

Tawny-Tit Spinetail

Description



Figure 1 Female (right) and male (left) *L. yanacensis*

Tawny Tit-Spinetail (*Leptasthenura yanacensis*) are small birds in the Furnariidae family. These distinguishing birds can be recognized by their Tawny or cinnamon orange body colors that are accented by a slightly lighter breast color and darker cinnamon-brown remiges and a small black stripe over

both eyes. These birds have small, pointy, black bills and legs that range from grey to black.

Both male and females have ornamental Rufus colored patches across their bodies

(Schulenburg, 2012). As shown in Figure 1, there is very little difference between male and

females but males can be distinguished by their slightly larger stature and more prominent

foreheads The average size of these birds are 10-12 grams which makes them comparable to

the size of most species of Wrens (Schulenburg, 2012).

Ecological Role

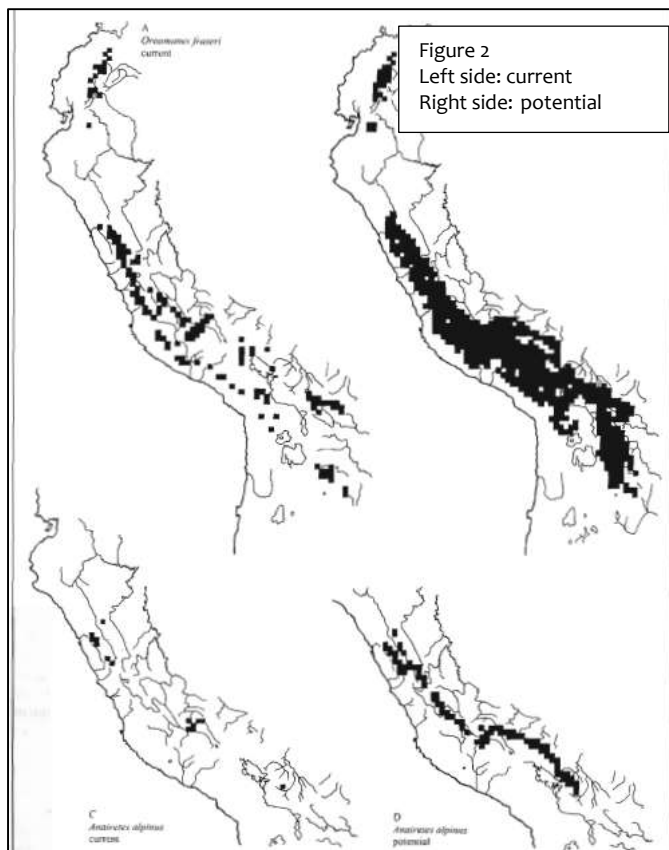
L. yanacensis are habitat specialists meaning that they have specific environmental living requirements. They are endemic to areas with high elevations, mono-climactic features, constant year-round moisture, and vast temperature differences between day and night that usually consist of freezing nocturnal temperatures and daily averages of 12°C. The high-Andean *Polylepis* forests provide those specific living environments (Herzog, 2002). *Polylepis* forests have many adaptations that allow them to live in the harsh climates of the mountains with reduced production flowers to not expend as much energy, leaves covered with wooly hairs to gather water, and trunks with thick and rough bark that protect them against the nightly frosts (Cahill, 2007). These forests provide protection and shelter for many habitat specialists in the Andes Mountains including *L. yanacensis*.

A study was conducted by Sebastian Herzog to examine the relationships between birds within the *Polylepis* forests in 2002. *L. yanacensis*' were the most observed species (more than 70% of observations) followed by the Giant Conebill and the Tyrannulet (Herzog, 2002), these observations suggest that *L. yanacensis* congregate in mixed species flocks. It was also observed that *L. yanacensis* play a couple social roles as well such as ecological. The *L. yanacensis* were observed many times as the "watch dog" of other members of their mixed species community because they would call to warn the others of an approaching, potential danger (Herzog, 2002). It was also recorded that *L. yanacensis* would also take on the role of the flock leader by initiating a flock move if the usual leader, the Conebill wasn't present (Herzog, 2002).

