

Observations of Blue-naped Chlorophonias (*Chlorophonia cyanea*) in the lowlands of the Madre de Dios Department, Peru, with comments on the species' presence in the Amazonian lowlands

Robert A. Wiebe

Cornell Lab of Ornithology, Cornell University, USA

raw292@cornell.edu

The Blue-naped Chlorophonia (*Chlorophonia cyanea*) inhabits humid forests along the Andes from Venezuela to Argentina, in the Pantepui region in Venezuela, Guyana, and Brazil, and on the Atlantic shield in Brazil, Paraguay, and Argentina. In Peru, it primarily inhabits montane forests at mid-elevations (900-2000 m) along the eastern slope of the Andes (Schulenberg *et al.* 2010). It has occasionally been reported in the lowlands, mostly in the department of Madre de Dios but with at least one published record in Ucayali (Diamond & Terborgh 1967, Tello 2003, Socolar *et al.* 2013). It frequently joins flocks with other species and is fairly common in its montane elevational range (Schulenberg *et al.* 2010, Merkord 2010); lowland records are comparatively rare and usually pertain to individuals feeding at fruiting trees with other species (Tello 2003). It is listed as Least Concern by IUCN reflecting its large, stable population over a large range (BirdLife International 2018).

C. cyanea is frugivorous and has been recorded feeding on a variety of fruits in montane forests, including from *Cecropia*, *Conostegia*, and *Allophylus* spp. trees (Willis 1966, Foster 1987, Freeman *et al.*

2012). In the lowlands, *C. cyanea* has been reported feeding on *Ficus* sp. fruits at least twice, with one record in eBird (Socolar & Flake, 2009, ID: S16526168) (Tello 2003, eBird 2019), and others have reported it feeding at unspecified fruiting trees in eBird (Rowoth, 2016, ID: S30781817) (eBird 2019). Larger Neotropical frugivores such as cotingas have been observed to make altitudinal and nomadic movements following fruit availability (Chavez-Campos 2004, Schulenberg *et al.* 2010). At the time of writing, I am not aware of any other parts of the lowland Amazon basin where *C. cyanea* regularly occurs.

The site of the *C. cyanea* observations presented here is the Los Amigos Biological Station (EBLA), situated along the Madre de Dios River in the Madre de Dios department in southeastern Peru (12°24'S / 70°09'W; Figure 1).

The trail system around the station is extensive (>35 km) and traverses a wide variety of habitats in seasonally-flooded areas and on a raised *terra firme* plateau. The study site is situated in the Amazonian lowlands (235-295 m), approximately 70

km from the base of the nearest Andean ridge near the town of Mazuco. The diversity of habitats in floodplain and *terra firme* zones in addition to the large number of researchers at the station contribute to a high reported avian diversity (Wiebe 2018).

Here, I report a series of *C. cyanea* observations at the Los Amigos Biological Station in July 2018, including sightings of individuals and of a large mixed-species roosting flock with two *Euphonia* species. Between 13 July and 27 July 2018, approximately 16 individuals of *C. cyanea* were observed, including 12 individuals in a single roosting flock.

On 22 July 2018, I located a roost tree where a group of *C. cyanea* roosted with two species of euphonias, *Euphonia chrysopasta* and *E. minuta*. I returned on 23 July 2018 at 1600 h to make accurate counts and behavioral

observations as the individuals flew in to roost, and counted twelve *C. cyanea* fly in to roost between 1604 h and 1631 h, along with ten *E. chrysopasta* and eight *E. minuta*. The roost tree was a *Ficus* sp. tree, which did not have any leaves at the time. It was located above dense bamboo thickets, in an area where selective logging took place in the 1990's, creating a habitat that is now bamboo-dominated with isolated emergent trees and patches of tall secondary forest on top of the *terra firme* plateau. From multiple days of observation 22-25 July 2018, the birds in this roosting flock appeared to consistently roost in the same patch of branches at the end of one major branch, in the lower part of the canopy. The same mixed flock of chlorophonias and euphonias returned to roost daily at the same tree until 25 July 2018, and photos document all individuals. I deposited photographs documenting the *C. cyanea* in the Macaulay

