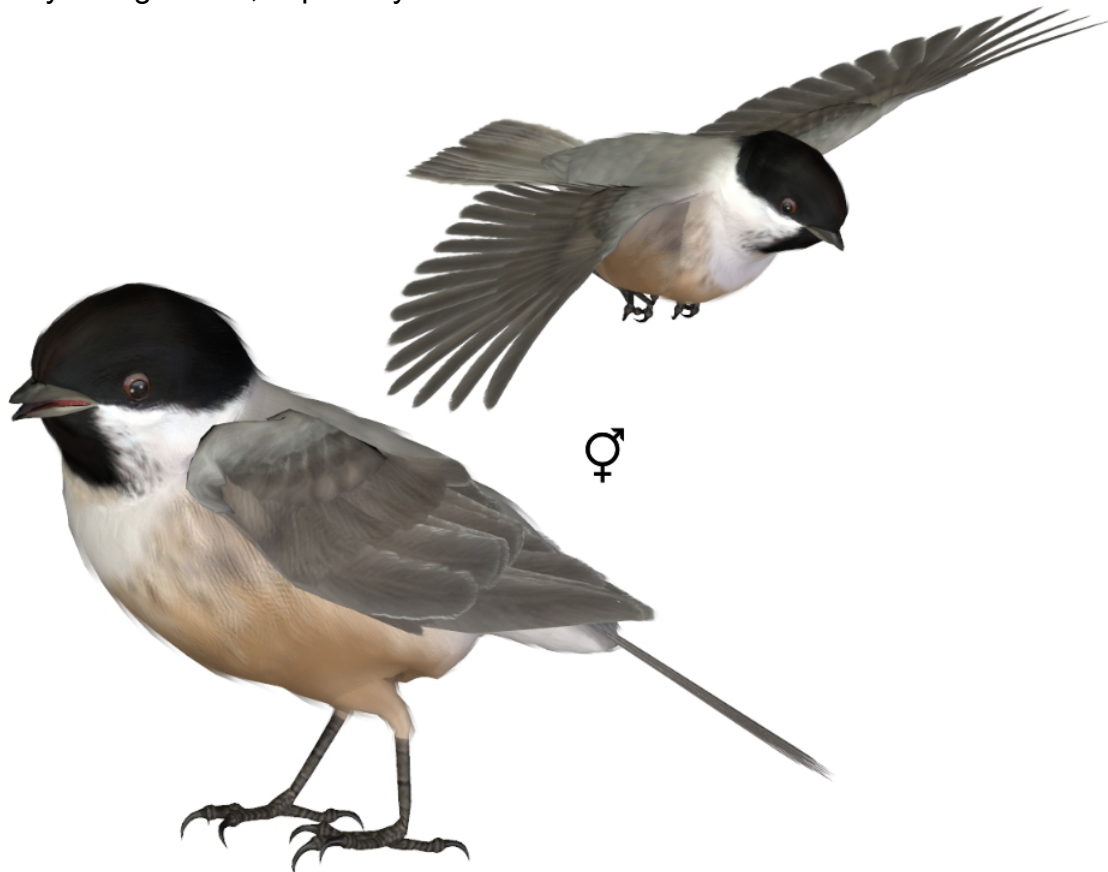
- *P. I. lugubris*. First reported by Temminck in 1820. The nominate species is found in extreme southwestern Slovenia and northwestern Croatia southward to Albania, and central and southern Romania southward to eastern Bulgaria and northern Greece, also Crete.
- *P. I. anatoliae*. First reported by unknown. This subspecies is found in southern Greece to Turkey, western Georgia, Armenia, northern Iraq and northwestern Iran. Race *anatoliae* is as the nominate, but the crown and bib are black (in the male) or blackish to sooty brown (in the female) and clearly defined at the ear, mantle and scapulars are dark olive-brown, under-parts are whiter, the flanks are washed cinnamon in fresh plumage.
- *P. I. dubius*. First reported by unknown. This subspecies is found in western Iran. Race *dubius* has a slightly longer and more slender bill than other races, the crown and bib are velvety black (or tinged brown on female), the upper-parts paler or sandy gray, and the under-parts are whitish with creamy wash.
- *P. I. kirmanensis*. First reported by unknown. This subspecies is found in southeastern Iran (Kerman). This race is poorly defined, but considered very similar to *dubius* with its upper-parts being slightly darker and browner.