Feeding Habits

Since there are multiple insectivorous species of birds living alongside the *L. yanacensis* in the *Polylepis* forests, it would be easy to assume that they would have many competitive species. This however is not the case because each species within this mixed-avian flocks operate within their realized niche rather than their potential niche. An example of this is that while the Conebills will scavenge for insects under the flaky bark of the *Polylepis* trees, the Tawny Tits use a gleaning method and search for insects among the thinner branches rather than the main trunk of the tree (Herzog, 2002).

Population Trend



Although there is no record for the original population of the *L. yanacensis*, scientists can estimate that their population trend is declining due to the decline of the *polylepis* forest (ICUN Redlist). Since the Tawny Tit is a known specialist, a good indication of its former population can be guessed by its endemic environment's former size. *Polylepis* forests were first speculated to be remnants of a widespread habitat in 1958

by Hans Ellenberg (Fjeldsa, 2002). This theory was pushed aside by most scientists until the early '90's when other evidence surfaced that suggested that human activity such as cattle ranching and burns have drastically reduced the size of the forests. It has been observed that areas that are too steep to be climbed by cattle or too protected by rocks or riverine environments to be burned are the current spotty locations where *Polylepis* forests currently reside (Fjeldsa, 2002).

Intentional forest fires were often caused by natives in order to push wildlife into smaller, more easily targeted areas. The consequences of these burns were that the soil was left vulnerable to erosion and therefore the animal life including *L. yanacensis* that was originally found in these burned areas could not re-establish causing the *Polylepis* forests to never return (Fjeldsa, 2002). Estimates of where the original forest ranges were gathered by finding areas that had evidence of *Polylepis* charcoal as well as habitats that are made up primarily of fire resilient species.

Gaging by the estimated original range of the forest only about 10% of the "original" forests are still in existence. Since 90% of *L. yanacensis*' habitat was lost then it can be assumed that 90% of its population has also been lost.

Distribution/Habitat

The Tawny Tit resides in patchy regions within the high Andes range in Peru (between 3950-4600m), Bolivia (2800-4200m), and Argentina (2900-3600m) in *Polylepis* forests (Schulenburg,



Figure 3

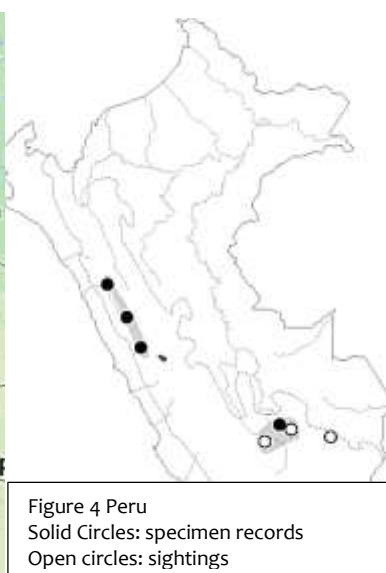


Figure 4 Peru
Solid Circles: specimen records
Open circles: sightings

2012). The Andean Mountains are dominated by open plain landscapes, because of this the *polylepis* forests have unique biological diversity with specialized ecological functions.

The trees provide shelter for many species of epiphytic

plants, lichens, mammals and birds. They also provide nesting sites and food sources to many species that live within it.

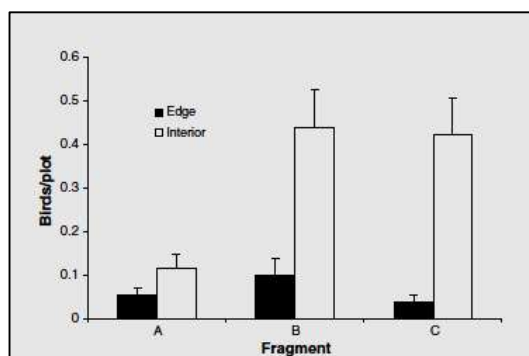


Figure 5 proof that *L. yanacensis* prefer interior to exterior

Within these patchy areas, *L. yanacensis* can be found within close ranges varying from .47 to 3.8 ha. These ranges are much smaller than the other more common specialist birds within the same habitat such as the Conebill that had a range from 5.1 to 6.7 ha. (Herzog et al) In addition to having a narrow

home range, the Spinetails also have a preference to areas with low edge to interior ratios. (See figure 5) This is because habitat areas that abut the edge of forests are susceptible to wind chill, varied species that can be found in the surrounding matrix, and less protection from predation