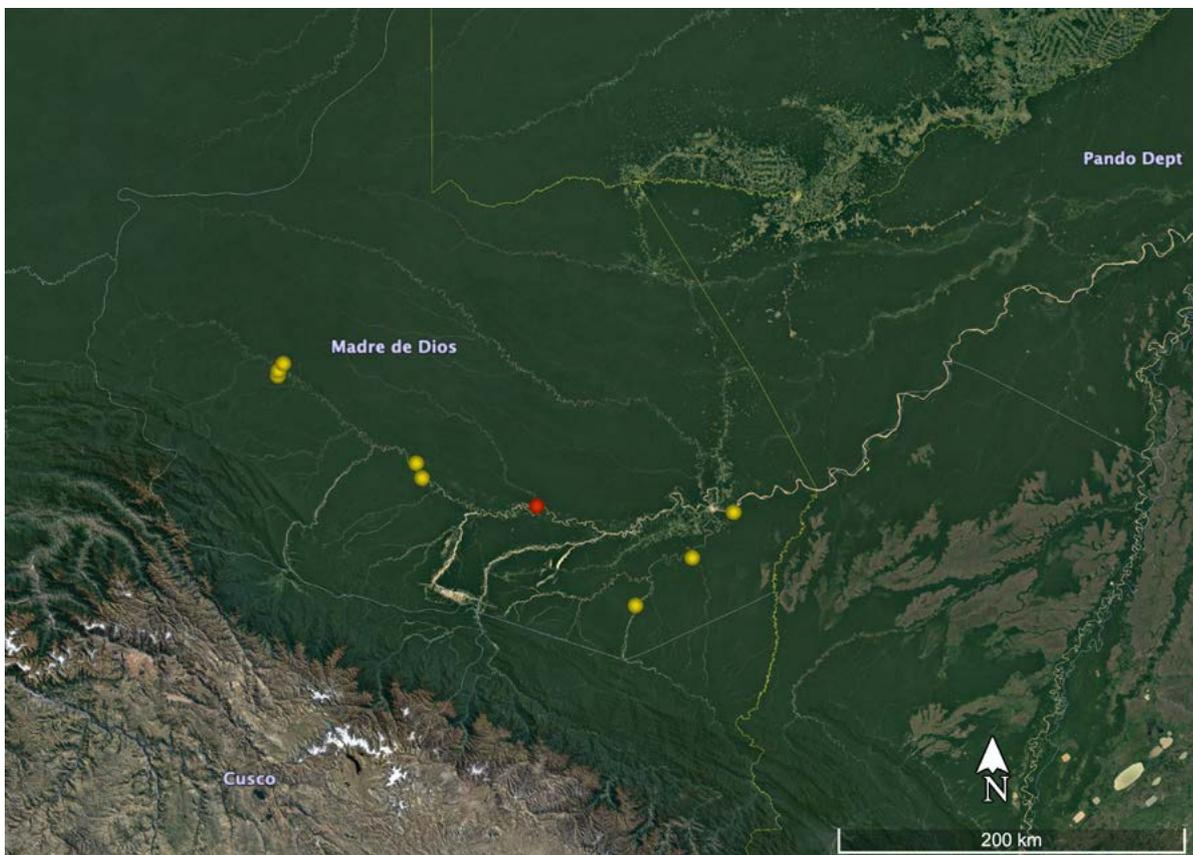


Figure 1. Locations of *C. cyanea* sightings in the lowlands of southeastern Peru. The red spot refers to the location of the new observations presented here, yellow spots refer to the locations of previously reported *C. cyanea* sightings.

Library (<https://maculaylibrary.org>, access numbers: 108474471, 108474581, 108473231, 108507601). After 25 July, the birds seemed to have left this roost, and were not seen again after repeated checks of the site by multiple observers.

