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SCIENTIFIC NOTE

First record of *Hadrosciurus igniventris* (Rodentia, Sciuridae) feeding on a fruit of *Magnolia pastazaensis* (Magnoliales, Magnoliaceae)

Primer registro de *Hadrosciurus igniventris* (Rodentia, Sciuridae) alimentándose de una fruta de *Magnolia pastazaensis* (Magnoliales, Magnoliaceae)

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Abstract

Knowledge of the ecology of Neotropical squirrels is incomplete. We report the first recorded event of a *Hadrosciurus igniventris* (northern amazon red squirrel) consuming oleaginous seed arils from the fruit of a *Magnolia pastazaensis* tree, which is endemic to Ecuador and categorized as Endangered. The event occurred on April 17, 2024, in the Oglán Alto Protected Forest in the province of Pastaza. Previous reports had only recorded this squirrel consuming fruits from palms (Arecaceae) and legumes (Fabaceae).

Keywords: Dispersion, Endangered, natural history, Pastaza, seeds, native plant.

Resumen

El conocimiento de la ecología de las ardillas neotropicales es incompleto. Reportamos por primera vez un evento de *Hadrosciurus igniventris* (ardilla roja norte amazónica) consumiendo los arilos oleaginosos de las semillas de una fruta de *Magnolia pastazaensis*, un

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árbol endémico de Ecuador y categorizado como En Peligro. El evento ocurrió el l7 de abril de 2024 en el Bosque Protector Oglán Alto, provincia de Pastaza. Previamente solo se ha reportado el consumo de frutos de palmas (Arecaceae) y leguminosas (Fabaceae) por parte de esta ardilla.

Palabras clave: Dispersión, En Peligro, historia natural, Pastaza, semillas, planta endémica.

Sciuridae is the second most diverse rodent family; squirrels play an important role as seed dispersers, but knowledge of the ecology of Neotropical species is incomplete (Mendes et al., 2019). In Ecuador, 10 species of squirrels have been recorded; three belong to the genus *Hadrosciurus* and are distributed throughout the Amazon (*H. pyrrhinus*, *H. spadiceus* and *H. igniventris*; Tirira, 2017). One of these, *Hadrosciurus igniventris* (northern Amazon red squirrel), is also found in Brazil, Venezuela, Colombia, and Peru (Wilson & Reeder, 2005).

The *Magnolia* plant genus (Magnoliales, Magnoliaceae) has 24 species reported for Ecuador (Pérez et al., 2023). Of these, M. pastazaensis is an endemic species that is distributed in the Amazonian provinces of Pastaza and Napo between 400 and 1100 m of elevation (Arroyo & Pérez, 2013; Vázquez-García et al., 2015) and is listed as Endangered according to the *IUCN Red Book* (IUCN, 2024). The floral biology of Ecuadorian magnolias is poorly known (Vázquez-García et al., 2015); it has been reported that their pollinators are beetles, and it is speculated that frugivorous birds act as their seed dispersers (Vázquez-García et al., 2015).

The plant-animal interaction event we documented occurred in the Oglán Alto Protected Forest (01°20’37” S, 77°40’22” W, 870 m) in the province of Pastaza, a locality characterized by the vegetation classification of premontane evergreen forest of the northeastern range of the Andes (MAE, 2013). Representative species include *Iriartea deltoidea* (Arecaceae), *Citronella incarum* (Cardiopteridaceae), *Inga ciliata* (Fabaceae), and *Otoba glycycarpa* (Myristicaceae), among others; 29 species of mammals have also been recorded in the locality (Jácome-Negrete et al., 2024).

On April 7, 2024, starting at 06:48 h, we observed an individual of *H. igniventris* feeding on seed arils from the fruit of a *Magnolia pastazaensis* tree. For 14 minutes, the squirrel suspended itself vertically, with its head pointing downwards, to access the distal end of the fruit; it took the seeds one by one using its snout and front limbs, returned to the proximal end of the fruit, and proceeded to consume the red aril of the seed (Figure 1, https://youtu.be/5EnMc2Vh08); it then discarded the seed and repeated the process described above. Once the resource was entiredly consumed, it quickly moved away from the site.

