Revealing hidden biodiversity: Novel insights on Reptile and Amphibian Distribution in Western Ecuador

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Abstract

We present notable distributional updates for 13 species from western Ecuador (six amphibians and seven reptiles). Our findings include the northernmost confirmed sighting of Pristimantis kuri (Yáñez-Muñoz et al. 2016) and the southernmost documented appearance of Imantodes inornatus (Boulenger 1896) and Lepidoblepharis buchwaldi (Werner 1910). Additionally, we document new records and notes of distribution range of Agalychnis spurrelli (Boulenger 1913), Hylochromis alytolyza (Duellman 1972), Engystomops montabio (Ron et al. 2004), Pristimantis nyctophylax (Lynch 1976), Pristimantis walkeri (Lynch 1974), Chironius flavopictus (Werner 1909), Chironius grandisquamos (Peters 1869), Dendrophidion graciliverpa (Cadle 2012), Ninia atrata (Hallowell 1845), and Urotheca fulviceps (Cope 1886). These observations significantly contribute to filling information gaps in our understanding of these species’ distributions. The data, derived from samples collected across diverse forested areas in the western region of Ecuador (provinces of Cañar, Guayas, El Oro, and Los Rios), provide valuable insights into the ecology and conservation of these species.
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We present notable distributional updates for 13 species from western Ecuador (six anfibians and seven reptiles). Our findings include the northernmost confirmed sighting of *Pristimantis kuri* (Yánez-Muñoz et al. 2016) and the southernmost documented appearance of *Imantodes inornatus* (Boulenger 1896) and *Lepidoblepharis buchwaldi* (Werner 1910). Additionally, we document new records and notes of distribution range of *Agalychnis spurrelli* (Boulenger 1913), *Hyloscirtus alytolylax* (Duellman 1972), *Engystomops montubio* (Ron et al. 2004), *Pristimantis nyctophylax* (Lynch 1976), *Pristimantis walkeri* (Lynch 1974), *Chironius flavopic tus* (Werner 1909), *Chironius grandisquamis* (Peters 1869), *Dendrophidion graciliverpa* (Cadle 2012), *Ninia atrata* (Hallowell 1845), and *Urotheca fulviceps* (Cope 1886). These observations significantly contribute to filling information gaps in our understanding of these species’ distributions. The data, derived from samples collected across diverse forested areas in the western region of Ecuador (provinces of Cañar, Guayas, El Oro, and Los Ríos), provide valuable insights into the ecology and conservation of these species.

Keywords: Guayas, biogeography, western Ecuador, Geographic range extension, *Urotheca*, *Pristimantis*, *Agalychnis*, *Hyloscirtus*, *Imantodes*.

Introduction

The western forests of Ecuador have been categorized as areas experiencing biological extinction (Dodson and Gentry 1991), primarily due to habitat destruction, land-use changes, and climate variations (Griffis-Kyle et al. 2018). Various anthropogenic activities directly influence changes in species distributions (Turvey et al. 2018). Deforestation rates are notably linked to the establishment of permanent crops, as observed in the Guayas River basin (Sierra 2013). For instance, the province of Los Ríos stands out as one of the most heavily altered regions in terms of flora and fauna due to extensive habitat destruction driven by agricultural expansion (Cornejo 2011). Cuesta et al. (2017) highlight that 47% of coastal habitats suffer continual deforestation.

Ecuador is home to a particular diversity of amphibians and reptiles and is intersected by two pivotal biodiversity hotspots in South America: the Tumbes-Chocó-Magdalena and Tropical Andes regions, fostering elevated levels of diversity and endemism (Myers et al. 2000). Amphibians and reptiles serve as crucial ecosystem health indicators, reflecting environmental stressors and playing fundamental roles in the food chain, bridging aquatic and terrestrial ecosystems (Steinke 2016; Prasad et al. 2018).

