

= Przevalski 's nuthatch =

Przevalski 's nuthatch (*Sitta przewalskii*), originally given the nomen nudum *Sitta eckloni* , is a bird species in the family Sittidae . Long regarded as a subspecies of the white @-@ cheeked nuthatch (*Sitta leucopsis*) , it nevertheless differs significantly in morphology and vocalizations . Both *S. przewalskii* and *S. leucopsis* have been regarded as closely related to the North American white @-@ breasted nuthatch (*Sitta carolinensis*) . It is a medium @-@ sized nuthatch , measuring about 13 cm (5 in) in length . Its upper body is a dark gray @-@ blue or slate color , becoming dark blue @-@ black at the crown . The cheeks and throat are a white buff @-@ orange , turning to a rich cinnamon on the underparts that intensifies in color on the sides of the breast . Vocalizations consist of alternating series of ascending whistles and short notes .

The bird is endemic to areas in southeastern Tibet and west central China , including eastern Qinghai , Gansu and Sichuan , inhabiting coniferous mountain forests of spruce or fir . The altitude at which it nests varies according to locality , but typically is from 2 @, @ 250 ? 4 @, @ 500 m (7 @, @ 380 ? 14 @, @ 760 ft) . The species was first described in 1891 from a specimen collected in China 's Haidong Prefecture . The common name and Latin binomial commemorate the Russian explorer Nikolay Przhevalsky , who discovered the species in 1884 . Little is known about its ecology , which is probably comparable to that of the white @-@ cheeked nuthatch .

It was given the rank of full species (separate from the white @-@ cheeked nuthatch) in 2005 in Pamela C. Rasmussen 's *Birds of South Asia . The Ripley Guide* . Other authorities followed suit , but as of 2014 , *S. przewalskii* does not have a full threat @-@ status evaluation by BirdLife International or the International Union for Conservation of Nature . A 2014 phylogenetic study of the species found it to be at the base of the nuthatch evolutionary tree out of 21 species examined , dispelling a hypothesis that *S. przewalskii* could belong to the same species as *S. carolinensis* .

= = Taxonomy = =

The nuthatches constitute a genus ? *Sitta* ? of small passerine birds belonging to the family Sittidae . The genus may be further divided into seven subgenera , of which *S. przewalskii* belongs to *Leptositta* , along with its nominate subspecies , *Sitta leucopsis* , and the white @-@ breasted nuthatch (*Sitta carolinensis*) . Nuthatches are typified by short , compressed wings and short , square 12 @-@ feathered tails , compact bodies , longish pointed bills , strong toes with long claws , and behaviorally , by their unique head @-@ first manner of descending tree trunks . Most nuthatches have gray or blue upperparts and a black eyestripe . (One recognizable feature of Przevalski 's nuthatch is that it lacks the eyestripe common to most nuthatch species .)

Sitta is derived from the Ancient Greek name for nuthatches , ????? , *sitt?* . " Nuthatch " , first recorded in 1350 , is derived from " nut " and a word probably related to " hack " , since these birds hack at nuts they have wedged into crevices .

Sitta przewalskii was first scientifically described in 1891 by Russians Mikhail Mikhailovich Berezovsky and Valentin Bianchi based on a single specimen obtained in the Haidong Prefecture , in Eastern Qinghai . The common name and Latin binomial commemorate the Russian explorer Nikolay Przhevalsky , who discovered the species in Tibet in 1884 and dubbed it *Sitta eckloni* without providing adequate description , rendering it a nomen nudum . Though the primary habitats of *Sitta przewalskii* and the white @-@ cheeked nuthatch (*Sitta leucopsis*) are separated from each other by almost 1 @, @ 500 km (930 mi) , Przevalski 's nuthatch was described as closely related to the white @-@ cheeked nuthatch , and was thereafter often considered and treated conspecifically , as a subspecies of *S. leucopsis* .

In 2005 , Pamela C. Rasmussen granted the taxon autonomous status in her book , *Birds of South Asia . The Ripley Guide* , uncoupling the species from *S. leucopsis* . The classification was noted by ornithologists Nigel J. Collar and John D. Pilgrim in 2007 , and endorsed by the International Ornithological Congress , by Alan P. Peterson in his well @-@ known *Zoological Nomenclature Resource (Zoonomen)* , and by the Internet Bird Collection (IBC) , sponsored by the *Handbook of the Birds of the World* . No subspecies of *S. przewalskii* itself have been identified .