We identified the squirrel species by the presence of pale orange postauricular patches and orange hands and feet (Tirira, 2017; Figure 1). We determined the identity of *Magnolia pastazaensis* by examining its distribution and by noting the annular scars on the branches, the prominent terminal stipule, and its globose equinate fruits (Arroyo & Pérez, 2013; Vázquez-García et al., 2015).

Palm fruits (Arecaceae) are known to be the most common in the diet of Neotropical squirrels (Mendes et al., 2019). In Brazil, it has been reported that *H. igniventris* consumes the endocarps of *Attalea maripa* (Arecaceae) fruit and Bruchidae (Coleoptera) larvae that live in these fruits (Silvius, 2012). In the western Amazon, the consumption of fruits of the genera *Astrocaryum* and *Attalea* (Arecaceae) and *Dipteryx* (Fabaceae) has been reported (Emmons, 1984); in the province of Napo, Ecuador, *H. igniventris* was the second most frequent species after *Dasypus novemcinctus* (Cingulata, Dasypodidae) to visit the fructifications of *Socratea* spp. and *Iriartea deltoidea* (Arecaceae; Álvarez-Solas et al., 2019).

Understanding species’ roles and interactions within ecosystems holds significance for conservation efforts; in this case, we identify a previously unknown seed disperser. This report is particularly relevant because consumption of resources from this plant family

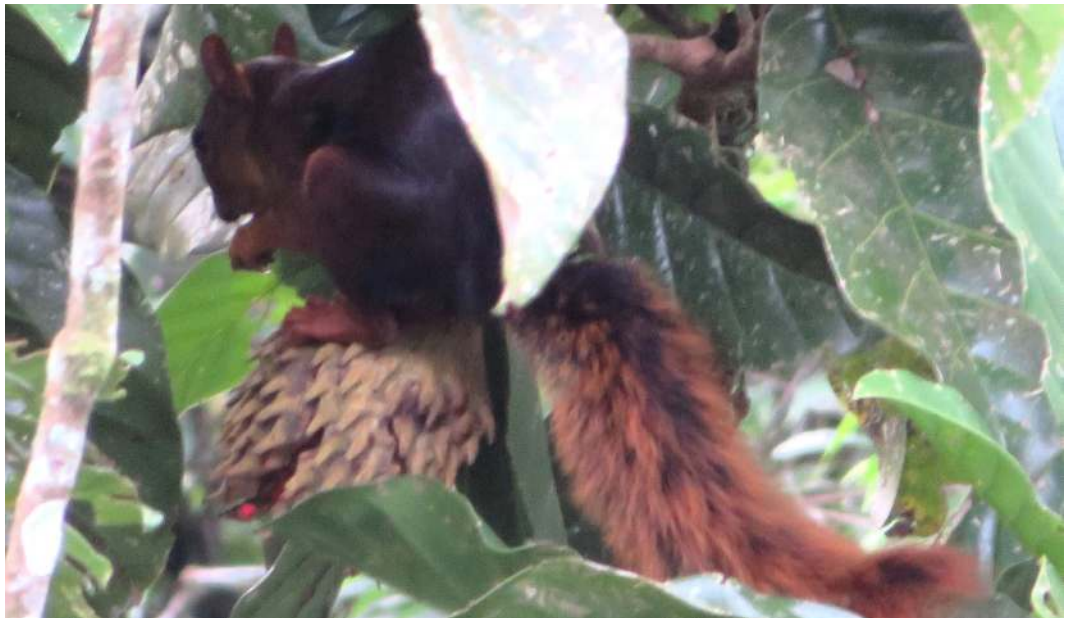


Figure 1. *Hadrosciurus igniventris* while feeding on a *Magnolia pastazaensis* seed aril, Oglán Alto, Pastaza, Ecuador. Photograph by H. Cadena.



Figure 2. Fruits of *Magnolia pastazaensis*, road to Arajuno, Pastaza, Ecuador. Photograph by K. Suárez & B. Aguilar.

(Magnoliaceae) has not been previously reported for *H. igniventris*. In addition, this is the first record of a mammal consuming the oily seed aril of a Neotropical *Magnolia*. Although there is still much to learn about the interaction between magnolias and their seed dispersers and predators, we provide information in this report that will aid management plans for threatened Ecuadorian magnolias, such as *Magnolia pastazaensis*.

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Participation of authors: HC, writing the text, analyzing the data, and taking the photographs. KC, writing the text and analyzing the data.

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