

## Sympatry of Black-faced *Leucopternis melanops* and White-browed Hawks *L. kuhli* along the lower rio Tapajós, Pará, Brazil

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Os gaviões *Leucopternis melanops* e *L. kuhli* são geralmente consideradas parte de uma superespécie, na qual as duas aloespécies se substituem em lados opostos do rio Amazonas-Solimões. Um registro antigo de simpatria dos dois congêneros era considerado duvidoso, devido a incerteza quanto as localidades de coleta. Aqui relatamos a captura das duas espécies na mesma região, na mata de *terra firme* do lado esquerdo (oeste) do baixo rio Tapajós, na Amazonia central brasileira.

### Introduction

Black-faced Hawk *Leucopternis melanops* occurs north of the Amazon in south-east Colombia, south Venezuela, north-east Ecuador and north Brazil,

and has been considered allopatric with White-browed Hawk *L. kuhli*, a similar species (or race) separated by the Amazon River<sup>3</sup>, which occurs in east Peru and Amazonian Brazil<sup>4</sup>. Doubt exists as



Figure 1. White-browed Hawk *Leucopternis kuhli* (top left and bottom right) and Black-faced Hawk *L. melanops* (others), showing characteristic features such as the single white tail-band. The main plumage differences of *L. kuhli*, such as the 'mainly blackish slate coloration of the nape and hindneck, the absence of the white spots on wing-coverts and scapulars, and the possession of conspicuous white superciliaries'<sup>6</sup>, are clearly evident. Both are phenotypically typical of the species elsewhere in their ranges, suggesting the two are not hybridising in this area (T. Haugaasen)

to whether *L. melanops* also occurs south of the Amazon in the Tapajós region. One specimen, collected by the Olalla brothers in 1931 and held at the American Museum of Natural History (New York), is labelled from Tauari on the east bank of the rio Tapajós<sup>1</sup>, c.60 km south of the Amazon, and Amadon<sup>1</sup> refers to another specimen taken by the same collectors as also being from the Tapajós region. However the validity of these has been questioned owing to a lack of subsequent evidence of this species' presence in the area, and because of the possibility of errors made in labelling the specimens<sup>1</sup>. Consequently, most subsequent authors describe *L. melanops* as being restricted to forests north of the Amazon<sup>4,5,7,8,14</sup>, only Parker *et al.*<sup>11</sup> regarding it as occurring south of the river. Here we report records of both species from forests by the rio Arapiuns, on the west bank of the rio Tapajós.

### Records from our study area

Our records of these species come from four mist-net captures (Table 1) and three separate observations made during research on the impact of ground fires. All were in forests near the rio Maró, a clear-water tributary of the Arapiuns, at the western limit of the newly created Tapajós–Arapiuns Extractive Reserve (RESEX Tapajós–Arapiuns). The area was unsampled prior to our work<sup>8</sup>, but there are several collecting sites within 50 km of both banks of the Tapajós<sup>8,9</sup>, and the avifauna of Tapajós National Park, 200 km to the south, is well documented<sup>10</sup>.

The hawks were attracted to mist-nets by the presence of captured birds, and attacks were confirmed upon various understorey species including Snow-capped Manakin *Pipra nattereri* and Rufous-capped Antthrush *Formicarius colma*. JB made two additional sightings of *L. kuhli* in primary forest on both banks of the lower rio Maró (>4 km apart), while CAP observed *L. melanops* in primary forest west of the rio Maró and 40 km south of the other records (02°60'S 56°05'W). Both *L. melanops* captures (see Table 1) were heavier than the weight range (297–317 g) reported by Bierregaard<sup>2</sup>, and the second bird had buff fringes to its upperwing-coverts, the only sign that it was an immature<sup>2</sup>. While we are unfamiliar with the immature

plumage of *L. kuhli*, both mist-netted individuals appeared to be adults.

### Discussion

Our records indicate that these species are sympatric in the lower Tapajós region. While some non-overlapping allospecies may be separated according to a specific barrier<sup>6</sup>, records of these species on both banks of the Maró, with *L. melanops* found both north and south of *L. kuhli* indicate that this is not the case here. The possibility that *L. melanops* is present at Alta Floresta, Mato Grosso<sup>15</sup>, strengthens the notion that the two species are sympatric in the Tapajós–Madeira interfluvium. It is noteworthy that *L. melanops* is not the only species to be primarily restricted to the north of the Amazon that reappears in the Tapajós–Madeira area: Green-tailed Jacamar *Galbula galbula* and Ferruginous-backed Antbird *Myrmeciza ferruginea* have similar distributions<sup>6</sup>. Confirmation of *L. melanops* on the east bank of the Tapajós, where at least one of the Olallas specimens was reportedly collected, would indicate an even broader range, though care is required in interpreting this collecting locality: the Olallas collected many specimens from both banks of the Tapajós and some labelling errors were inevitable<sup>1</sup>.