In explaining this separation of species , Rasmussen points to morphological divergence and significant differences in vocalization . Ornithologist Edward C. Dickinson observed in a 2006 article that though evidence of morphological and vocal differences between *S. przewalskii* and *S. leucopsis* have been delineated , little had yet been published presenting comparative morphological details , and that it would be instructive to study how each taxon responds to the calls of the other .

The white @-@ cheeked nuthatch , with *S. przewalskii* subsumed within it , has been regarded as closely related to the North American white @-@ breasted nuthatch (*Sitta carolinensis*) , which has a similar contact call (though *S. carolinensis* 's is moderately higher in pitch) , and they have sometimes been treated as conspecific . In turn , it has been proposed that the triumvirate of *S. przewalskii* , *S. leucopsis* and *S. carolinensis* could be related to the *Sitta canadensis* , monophyletic group , corresponding to the subgenus *Micrositta* , which includes six species of average @-@ sized nuthatches . The relationships remain very unclear . A molecular study by Eric Pasquet conducted in 2014 may provide some clarity .

In 2014 , Eric Pasquet , et al. published a phylogeny based on examination of nuclear and mitochondrial DNA of 21 nuthatch species . Though *S. leucopsis* was not included in the study , it found that within the nuthatch group covered , *S. przewalskii* is basal ? an ancestor at the base (or root) ? to the nuthatch evolutionary family tree , and thus " sister to all other nuthatches , without any close relatives " . The findings resulted from phylogenetic analyses (employing Bayesian inference and the maximum likelihood methods) . A biogeographical analysis (using the dispersal @-@ extinction ? cladogenesis model) was then performed . The cladogram drawn from the evidence indicates that the first clade and closest descendants of Przevalski 's nuthatch are the North American white @-@ breasted nuthatch and the giant nuthatch (*S. magna*) , dispelling the hypothesis that *S. przewalskii* could belong to the same species as *S. carolinensis* .

= = Description = =

Because *Sitta przewalskii* has long been regarded as a subspecies of the white @-@ cheeked nuthatch , its description has often been made in comparison with it . Though both species lack the black eyestripe typical of other nuthatches , their coloring is distinct , with *S. leucopsis* being white- or creamy @-@ buff on its throat , cheeks , breast , flanks and belly , where *S. przewalskii* has varying shades and concentrations of cinnamon . *S. przewalskii* is also the smaller of the two , and its bill is markedly thinner . Males and females of the species are nearly identical in appearance , except for the male 's brighter cinnamon coloring .

The area above the eyes , including the forehead , crown and nape , is a deep blue @-@ black , through the top edge of the mantle . The mantle proper is a medium to dark gray @-@ blue as are the tertials and upperwing @-@ coverts , turning to a dark gray at the median , greater and primary coverts and the alula . The secondaries and inner primaries are fringed in gray @-@ blue . The central rectrices are gray @-@ blue , and the outer rectrices are a blackish @-@ gray , paling towards the tips .

The face and surrounding areas , including the lores , supercilium , ear @-@ coverts , cheeks and throat are a white buff @-@ orange . Below , the belly and breast are a rich cinnamon , darkening to an orange @-@ cinnamon at the sides of the breast . The rear flanks and undertail @-@ covert feathers are rufous . In worn plumage , the color may be uneven in the lower parts and lighter in hue . The upper mandible of the bill is black , and the lower is gray with a black tip . The iris and legs are dark brown . Juveniles of the species resemble adults but for the base of their beaks being yellow , proportionately shorter , and their overall coloring being less vibrant .

Przevalski 's nuthatch is a medium @-@ sized bird , measuring about 12 @. @ 5 ? 13 cm (4 @. @ 9 ? 5 @. @ 1 in) in length . The folded wing of the male is 72 ? 77 mm (2 @. @ 8 ? 3 @. @ 0 in) long and that of the female 69 ? 74 mm (2 @. @ 7 ? 2 @. @ 9 in) ; an average of 4 mm (0 @. @ 16 in) shorter than the white @-@ cheeked nuthatch . The wingspan is about 22 @. @ 5 cm (8 @. @ 9 in) . The beak measures 17 ? 17 @. @ 6 mm (0 @. @ 67 ? 0 @. @ 69 in) , which is thinner and shorter than that of *S. leucopsis* , in which the beak is approximately 21 mm (0 @. @ 83 in) long .

The tarsus is 18 mm (0 @. @ 71 in) , and the tail is 43 mm (1 @. @ 7 in) in length .