Amphibians and reptiles face severe pressure from anthropogenic activities, rendering them more threatened compared to birds and mammals (Stuart et al. 2004). Climate change, a consequence of human activities, poses a critical challenge for amphibians, impacting their metabolic processes, susceptibility to diseases, organismal growth, development, and reproductive patterns (Griffis-Kyle et al. 2018; Cheza et al. 2020). To cope with these threats to their niche and survival, they often resort to strategies such as migrations (Sinsch 1990). Consequently, studies have focused on assessing responses to environmental changes by examining shifts in distribution ranges (Ehrlén and Morris 2015).

Despite the adversities faced by these taxa, research on the composition of herpetofaunal communities in central and southern western Ecuador ecosystems remains limited. The continuous and rapid loss of habitats further exacerbates the lack of information on amphibians and reptiles (Armijos-Ojeda et al. 2021; Kleemann et al. 2022). Several species such as *Atractus microrhynchus*, *Chironius flavopedicus*, or *Pristimantis tenebrionis*, have not been reported again in the places where they were discovered since their description. Recent studies have provided new perspectives on the distribution of herpetofauna in Ecuador (Guayasamin
Information about the distribution of the species are crucial in comprehensively understanding and documenting species compositions in remote locations, such as the southwest western foothills of the Andes in Ecuador. This manuscript aims to report on several new extensions of distribution ranges observed in the provinces of Los Ríos, Guayas, El Oro and Cañar, which lie adjacent in the southwest region of Ecuador. Los Ríos and Guayas and most of El Oro represent lowland areas, while Cañar and some areas of El Oro encompass highland regions.

Methods

The samplings were conducted in ten tropical forests in western Ecuador, from January 2014 to December 2023, utilizing non-systematic sampling, a search that was both free and unrestricted, visual recordings, and manual capture methods (Rödel and Ernst 2004). According to the Ministerio del Ambiente del Ecuador (2013), four of the ten forests sampled presented a seasonal foothill evergreen forest of the western Cordillera de Los Andes; these sites were: 1) The Cerro de Hayas Provincial Natural Recreation Area (camp point: 2° 43' 50.9'' S, 79° 37' 43'' W, alt. 120 m), in the foothills of the Molleturo-Mollepungo mountain range, Naranjal canton, Guayas province, Ecuador. Cerro de Hayas is a private reserve that protects 631 ha of forests in mountainous landscapes with streams and waterfalls. 2) Rancho Alemán (Camp point: 2° 20' 13.6'' S, 79° 12' 46.8'' W, alt. 235 m), in the western foothills of the Cordillera de Los Andes, El Triunfo canton, Guayas province, Ecuador. Rancho Alemán is an ecotourism farm that has 25 ha of forest in mountainous landscapes with streams and surrounded by the Blanco River. 3) San Pablo town (Camp point: 2° 20' 55'' S, 79° 10' 28.9'' W, alt. 431 m), in the western foothills of the Cordillera de Los Andes, Cañar canton, Cañar province, Ecuador. This site is a small town that is surrounded by mountains, ravines and small waterfalls, on the site there are patches of forests and areas dedicated to agriculture. And 4) Cascadas de Manuel (Camping point: 3° 12' 23.1'' S, 79° 44' 9.8'' W, alt. 182 m) located in the El Guabo canton, El Oro province. It has mature forest extension, occupies almost the entire micro-basin with a dense tree cover, also presents an interior vegetation based on herbaceous and shrubs.