Common Name: Marsh Tit
Scientific Name: *Poecile palustris*

Size: 4.3-4.7 inches (11-12 cm); **Wingspan:** 6.8-7.7 inches (17.5-19.5 cm)

Habitat: Eurasia; found throughout western Europe with a scattered range through eastern Europe. Also found in coastal China, Korea and Japan.

Its habitat is lowland to submontane and montane mature deciduous woodlands and forests with relatively high proportion of dead or rotting trees and open undergrowth. In southern England, the declining population strongly prefers woodland with a well-developed shrub cover. The trees it prefers are oak and beech. It is rarely seen in marshes, damp areas or urban areas. Outside breeding season, it can also be found in conifers, and in rural areas. It may visit gardens, especially those close to woodland.



Status: Least Concern. **Global population:** 10,000,000-20,999,999 mature individuals with a decreasing population trend. It is a fairly common bird, but often local or sporadic. This species has suffered a marked decrease in Britain, where it has declined in abundance by almost 75% since the 1960s and its range has contracted by almost 20%, despite continuing high breeding success and an apparent improvement in habitat quality. A potential problem for a highly resident species is that avoids flying far from cover— and this may be implicated in this decline, but it is also strongly suspected that factors damaging the shrub layer, such as overgrazing by deer, shading out by

canopy closure and managed clearance of shrub cover, may reduce suitability of woodland for the species. It is also declining in Sweden, where brood size has increased during the last decade (presumably in response).

Diet: Its diet is largely small invertebrates (flies, bug, stoneflies, caddisflies, bees and wasps, beetles, springtails, aphids, lacewings, moths, ants, mites, spiders, and small snails and slugs). Also, it eats much vegetable matter, including fruits of raspberry, crab apple, hawthorn, pear, cherry, mulberry and elderberry, and wide range of seeds, including those of coniferous and deciduous trees and wide variety of plant seeds.

It forages at all levels in trees and lower vegetation, but prefers middle to lower levels of trees and shrubs. It actively searches foliage and slender branches, and hangs from buds and cones. It has been seen vigorously stripping lichen and moss in search of insect prey, and pulling seeds from thistle-heads. In non-breeding season, it frequently forages on ground in fallen leaves and among dead plants, including on snow-covered ground where foraging actions of deer or wild pigs have exposed leaf litter. Seeds, berries and large caterpillars held by foot on perch and husk torn open or head removed by repeated blows of bill.

Breeding: Sexes are alike. A medium-sized, glossy black-capped, brown-backed tit with small blackish bib. The nominate race has its forehead, crown and crown-side (down to lower level of eye) to nape in deep black. The crown feathers are glossy with the upper-parts, including the upper-wing coverts, a dull buffish brown, sometimes tinged warmer brown on the rump and upper-tail coverts. The tail is gray-brown, fringed grayer, with the outer-most feather having a pale gray outer web. The alula and flight feathers are dark gray-brown, with the secondaries edged grayish on outer webs. The primaries edged off-white on outer webs. The lower lores, cheek and ear-coverts are white, sometimes tinged buffish at the rear of ear-coverts. The chin and upper throat are black, forming small bib, while the lower throat, breast and belly feathering is white. The breast sides, flanks and vent are pale grayish buff (tinged pinkish in fresh plumage). The iris is dark brown and the bill blackish, paler gray on the cutting edges of maxilla. The legs bluish to slate-gray.

The juvenile is similar to the adult, but has a sooty-black or brownish crown to nape lacking the gloss. The upper-parts are paler or grayer, the fringes of flight-feathers and tail are a warmer brown. The cheeks and ear-coverts are whiter and the bib smaller or partially obscured by white tips. The under-parts are whiter, with tinges of buff on flanks and vent.

Breeding season if from late March to June. They are for the most part, single-brooded and monogamous with pairs mating for life. The territory used for all breeding activities (pair formation dependent on male having established territory), occupied and defended throughout year (winter territory may be slightly larger in some parts of range). In non-breeding season, territory may be occupied by resident pair and 3–7 unrelated juveniles, which may pair up in spring and partition territory or establish adjacent one. The display consists

mostly of courtship-feeding of female by male, with increasing amount of wing-fluttering and begging calls by female.