The *C. cyanea* individuals at the roost flew in to the roost tree in pairs or groups. The first group of *C. cyanea* consisted of six individuals, which were the first birds to fly in to the roost tree at 1604 h. The following six *C. cyanea* individuals and all of the euphonias flew in gradually until 1631 h and 1634 h, respectively, usually in pairs. All *Chlorophonia* and *Euphonia* individuals flew in to the roost tree in parts of the tree away from the patch used for roosting, before moving to the roost area fairly quickly, usually within a minute of arriving at the tree. Many individuals called as they came in, giving a variety of call types, but once settled in the roost area did not vocalize.

Additionally, four *C. cyanea* individuals were observed and documented away from the roosting tree at the Los Amigos Biological Station by William Sweet in successional floodplain forest on 13, 14, and 27 July 2018. Two of these individuals were seen at fruiting *Ficus* sp. trees, foraging alongside other frugivorous species including several *Tangara* tanagers, *Ortalis guttata*, *Penelope jacquacu*, and *Cacicus cela*. Those two *C. cyanea* individuals did not seem to be moving in a flock with the other species, as they left and came to the tree separately. Rather, the *C. cyanea* and other species appeared to be congregating at the fruiting tree as a shared resource. The additional two *C. cyanea* individuals were observed foraging together with a mixed species tanager flock.

All previously published observations of *C. cyanea* in the lowlands of Madre de Dios have been from the dry season between June and August (Tello 2003, Socolar *et al.* 2013).

This seasonal pattern of observations has caused some speculation that the species may be a regular seasonal migrant moving downslope from the Andes into the lowlands (Schulenberg *et al.* 2010). However, most researchers note that at this time there is not enough evidence to confirm that these individuals observed in the lowlands are migrants (Merkord 2010). Frequent observations of the species foraging at fruiting trees (particularly *Ficus* sp.) when found in the lowlands suggests that it may follow seasonal fruiting resources. More ornithological fieldwork in the area is typically conducted in the dry season than in the wet season due to typical academic calendars, creating a bias in the timing of observations of rare birds. In addition, the species' apparent rarity in the lowlands is likely complemented by a low detection probability as the species' vocalizations are inconspicuous, it is slow-moving, and it typically forages in the canopy. More field surveys in the wet season will be necessary to determine whether *C. cyanea* is present at that time of year. A study with geolocator tags could be used to determine whether *C. cyanea* present in lowland Amazonia are residents, elevational migrants, or austral migrants. Nesting records of the species in the lowlands, if found, would suggest that the species is resident.

The unique clustering of lowland *C. cyanea* observations in southeastern Peru also poses the question: why do *C. cyanea* not seem to be present elsewhere in the lowland Amazon basin near the Andes? *C. cyanea*'s circum-Andean distribution at similar altitudes in montane forest contrasts with a fairly localized lowland distribution restricted to the southwestern Amazon, perhaps suggesting that part of the Amazon basin is more suitable for *C. cyanea* than other lowland areas along the inner base of the Andes. Several sedentary species have a similar distributional pattern, being resident in mid- or high-

elevation forest throughout the Andes and only or mostly in the southwestern Amazon within the lowlands of the Amazon basin, including *Crypturellus obsoletus*, *Sclerurus albigularis*, *Pachyramphus viridis*, *Zimmerius cinereicapilla*, and *Philydor rufum* (Schulenberg *et al.* 2010). Some of the aforementioned species associate with *Guadua* spp. bamboo forests in their lowland ranges (Schulenberg *et al.* 2010, Harvey *et al.* 2014). Various hypotheses have been presented to explain this pattern, including fewer competitors and a more suitable habitat structure in lowland bamboo forests (Harvey *et al.* 2014). While a close association with bamboo has not been consistently shown in reports of *C. cyanea* in the Peruvian lowlands, it is worth noting that the roost of twelve individuals reported here, as well as at least three previously reported individuals (including eBird list from Lebbin, 2004, ID: S22361946), were recorded in bamboo-dominated habitats with emergent trees (Socolar *et al.* 2013, eBird 2019).

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