Three forests are evergreen foothill forest of the western Cordillera de Los Andes, which were: 5) The surroundings of the El Progreso farm (Camping point: 2° 7' 39.4'' S, 79° 7' 17'' W, alt. 944 m) in the western foothills of the Cordillera de Los Andes, General Antonio Elizalde canton, Guayas province, Ecuador. This site is a tourist farm that presents forest patches with mountainous landscapes with streams, ravines, waterfalls and crop areas. 6) El bosque del Amigo farm (Camping point: 2° 17' 3.5'' S, 79° 6' 23'' W, alt. 879 m), in the western foothills of the Cordillera de Los Andes, Cañar canton, Cañar province, Ecuador. This site is an ecotourism farm that has 300 ha, has large tracts of forest with mountains, a large number of small streams and small areas for agriculture. 7) The surroundings of the Ocaña (Camping point: 2° 29' 3.7'' S, 79° 15' 12.2'' W, alt. 946 m), in the western foothills of the Cordillera de Los Andes, Cañar canton, Cañar province, Ecuador. There were large patches of forest on sloping slopes of the Río Cañar. The forests were dense with predominantly shrubby vegetation and herbaceous vegetation in its interior.

Other ecosystems were, Evergreen seasonal lowland forest of Jama-Zapotillo that was 8) Pedro Franco Dávila Protected Forest (Camp point: 1° 14' 44.2'' S, 79° 39' 36'' W, alt. 50 m), in the central region of the Ecuadorian coast, Palenque canton, Los Ríos province, Ecuador. This site has 140 ha of protected forest, due to the characteristics of a tropical humid forest, two climatic seasons are defined: rainy season (January-May) and dry season (June-December). In addition, it presents mainland forest, rivers, streams and small swampy areas. 9) The surroundings of Mocache (Camping point: 1° 9' 40.9'' S, 79° 30' 29.4'' W, alt. 57 m), Vinces canton, Los Ríos province, Ecuador. It is located on the banks of the Vences River, has small fragments of intervened forest. Its vegetation is sparse, it has few shrubs and abundant leaf litter. 10) The surroundings of Macul (Camping point: 1° 36' 22.1'' S, 79° 50' 58.8'' W, alt. 18 m), Vinces canton, Los Ríos province, Ecuador. Located next to the river, it has small remnants of intervened forest rich in litter, but with very
little shrub and herbaceous vegetation.

These ten forests are one of the few remaining remnants of tropical forest in the province of Cañar, Guayas, El Oro and Los Ríos are currently threatened by agricultural expansion, logging, mining, and illegal hunting.

Specimens were hand-captured, photographed, and euthanized using 2% roxicaine anesthetic solution, fixed in 10% formalin, and preserved in 70% alcohol. The specimens are deposited in the Museo de Zoología de la Pontificia Universidad Católica del Ecuador (QCAZ), Quito, Ecuador; and in the Museo de Zoología, Universidad San Francisco de Quito (ZSFQ), Quito, Ecuador. Snout-vent length (SVL) measurements were taken with digital calipers and rounded to the nearest 0.1 mm for small specimens, and with a tape measure for longer specimens. The coordinates and elevation were taken with a Garmin GPSMAP 62st GPS equipment. Maturity and sex were determined by eversion and exposure of the sexual organs. Specimens were collected under permit No. MAE-DPALR-UPN-UB-2015-002, 008-2015-IC-FLO/FAU-DPG/MAE, MAAE-DBI-DBI-CM-2022-0222, MAAE-ARSFC-2022-2204 and No. MAATE-ARSFC-2023-0063 approved by the Ministerio del Ambiente, Agua y Transición Ecológica.

Results

The records of this study provide significant contributions to our understanding of the herpetofauna distribution in the western foothills of the Ecuadorian Andes. In the Guayas province, this study reports the first records of *Chironius grandisquamis*, *Imantodes inornatus*, *Ninia atrata*, *Pristimantis kuri*, *Pristimantis nyctophylax* and *Urotheca fulviceps*. It should be noted that the record of *Chironius flavopictus* in Guayas has been updated, with no records collected since its initial discovery by Werner (1909). This study also presents the northernmost reported record of *Pristimantis kuri* and the southernmost known records of *Imantodes inornatus* and *Lepidoblepharis buchwaldi*. Additionally, new records for the Cañar province include *Agalychnis spurrelli*, *Dendrophidion graciliverpa*, *Lepidoblepharis buchwaldi*, *Pristimantis kuri*, *Pristimantis nyctophylax*, *Pristimantis walkeri* and *Urotheca fulviceps*. And finally, the first records of *Engystomops montubio* and *Chironius flavopictus* for the province of Los Ríos, further enriching our knowledge about the distribution of these species.