The nest is built by female alone (but both sexes widen entrance hole), a cup or pad of moss, plant material, animal hair and feathers, placed up to 2-4 m above ground in hole in tree or stump. The clutch is usually 6–9 white eggs with pale brown, reddish-brown or purplish-red markings, concentrated at larger end. The incubation is performed by the female, and the male feeds her, for a period 13–17 days. The chicks are fed by both sexes, and the nestling period 16–21 days. The fledglings fed for further seven days after leaving nest, and disperse from family group 15 days after fledging.

Cool Facts: It differs from its close cousin, the Willow Tit (*P. montanus*), in being slightly smaller and more round-headed appearance. The glossy cap tapering to center of lower nape (not reaching the upper mantle). There is generally no pale wing panel (occasionally present on fresh-plumaged autumn individuals), and the centers of greater coverts, remiges and rectrices are browner (not grayish-black). The cheeks are duller, and the bib is slightly smaller and neater. It does hybridized with the Willow Tit (*P. montanus*) and Great Tit (*P. major*).

Races differ relatively little, mainly in size and plumage tones.

- *P. p. palustris*. First reported by Linnaeus in 1758. It is found in northern and central Europe from southern Scandinavia southward to northern Iberia, eastward to central Poland, the western Balkans and Greece.
- *P. p. dresseri*. First reported by Stejneger in 1886. It is found in central and southern England, Wales and western France. It is still present in the far south-east of Scotland but in small numbers. It is smallest and darkest, with warmer brown (less gray) upper-parts than the nominate, slightly duller creamy-white (or buff-washed) under-parts, and pale buffish-brown neck-sides, breast-sides, belly and flanks.
- *P. p. italicus*. First reported by Tschusi & Hellmayr in 1900. It is found in the French Alps, Italy and Sicily. It is an intermediate between nominate and *dresseri*, with slightly browner upper-parts and whiter under-parts.
- *P. p. stagnatilis*. First reported by C.L. Brehm in 1855. It is found in eastern Europe eastward to the southern Urals and northwestern Turkey. It is similar to the nominate, but has slightly paler buff upper-parts (sometimes pale fringes on tertials and inner secondaries), whiter on the sides of breast and flanks
- *P. p. kabardensis*. First reported by Buturlin in 1929. Its range is in Caucasus and northeastern Turkey. It is similar to nominate, but may have slightly longer tail, and paler or grayer upper-parts, whiter cheeks and ear-coverts, and buff on flanks restricted or absent.
- *P. p. brevirostris*. First reported by Taczanowski in 1872. Its range includes south-central and southeastern Siberia, northern Mongolia, northeastern China (northern and eastern Inner Mongolia, Heilongjiang, Jilin, Liaoning) and North Korea. It differs from nominate in having paler gray upper-parts, little or no buff on under-parts (but tinged rufous in east of its range), pale

fringes to flight-feathers sometimes forming slight panel on closed wing, pale edges on the outer tail feathers.