= = Vocalizations and behavior = =

Sitta przewalskii 's territorial calls differ significantly from those of *S. leucopsis* , whose notes are more nasal , whereas the song of *S. przewalskii* is in long verses composed of whistles that ascend in pitch , interspersed with short notes . According to the Handbook of the Birds of the World , vocalizations include a " muffled , mellow ' chip ' repeated in irregular series ... ; a loud , emphatic , whistled ' dweep ' or ' dweep @-@ eep ' ; a slightly nasal , querulous ' que ' , usually repeated 3 ? 5 times ... ; and thinner ' pee @-@ pee @-@ pee @-@ pee ... ' or ' seet @-@ seet @-@ seet @-@ seet ... ' notes on [the] same pitch but slowing towards [the] end of [the] phrase . "

In 1950 , English naturalist Frank Ludlow reported a description of the bird , as provided to him by Ernst Schäfer who studied an adult male near Litang in 1934 . It was characterized as : " one of the shyest and rarest denizens of the conifer forest " , and one leading a solitary life , much like nearby populations of three @-@ toed woodpeckers (*Picoides tridactylus funebris*) . By contrast , Ludlow observed the species in southeastern Tibet , probably during the winter , and did not find it particularly reserved . He reports having killed a specimen in a willow tree , far from the species ' usual coniferous nesting grounds . The specimen was captured on the outskirts of a forest , on a ridge between two valleys , where it stood on a dead branch from which it launched in pursuit of insects in flight , like a flycatcher .

= = Distribution and habitat = =

The species is endemic to an area in west central China and southeastern Tibet . In China , it is found in eastern Qinghai , from the Daba Mountains as far north as the Menyuan Hui Autonomous County , and as far south as the plateau of Amdo (35 ° N. 101 ° E.) , as well as in the southern part of Qinghai in Nangqên County ; in the area of the Yellow River in Xinghai County ; in Gansu , southwest of Xiahe and Min counties ; in Sichuan , where it has been observed in the north , center and west of the province , including sightings in Songpan County at the Jiuzhaigou Valley nature reserve , in the Qionglai Mountains in the Wolong District , in the region of Barkam County , and in the area of Litang . The species has also been observed in Kunming , Yunnan , in far southwestern China , where it most likely migrates to overwinter .

In Tibet , the species has been found in the northeastern Tibet Autonomous Region in the Chamdo Prefecture ; and in the southeast of the region in Tse (in December) and in Dzeng (in April) , both in the South Tibet (Tsangpo) Valley region . The Tsangpo Valley sightings may be anomalous , only indicating winter visitation . The bird observed in Dzeng was in an environment alien to the species ' normal coniferous forest environs , and both the Dzeng and Tse individuals had atypically pale underparts , indicating they may have been nominate *S. leucopsis* , but with genetic introgression traits from *Przevalski's nuthatch* .

S. przewalskii inhabits coniferous mountain forests of spruce or fir . Its altitudinal range commonly approaches a forest 's tree line . In China it has been observed at height distributions of 4 @, @ 270 m (14 @, @ 010 ft) (in Sichuan during August) and in Qinghai at 2 @, @ 590 ? 2 @, @ 895 m (8 @, @ 497 ? 9 @, @ 498 ft) and at approximately 2 @, @ 250 m (7 @, @ 380 ft) (during June) . In western Nepal a range of 2 @, @ 745 ? 4 @, @ 575 m (9 @, @ 006 ? 15 @, @ 010 ft) has been described . In Tibet individuals have been recorded at heights of 3 @, @ 500 ? 4 @, @ 500 m (11 @, @ 500 ? 14 @, @ 800 ft) in the northeast , and from 2 @, @ 895 ? 3 @, @ 050 m (9 @, @ 498 ? 10 @, @ 007 ft) in the southeast .

= = Threats and protection = =

Sitta przewalskii is not yet treated as an independent species by BirdLife International or the International Union for Conservation of Nature (IUCN) , and its threat level is not evaluated by either . Despite being described as rare in China and Southeast Tibet , because the taxon is treated

instead as a subspecies of *S. leucopsis* , the evaluation of its population incorporates the relative abundance of its parent species . Concomitantly , it takes on its parent category of least concern . As *S. przewalskii* has not been extensively studied independently from *S. leucopsis* , a classification of data deficient could be applied , but the rarity of sightings indicates concern for its status ; a finding of near threatened or even classification as a vulnerable species may be warranted .