Class Amphibia: Order Anura: Family Hylidae

*Agalychnis spurrelli* (Boulenger, 1913)

![Figure 1](image-url)

**Figure 1.** Photographs of *Agalychnis spurrelli* (1A and 1B) and its distribution map (1C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records**. ECUADOR - Cañar * Canar Canton, San Pablo town; 2deg 20’ 26.9” S, 79deg 10’ 42.2” W; alt. 420 m; 12.III.2023; Keyko Cruz-Garcia leg.; found perched on a branch between 120 to 190 cm above
The individuals of this species were exclusively found along the edge of a secondary road near a water puddle, and they were not present within lightly intervened forest areas.

**Identification.** (Figure 1A and 1B) Medium to large-sized frog with extensive interdigital membranes; yellow, orange, pale pink, or pale purple color on flanks and limbs; lacking dark vertical stripes; usually presents cream-colored warts bordered in black on the dorsal side; smooth dorsal skin; granular ventral surface; indistinct parotoid glands; visible tympanum; acuminated or sub-acuminated snout in dorsal view; round and conspicuous rostral ridge; concave loreal region; thin, moderately flared lips; protruding, large eyes; dark crimson red iris with thin black reticulations; vertical elliptical pupil; nictitating membrane with golden reticulations; spiny nuptial pad at the base of the thumb in adult males; Finger I (manual) and toe I (pedial) shorter than finger II and toe II, respectively; large disks, all larger than the tympanum (Savage 2002; Ortega-Andrade 2008; Ron et al. 2022)

**Distribution.** It is distributed from the central western lowlands of Costa Rica to the Pacific lowlands of Colombia (Valle del Cauca and Choco) and Ecuador. According to Ortega-Andrade (2008), its distribution in Ecuador covers an area of 19,550 km² and is present in seven provinces of Ecuador (Esmeraldas, Los Rios, Manabi, Pichincha, Carchi, Santa Elena, El Oro). Its altitudinal range extends from 70 to 1000 m a.s.l. (Ortega-Andrade 2008; Yanez-Munoz et al. 2019; Ron et al. 2022). The current record fills a 328 km information gap in the known distribution of the western foothills of the Andes (Figura 1C). The closest record to the north is situated 194 km away, while the nearest record to the south is positioned at a distance of 154 km. The northernmost nearby locality is positioned 57 km away (Hacienda Cerro Chico, Los Rios province; Ortega-Andrade 2008), and the southernmost is located at a distance of 48 km (El Remolino, El Oro province; Pontificia Universida del Ecuador 2021a).

*Hyloscirtus alytolylax* (Duellman, 1972)

**New Records.** ECUADOR - Cañar * Canar Canton, El bosque del Amigo farm; 2deg 16’ 34.6” S, 79deg 5’ 55” W; alt. 668 m; 17.IX.2023; Keyko Cruz-Garcia leg.; found perched on a leaf 3m high over a ravine in secondary forest on one bank and a small banana plantation on the other; SVL 37.92 mm; 1 (sex indet.); MUTPL-A 1671. * Canar Canton, San Antonio de Paguancay parish, Ocana; 2deg 29’ 56.7” S, 79deg 14’ 52.4” W; alt. 495 m; 6.VII.2008, 24.II.2014.23.IX.2015; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Elvis Celi leg.; In the stream edge; SVL 18.78 mm; 18.86 mm; 18.70 mm; 3 ; MZUA-An.0043; MZUA-An.0982; MZUA-An.1536.
**Identification.** (Figure 2A and 2B) It is a medium-sized frog that has the characteristics of having a head slightly wider than the body; top of head flat, snout short, rounded in dorsal view, rounded in lateral view in males and truncated in females; rostral edge rounded; concave loreal region; nostrils not protruding; internal area slightly depressed; thin, round lips; eyes not very protruding; weak supratympanic fold, curved downwards, obscuring the upper edge of the eardrum; tympanic ring evident ventrally; eardrum slightly smaller than half the diameter of the eye; axillary membrane absent; forearm robust, with ulnar fold; short fingers with short discs; Disc of Finger III slightly wider than eardrum; rudimentary membranes between the fingers; hind limbs moderately robust; dermal fold in the knee; calcar usually absent; internal tarsal fold absent; external tarsal fold extends along the entire length of the tarsus; long toes; discs slightly smaller than those of the fingers; extensive webbing between toes; cloacal opening directed posteriorly at the upper level of the thighs; belly skin weakly granular; skin on other body surfaces smooth; bilobed and subgular vocal sac. A cream line extends along the rostral canthus, eyelid margin, and supratympanic fold (Duellman 1972).