We have no evidence that hybridisation between these hawks occurs in the region. None of our captures or observations showed intermediate characteristics, and at least one of the Olallas specimens of *L. melanops* was 'typical'<sup>11</sup>. However, it is impossible to discount the possibility due to our small sample. Interestingly, Zimmer *et al.*<sup>15</sup> report the observation of a typical adult *L. melanops* (whitish crown, dark mask, pale-spotted mantle) calling alternately with a typical *L. kuhli* at Alta Floresta, 500 km south of our records. Because this locality was so far from the known range of *L. melanops*, the observers (K. Zimmer and T. Parker) presumed the *L. melanops*-like bird to be an immature *L. kuhli*. But little is known of the immature plumage of *L. kuhli* and it is difficult to confirm or refute the presence of *L. melanops* in this region.

We have few data to suggest a mechanism for the coexistence of these similar species, as their diets and foraging behaviour are poorly known. The

**Table 1.** Capture details of Black-faced Hawk *Leucopternis melanops* and White-browed Hawk *L. kuhli*

Species	Capture/ sighting date	Wing <sup>1</sup> (mm)	Tail (mm)	Weight (g)	Habitat	Location	GPS location
<i>L. kuhli</i>	23 Feb 99	215	135	343	unburnt primary forest	lower rio Maró (east bank)	02°45'S 55°40'W
<i>L. kuhli</i>	30 Jan 01	212	130	326	unburnt primary forest	lower rio Maró (east bank)	02°45'S 55°40'W
<i>L. melanops</i>	8 Jan 99	216	145	350	unburnt primary forest (edge)	lower rio Maró (west bank)	02°44'S 55°42'W
<i>L. melanops</i>	4 Mar 01	232	150	360	burnt primary forest	lower rio Maró (east bank)	02°44'S 55°39'W

<sup>1</sup> measurements for extended chord

stomach contents of three *L. kuhli* indicate that birds, reptiles and beetles are among their prey, and Robinson<sup>13</sup> preliminarily classified *L. kuhli* as a predator of small vertebrates and large arthropods. Bierregaard<sup>2</sup> states that snakes are the principal prey of all *Leucopternis*, suggesting a similar diet for *L. melanops* if this is correct. *L. kuhli* regularly follows foraging primate groups, catching flushed prey such as large tettigoniid orthopterans<sup>12</sup>, but we are unaware of similar commensal behaviour in *L. melanops*. That *L. melanops* has not been recorded following primates probably reflects the paucity of information<sup>3</sup> rather than any differences in foraging habits between the two species. Although there are insufficient data to suggest that these species partition habitat use, it is perhaps noteworthy that while *L. kuhli* was only recorded in primary forest, the two captures of *L. melanops* were in, or very close to, disturbed forest. If, as Bierregaard<sup>2</sup> notes, *L. melanops* favours dense riparian vegetation, then a distribution pattern reflecting that of *L. kuhli* and Slate-coloured Hawk *L. schistacea* in Amazonian Peru, where *L. kuhli* occupies upland forest and *L. schistacea* occupies flood-plain forest<sup>13</sup>, might be expected in our study area.

Our records of *L. melanops* in the Tapajós region demonstrate that these two *Leucopternis* are sympatric in this area, suggesting that they deserve species status and should not, as has been suggested<sup>5,14</sup>, be considered races. Our data also lend some support to the validity of the specimens collected by the Olallas in the 1930s, although the presence of *L. melanops* on the east bank of the Tapajós remains unconfirmed. What is also apparent is the general scarcity of information on these elusive species<sup>3</sup> and the need for further research. Further work in the relatively ornithologically unknown interfluvial forests between the rios Tapajós and Madeira could shed more light on the range of *L. melanops* south of the Amazon, while information on the diet, foraging and habitat use of *L. melanops* and *L. kuhli* may assist in revealing the mechanism by which these similar species are able to coexist.

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