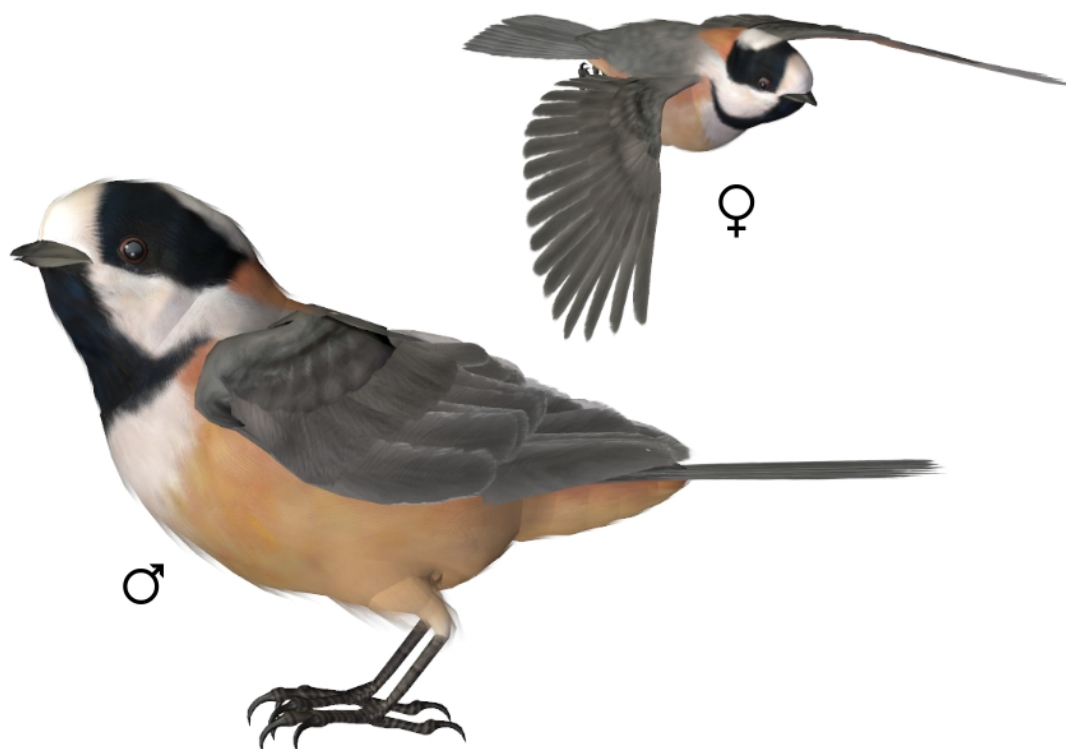
- *P. p. ernsti*. First reported by Yamashina in 1933. It is endemic to Sakhalin. It is similar to previous and nominate, but has paler ash-gray or lightly tinged brown upper-parts, larger or more prominent blackish bib.
- *P. p. hensoni*. First reported by Stejneger in 1892. It is endemic to South Kuril Island and Northern Japan (Hokkaido). It is similar to *ernsti*, but slightly paler above and below.
- *P. p. hellmayri*. First reported by Bianchi in 1903. It is found in eastern China (Hebei southward to Shandong and Jiangsu) and South Korea. It has darker or rather browner upper-parts (closer to buffish brown of nominate), smaller dark bib, and is extensively buffish below, becoming whiter in worn plumage.

Common Name: Varied Tit
Scientific Name: *Sittiparus varius*

Size: 4.7–5.5 inches (12–14 cm); **Wingspan:** 6.7-7.8 inches (17-20 cm)

Habitat: Asia; it occurs in the eastern Palearctic in Japan, Korea, and locally in northeastern China (southern Liaoning) and extreme southeastern Russia (southern Kurile Islands).

This tit prefers lowland conifer forests, particularly of yew (*Taxus*) in Kuril Island, and open deciduous and mixed forests in China. In Japan, it prefers mature deciduous, mixed and evergreen broadleaf forests, usually with dense undergrowth or shrub layer. It is also found in plantations mainly of cedar (*Cedrus*) and cypress (*Cupressus*, *Chamaecyparis*). It tends to avoid urban



areas or villages, but in Japan and Korea, it can be found in wooded areas around shrines and in well-wooded large gardens.

Status: Least Concern. **Global population:** 2,930,000 Mature individuals with a declining population trend. It is common or locally very common to abundant in southern Japan and Kuril Island. It is uncommon in northern Japan (Hokkaido and Northern Honshu), local on Taiwan, and rare in northeastern China. This species is one of the three most popular caged birds in Japan, and traditionally taken for use in fortune-telling. The effects of caged bird trade on wild populations is unknown.

Race *orii*, found on the Daitō Islands (Kitadaitōjima and Minami Daitōjima), was declared extinct in 1940.

Diet: Its diet is mostly comprised of small invertebrates (mostly caterpillars). It also eats seeds and nuts (principally of *Castanopsis cuspidata* and *Styrax japonica*) and berries (including those of yew).

It is a fairly shy and often elusive bird which is found usually alone or in pairs. In autumn and winter, it will form into small parties or join mixed-species flocks. It forages mostly in the upper canopy levels, by gleaning prey from among foliage. It also feeds also at lower levels, and in the undergrowth. It occasionally pursues insects in flight.