**Distribution.** This species is known to occur on the Pacific slopes of the Andes in southern Colombia and through western Ecuador to Oro province, between 400 to 2000 m a.s.l. (Guayasamin et al. 2015; Frost 2023). The current records enhance our understanding of the species distribution in the western foothills of the Andes, filling an information gap of 120 km (Figure 2C). The closest northern locality is positioned at a distance of 57 km (Balzapamba, Bolivar province; GBIF 2024), while the closest southern one is situated 48 km away (San Miguel, Guayas province; Instituto Nacional de Biodiversidad 2022).

*Class Amphibia: Order Anura: Family Leptodactylidae*

*Engystomops montubio (Ron, Cannatella, and Coloma, 2004)*

**Figure 3.** Photographs of *Engystomops montubio* (3A and 3B) and its distribution map (3C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - Los Ríos * Palenque Canton, Pedro Franco Davila Protected Forest; 1deg 14’ 25.8” S, 79deg 39’ 59.4” W; alt. 72 m; 12.III.2023; Keyko Cruz-Garcia leg.; found foraging in the leaf litter next to a trail.; SVL 22.71 mm; 1; MZUA-An.1664. * Mocache Canton; 1deg 9’ 40.7” S, 79deg 30’ 29.2” W; alt. 57 m; 12.I.2014; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Elvis Celi leg.; Between semi-submerged leaf litter in a small puddle near a wetland; SVL 18.78 mm; 18.86 mm; 2; MZUA-An.0919; MZUA-An.0920.

**Identification.** (Figure 3A and 3B) It is a very small frog, light brown in color with dark spots and a whitish belly speckled with brown; it has an average SVL (snout-vent length) in males of 20.6 mm and in females of 18.52 mm; subacuminate snout in dorsal view and rounded in lateral view; evident tympanic ring,
dorsally hidden; non-tuberculated tympanic membrane; Finger I shorter than Finger II; nuptial pads present; absent tarsal tubercle; the dorsum bears numerous rounded or subconical tubercles; glands present on the flank; parotoid glands present; maxillae and premaxillae present; vomerine odontophores absent; vomerine dentigerous process thin and pointed (like a spine) (Ron et al. 2004)

**Distribution.** This frog is endemic to western Ecuador and is distributed in the provinces of Manabi, Santa Elena, and Guayas. Its altitudinal range extends from sea level up to 200 m a.s.l. (Ron et al. 2004; Cisneros-Heredia 2006; Frost 2023). The records presented here constitute the easternmost known record of the species, with the nearest locality being at a distance of 56 km (Santa Ana, Manabi province; Pontificia Universidad Catolica del Ecuador 2021a) (Figure 3C).