Reproduction and Nesting

Very little has been observed about the mating or nesting habits of this species, in fact the only published nest reported was by Vuilleumier in 1969. He observed that the nest was constructed of dried grass and lined with sheep's wool, plant fibers and feather. It was found 2.5 meters above the ground in the fork of a *Polylepis* tree and both parents were seen constructing it. However, through an email correspondence with Sebastian Herzog (2014) he informed me that nests are a dome shaped structure made of grasses such as *Festuca*, *Stipa*, *Calamagrostis*, and *Muhlenbergia* sustained by several thin branches and placed laterally away from the tree trunk. Herzog then pointed me to some unpublished research by one of his colleagues, Noemi Huanca who has observed that egg laying happens primarily in October and November, chicks fledging mainly December. There is no current data documented on the reproduction rates, survivorship or age of sexual maturity. (Schulenburg, 2012)

Protection Status

In 1933 Carriker first documented the Tawny Tit Spinetail as *Leptasthenura yanacensis*. (IUCN Red List) In 2012 the bird was assessed by Birdlife International to be Near Threatened, meaning that the species is not yet vulnerable but given its current population trend will most likely become vulnerable or worse in the near future. The determinants in the choice of status for the Tawny Tit were the rapid loss of environment within the species fragmented and moderately small range. (IUCN Red List)

The danger with having small fragmented populations is that it causes the population to not be as equipped to evolve. Small populations are very susceptible to extinction especially when the species is endemic to a fragmented habitat that is dwindling in size.

Major Threats

The leading cause of species endangerment is habitat loss or fragmentation, this trend is the same for *L. yanacensis*. Given that they are a specialist species, meaning that they are only able to thrive in very specific environmental conditions, human interference such as burns and cattle ranching, and minor logging for firewood and houses by natives, the *Polylepis* forests that Tawny *L. yanacensis*' are endemic to are becoming Fragmented (Fjeldså, J. 2002). Due to the high degree of habitat specialization to the *polylepis* forests causes the *L. yanacensis* to have a much lower tolerance to fragmentation as compared to other more generalist species of birds (Cahill, 2007). Since some fragments may be more intensely used due to their size, those fragments are at even greater risk if natural disaster were to occur because the species inhabiting that area would have no place to retreat to.

Proposed Actions to Conserve the Species

Since there are so many holes in what is known about this bird, the best proposed conservation efforts currently are to gain knowledge about the bird by conducting surveys to assess population, and then monitoring population trends. The continued protection of *polylepis* forests is also a very vital part of conservation since *L. yanacensis* is endemic to those

forests. If Fragmentation of the forests continue, *L. yanacensis* is at great risk of becoming extinct as its habitat shrinks. Ways to promote the restoration of the existing forests and the prevention of further fragmentation are to manage the surrounding grasslands and limit and monitor the forest use and harvesting practices utilized by natives. By minimizing grazing and avoiding fires the sharpness of the edges in the current forests could potentially be reduced which would add more habitat for *L. yanacensis* since they avoid areas that are unable to live in areas that are influenced by edge effects. Finally, though it is virtually impossible to ban all harvest within these forests due to the fact that is the only source of wood for the natives, enforcement could be set in place in order to prevent the removal of larger, old growth trees that the birds seem to prefer to seek shelter in (Cahill, 2007).

Citations

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Cahill J., Matthysen E., 2007. Habitat use by two specialist birds in high-Andean *Polylepis* forests. Science Direct Journal

Email Correspondence with Sebastian Herzog in March of 2014

Unpublished works by Noemi Huneca given to me by Sebastian Herzog March 2014 (she was unavailable to be contacted)