Distribution of Red-fan Parrot *Deroptyus accipitrinus* with notes on its breeding behaviour in Loreto, Peru

Juan Díaz Alván, Jacob B. Socolar, Pedro E. Pérez-Peña, María Isabel Torres-Vásquez, Omar Custodio Azabache and Percy Saboya del Castillo

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El llamativo Loro de Abanico *Deroptyus accipitrinus* es raro y poco conocido en la Amazonía peruana. Presentamos nuevos registros en el departamento de Loreto, entre los años 2005 y 2019, en ambas orillas del río Amazonas. Discutimos las implicancias biogeográficas y las posibles causas de su peculiar distribución en Perú. Adicionalmente, reportamos el primer nido documentado en el país y describimos de manera sistemática las conductas observadas en el nido.

Red-fan Parrot *Deroptyus accipitrinus* is widely distributed in the Guianas and eastern Amazonia, but is much rarer in the western Amazon[5,20]. Two subspecies are recognised, with the nominate distributed north of the Amazon River in eastern Amazonia, and *D. a. fuscifrons* south of the Amazon, but apparently also ranging north of it in western Amazonia[4,5]. The species is categorised as Least Concern by BirdLife International[3], but Peruvian legislation treats the infrequently observed Peruvian populations as Near Threatened[13].

The first Peruvian record was a specimen obtained by Ramón Olalla at 'Andoas', on the upper Pastaza River in 1940[15]. This record agrees geographically with recent reports of the species from the Pastaza basin in Ecuador[14]. Aside of a sighting from the floodplain of the Morona River, mentioned without details by Juniper & Parr[9], no further Peruvian records were obtained for more than 60 years until 2003, when a Field Museum of Natural History (Chicago) expedition encountered the species along the middle Yavarí River (at Quebrada Limera and Buena Vista, see Fig. 1)[10], >500 km south-west of Andoas. There is another specimen from the same area collected by T. Valqui in July 2003, deposited at the Museo de Historia Natural Javier Prado de Lima (MUSM 30631; T. Valqui pers. comm.). The lack of records in the intervening area suggests a local and disjunct range in northern Peru[22]. Socolar *et al.*[21] discussed numerous bird species with patchy distributions in northern Amazonian Peru and provided two possible geographic explanations for these patterns, based on ancestral / relictual distributions and recent / contemporary connectivity, respectively.

Here we report the presence of *D. accipitrinus* at ten additional localities in dpto. Loreto. All populations on both banks of the Amazon are assignable to *D. a. fuscifrons* (see below). We additionally present the first Peruvian observations of the species' reproductive behaviour, and discuss possible factors governing its fragmented Peruvian distribution.

Study area and Methods

Our records were made during numerous expeditions in dpto. Loreto between 2005 and 2019. All observations were made in the drainages of the Morona Itaya, Campuya and Yavarí Rivers (Fig. 1, Table 1). The regional climate is uniformly hot and humid, with a mean annual temperature of 26.5°C and rainfall between 2,400 and 3,100 mm at Iquitos[11].

The surveyed river basins differ substantially in geography and geomorphology (Fig. 1). The Morona is a large north-bank tributary of the Marañón in far western Loreto. The Itaya is a smaller north-bank tributary of the Amazon, draining the lowlands between the Nanay and Tigre Rivers. The only major road in central Loreto, the Iquitos–Nauta highway, crosses the Itaya and divides the basin into a lower portion bordering the Amazonian floodplain, and a poorly explored upper portion, which is reported to contain significant poor-soil formations (R. Aquino pers. comm.) and might harbour a variety of poor-soil forest bird specialists[1,2]. The Campuya is a medium-sized tributary of the Putumayo River[24]. The Yavarí and its tributary the Yavarí-Mirim are south-bank tributaries of the Amazon along the Peru / Brazil border, characterised by extensive white-sand beaches during periods of low water[10]. Although the region is climatologically homogeneous, our records are distributed across three major geologic formations: the Pastaza (Morona River), the Nauta (Itaya and Campuya Rivers) and the Pebas formations (Yavarí River). Differences in soil chemistry across these formations produce important variations in floristics, avifauna and forest types[6,17,18]. Nevertheless, all four regions include habitats associated with poor soils (i.e., highly weathered terraces and areas of black-water drainage).

Our expeditions in these four basins used the rivers for access. Thus, most of our sampling occurred in areas with both upland (*terra firme*) and seasonally flooded (*várzea* / *igapó*) habitats in close proximity to rivers.