*Class Amphibia: Order Anura: Family Strabomantidae*

**Pristimantis kuri** (Yanez-Munoz, Sanchez-Nivicela, and Reyes-Puig, 2016)

![Figure 4.](image)

**Figure 4.** Photographs of *Pristimantis kuri* (4A and 4B) and its distribution map (4C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - GUAYAS * El Triunfo Canton, Rancho Alemán; 2° 20’ 13.9” S, 79° 12’ 44.3” W; alt. 292 m; 08.III.2023; Nadia Chauca leg.; found perched among trunk moss 150 cm above the ground in mountains with secondary forest; SVL 36.5 mm ; 1 (sex indet.); ZSFQ5263. * General Antonio Elizalde Canton, El progreso farm; 2deg 7’ 46.2” S, 79deg 6’ 51.5” W; alt. 918 m; 09.III.2023; Natalia Zapata-Salvatierra leg.; found perched on a trunk 180 cm high on a tourist trail to a waterfall; SVL 44 mm ; 1 (sex indet.); ZSFQ5264. * General Antonio Elizalde Canton, El Progreso farm; 2deg 7’ 45.1” S, 79deg 6’ 52.6” W; alt. 927 m; 09.III.2023; Keyko Cruz-Garcia leg.; found perched on a branch 102 cm high on a tourist trail to a waterfall; SVL 42 mm ; 1 (sex indet.); ZSFQ5265. - CANAR * Canar Canton, San Pablo town; 2deg 20’ 16.1” S, 79deg 10’ 38.3” W; alt. 463 m; 12.III.2023; Natalia Zapata-Salvatierra leg.; found perched on a branch at a height of 230 cm in a stream with secondary forest on both sides.; SVL 23 mm ; 1 (sex indet.); ZSFQ5188. * Canar Canton, San Antonio de Paganucay parish, Ocana; 2deg 29’ 23.6” S, 79deg 11’ 5.6” W; alt. 961 m; 29.VIII.2014; Juan C. Sanchez-Nivicela, Veronica L. Urgiles leg.; Found perched among medium vegetation (not higher than 1.7m) within a forest remnant; SVL 40.33 mm; 40.75 mm; 29.45 mm; 3 ; MZUA-An.1319, MZUA-An.1323, MZUA-An.1329; SVL 29.25 mm; 1 ; MZUA-An.1317; SVL 18.79 mm; 14.62 mm; 2 (juveniles); MZUA-An.1320, MZUA-An.1321. * Canar Canton, San Antonio de Paganucay parish, Ocana; 2deg 29’ 3.7” S, 79deg 15’ 12.2” W; alt. 946 m; 29.VI.2016; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Karla Neira, Amanda Quezada leg.; Found perched among medium vegetation (not higher than 1.7m) within a forest remnant; SVL 29.62 mm; 1 ; MZUA-An.1717; SVL: 15.87 mm; 17.93 mm; 10.91 mm; 3 (juveniles); MZUA-An.1682, MZUA-An.1718, MZUA-An.1721.
Identification. (Figure 4A and 4B) It is a small frog; its back is variable between beige and brown and it presents a dermal crest in the scapular region in the shape of an ’H’. It has a conical tubercle on the eyelid and heel, and several subconical ones on the tarsus, its toe discs are expanded, and it lacks a basement membrane between the toes. It has an average SVL range of 26.1mm. The head presents an interorbital bar, canthal and labial bars. The rear of the flanks, the groins, and the anterior surfaces of the legs are black or dark brown with white reticulations. The belly is variable between black and gray with solid white spots. The coloration of the iris is copper with black diagonal lines and a reddish horizontal midline (Yanez-Munoz et al. 2016).

Distribution. This species is only known from two localities within forests in the southern Western Cordillera of the Andes, in the Catamayo-Alamor area, in the province of El Oro. Its altitudinal range goes from 800 to 900 m a.s.l. (Yanez-Munoz et al. 2016; Paez-Rosales and Ron 2022). Our record represents the northernmost occurrence of *P. kuri*, situated 294 km south of the closest record for this species (Reserva Ecológica Manglares Charute, Guayas Province; Pontificia Universidad Católica del Ecuador 2021a) (Figure 4C). This record also represents an altitudinal record for the species, since this species has been reported at altitudes greater than 800 m and one of our records was found at 292 m a.s.l.