Breeding: A medium-sized, black-capped tit with gray upper-parts and chestnut under-parts. The male in the nominate race has a forehead buffish, crown (including crown-sides down to eye) and nape black, slightly glossy on crown, sometimes with a narrow yellowish-buff or whitish patch on the hindneck. The upper mantle is chestnut (forming narrow band), the rest of upper-parts, including upper-wing, are grayish blue. The flight-feathers are fringed narrowly paler gray. The tail is blackish, broadly fringed grayer on the edges. The lores, cheek and ear-coverts are pale buffish white to off-white, usually slightly whiter on sides of neck. The chin and throat to lower the neck sides are black (sometimes flecked with rufous tips). The center of the upper breast bib is whitish or light buff with the belly and vent being whitish buff. The flanks are rufous-chestnut and the under-tail coverts are light cinnamon. The iris is a very dark red to blackish cinnamon with the bill being dark brown or black. The legs are dark gray.

The female resembles the male but is slightly smaller on average, and is paler or more buffish on the breast-sides and flanks. Juvenile is a duller version of the adult with the crown to nape being paler or grayer with extensive white tips. The upper-parts are tinged gray-brown, the greater coverts are tipped pale buff to rufous-buff, the tertials and secondaries are fringed grayish olive. The lores, cheeks and the ear coverts are buffish or yellowish with the chin to the breast grayish. The under-parts mostly dull or dingy whitish with the sides of the breast and flanks less extensively rufous than on adult. The vent and under-tail coverts are gray.

Breeding season starts in early March through August. Nest building is mostly performed by the female, taking up to 15 days. The nest is built mostly of moss and plant fibers (in China), and placed up to 6 m from ground in natural hole, a cavity in tree or an old stump. The pair may excavate hole or utilize old hole of woodpecker. It has been known to use nestboxes but is infrequent. The Egg clutch is usually 6–7 eggs on Japanese mainland, but slightly fewer (on average, 4–6) on the islands.

The incubation is performed by the female, usually taking 12–14 days. The nestling period lasts 17–21 days and the young are dependent on adults for further 21 days. While in nest, young are generally fed more by female.

Cool Facts: Owston's tit (*Sittiparus owstoni*), the Iriomote tit (*Sittiparus olivaceus*) and the chestnut-bellied tit (*Sittiparus castaneiventris*) were formerly considered as subspecies of the varied tit, but were promoted to species status following the publication of a phylogenetic study in 2014.

There are six subspecies:

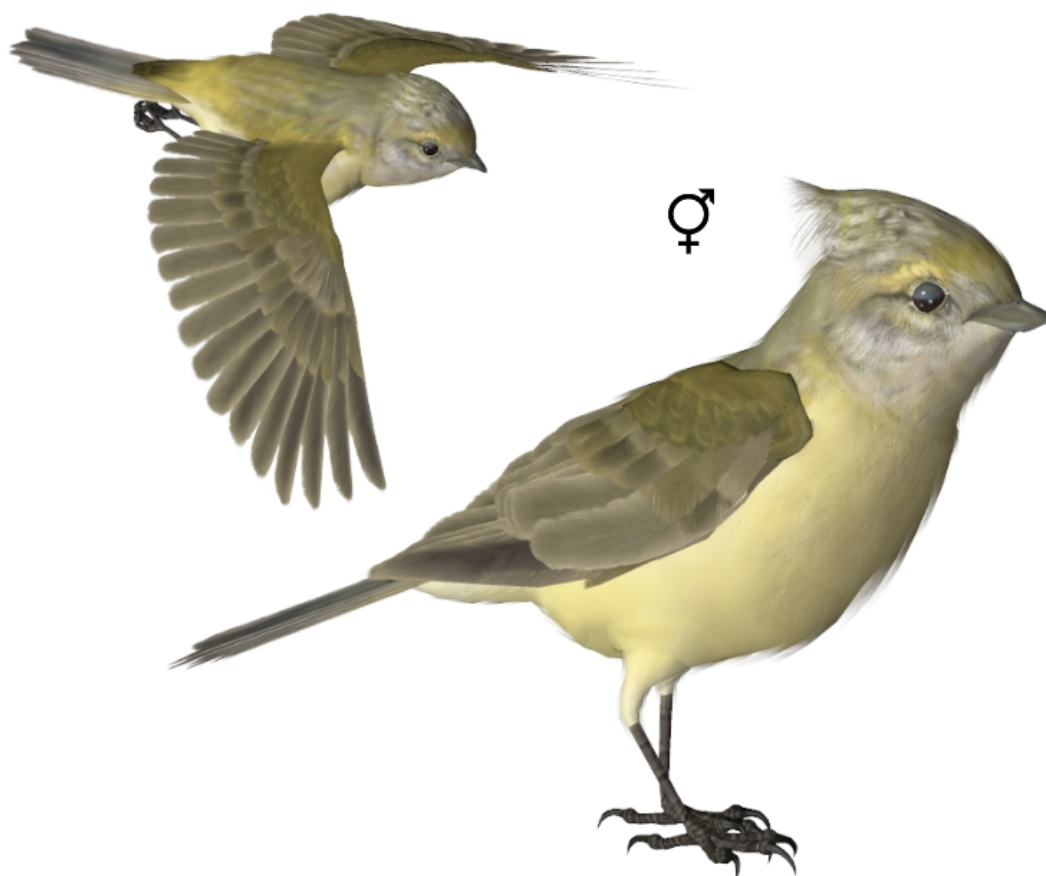
- *S. v. varius*. First reported by Temminck & Schlegel in 1845. The nominate species is found on southern Kuril Island (Japan), northeastern China (southeastern Liaoning, southern Jilin) and Korea.
- *S. v. sunsunpi*. First reported by Kuroda in 1919. It is found on Tanegashima (Ryukyu Islands). Race *sunsunpi* is as the nominate, but upper-parts slightly darker gray, and the breast-sides and flanks are a deeper chestnut.
- *S. v. namiyei*. First reported by Kuroda in 1918. It is found on North Izu Island (Toshima, Nijima, Kozushima). Race *namiyei* is intermediate between *owstoni* and the nominate. The cheek color is highly variable, from very pale buff to brick-brown.
- *S. v. yakushimensis*. First reported by Kuroda in 1919. It is found on Yakushima (Ryukyu Islands). It is similar in appearance to *sunsunpi*.
- *S. v. amamii*. First reported by Kuroda in 1922. It is found on NC Ryukyu Is (Amami-Oshima, Tokunoshima, Okinawa). Race *amamii* differs from nominate in having a slightly larger bill, and the chestnut on the upper mantle reduced or absent. The rest of the mantle is duller gray and washed olive. It also has duller chestnut on the under-parts.
- *S. v. orii*. First reported by Kuroda in 1923. The "Daito Varied Tit" is found on Daito-jima (Borodino Island). Race *orii* has an extensive area of chestnut on the upper mantle, the upper-parts are more clearly tinged olive, and the forecrown, head sides and entire underparts are a deep chestnut. Declared extinct in 1940

Common Name: Yellow-browed Tit
Scientific Name: *Sylviparus modestus*

Size: 3.5-3.9 inches (9-10 cm); **Wingspan:** 5.5-5.8 inches (14-14.7 cm)

Habitat: Asia; endemic to the southern Himalayas, Northeast India and southern China with smaller amounts in Southeast Asia. It is a resident and short-distance altitudinal migrant. It does a post-breeding descent to lower altitudes in many parts of its range.

The species prefers temperate montane and submontane forests, mostly oak, rhododendron and mixed forests, at higher levels in moss forest with epiphytes and scrub along tree-line, but may also occur in willow thickets and apricot orchards. In southern China, it can also be found in spruce, fir and rhododendron forests. It breeds in the Himalayas at 1,500–3,600 m elevations. In non-breeding season, it can be found in deciduous and evergreen forests with rhododendron, bushes on hillsides and large gardens; often at lower elevations.



Status: Least Concern. **Global population:** 5,650,000 Mature individuals with a stable population trend. It is common or fairly common in much of range. It is uncommon in the western Himalayas (eastward to central Nepal) and uncommon in northwestern Thailand.

Diet: Small invertebrates and larvae, also some seeds.

It is usually solitary or in pairs or small groups in breeding season. In autumn and winter, it is seen more often in mixed-species foraging flocks with other tits (especially the Green-backed tit). These mixed flocks can also include Black-throated Tits, various babblers, Eurasian Treecreepers, Goldcrests and leaf-warblers. It is a fairly inconspicuous bird, and not often vocal. It forages mostly in middle and upper levels of forest trees and upper levels of taller bushes. It is restless, flitting about through the foliage. Its agile movements and behaviour, including nervous wing-flicking, are reminiscent of those of a leaf-warbler. It also clings acrobatically to twigs and leaves.

Breeding: Sexes are alike. A small tit with small bill, short tail, thick legs, and distinctive greenish plumage and quick actions. The nominate race has the crown and upper-parts olive-green, slightly grayer on forehead, with a brighter and yellowish coloration on rump and upper-tail coverts. The upper-wing coverts and tail are more gray-brown, broadly fringed olive-green. The tail is tinged yellowish at base. The tips of the greater coverts are paler (forming indistinct wingbar), the alula is fringed bright olive-green. The flight-feathers browner and grayer, fringed with olive-green. The face is olive-green, often flecked paler yellow. There is a fairly short and poorly defined yellowish supercilium (often concealed), narrow yellowish eyering. The throat and under-parts are mostly dull olive-yellow, paler on belly and vent, washed buffish on the flanks. In worn plumage, colors are generally duller, and the supercilium is shorter (usually visible only in front of the eye), the wings are also browner, and the tips of the greater coverts are paler (a wing bar more obvious). The iris is dark brown, the bill is dark horn to bluish with grayish cutting edges and the legs are bluish-gray.

The juvenile is very similar to the adult, but in the hand pointed tips of tail feathers are evident.

Breeding season goes to at least April or May. The nest is mostly a pad of moss, with animal hair or fur, placed up to 7 m from ground in natural tree hole or cavity with very narrow entrance (often a thin slit). The clutch 4–6 eggs and when hatched, the chicks fed by both parents. While this bird is shy, adults may become quite bold in defence of their young.

Cool Facts: The Yellow-browed Tit is the smallest member of Tit family.

Somewhat darker birds in hills of Southern Assam (Northeastern India) sometimes separated as race *saturator*. Races differ little. Three subspecies recognized.

- *S. m. simlaensis*. It is found in the northwestern Himalayas from Kashmir eastward to North-central India (Kumaon). Race *simlaensis* is as nominate, but the upper-parts are brighter or yellowish-olive, the fringes of flight-feathers and the tail are a brighter yellowish-green and the under-parts are also brighter yellow.

- *S. m. modestus*. The nominate subspecies is found in the central and eastern Himalayas, northeastern India (the hills of southern Assam to Nagaland and Manipur), northern, western and southeastern Myanmar, south-central and southeastern China (southeastern Xizang, Yunnan, eastern Sichuan and Guizhou; also northwestern Fujian and southwestern Zhejiang), northwestern Thailand, northern and southeastern Laos and northern and south-central Vietnam (northern Tonkin, southern Annam).
- *S. m. klossi*. This subspecies is found in south-central Vietnam (Da Lat Plateau). Race *klossi* is very much like *simlaensis*, perhaps slightly duller or grayer on the crown, a little greener on upper-parts and on the fringes of flight-feathers and tail, and slightly brighter yellow below.

Special Thanks to my Beta-Testing Teams

Alisa, Flint Hawk, and Tparo

Species Accuracy and Reference Materials

The author has tried to make these species as accurate to their real life counterparts as possible. Many birds of the same species do vary considerably in color. This package tries to emulate the colors and markings in the most commonly found variants.

With the use of one generic model to create dozens of unique bird species, some give and take is bound to occur.

The model was created in Modo. The model rigs in Poser and DAZ Studio. The texture maps were created in Painter.

Field Guide Sources:

- **Handbook of the Birds of the World Alive** <https://www.hbw.com/>
- **Wikipedia** <https://en.wikipedia.org>
- **BirdLife International** <https://www.birdlife.org/>

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