**Pristimantis nyctophylax** (Lynch, 1976)

![Pristimantis nyctophylax](image)

Figure 5. Photographs of *Pristimantis nyctophylax* (5A and 5B) and its distribution map (5C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

New Records. ECUADOR - GUAYAS * El Triunfo Canton, Rancho Alemán; 2° 20’ 13.6” S, 79° 12’ 46.8” W; alt. 286 m; 06.X.2022; Keyko Cruz-García leg.; found in amplexus perched on a bush leaf over the water of a ravine at a height of 120 cm; SVL 33 mm, 22 mm; 1, 1; QCAZA78111, QCAZA78112. - CANAR * Canar Canton, El bosque del Amigo farm; 2deg 16’ 57.7” S, 79deg 6’ 2.5” W, alt. 783 m; 11.III.2023; Keyko Cruz-García leg.; found perched on a leaf petiole, 190 cm above the ground, over a temporary stream with secondary vegetation on the margins and a significantly steep slope; SVL 17 mm; 1 (sex indet.); ZSFQ5267. * Canar Canton, San Antonio de Paguancay parish, Ocana; 2deg 29’ 23.8” S, 79deg 11’ 5.8” W; alt. 961 m; 25-26.VIII.2014; Juan C. Sanchez-Nivicela, Veronica L. Urgiles leg.; Found perched on leaves and small branches, between 60 cm and 150 cm., inside forest remnants; SVL 29.35 mm; 21.83 mm; 21.75 mm; 23.96 mm; 22.55 mm; 23.35 mm; 24.83 mm; 7; MZUA-An.1318, MZUA-An.1324, MZUA-An.1325, MZUA-An.1326, MZUA-An.1328, MZUA-An.1330, MZUA-An.1393. * Canar Canton, San Antonio de Paguancay parish, Ocana; 2deg 29’ 3.7” S, 79deg 15’ 12.2” W; alt. 946 m; 28—29.VI.2016; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Karla Neira, Amanda Quezada leg.; Found among shrubby vegetation, between 120 cm and 200 cm, within a remnant of forest; SVL 37.14 mm; 34.19 mm; 2; MZUA-An.1681, MZUA-An.1720.

Identification. (Figure 5A and 5B) It is a small to medium-sized frog with a cream-brown to brown back,
expanded discs on the fingers, yellow or red sclera, and irises with well-defined black reticulations. The SVL range is from 26.8 mm to 33.8 mm. It has slightly granular dorsal skin; belly ringed; prominent discoid fold; dorsolateral folds absent; prominent tympanic membrane and ring; eardrum taller than long (Lynch and Duellman 1997; Frenkel et al. 2022).

**Distribution.** It is distributed only on the western flanks of the Andes of Ecuador. It has been recorded in the provinces of Cotopaxi, Pichincha and Santo Domingo de los Tsachilas and less frequently in Azuay, Bolivar, Esmeraldas, Imbabura, El Oro. The known altitudinal range is from 1140 to 2100 m a.s.l. (Lynch and Duellman 1997; Yanez-Munoz et al. 2019; Pontificia Universidad Catolica del Ecuador 2021a). The present records address an information gap spanning 136 km, with the nearest northern locality to our observations situated 65 km away (Bosque Protector Cashca Totoras, Bolivar province; Pontificia Universidad Catolica del Ecuador 2021a), and the closest southern locality positioned at a distance of 52 km (San Miguel, Guayas province; Instituto Nacional de Biodiversidad 2022) (Figure 5C).

**Pristimantis walkeri** (Lynch, 1974)

![Figure 6. Photographs of Pristimantis walkeri (6A and 6B) and its distribution map (6C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.](image)

**New Records.** ECUADOR - Cañar * Cañar Canton, San Pablo town; 2deg 21’ 17” S, 79deg 10’ 47.7” W, alt. 519 m; 11.IX.2023; Keyko Cruz-Garcia; found perched on a bush leaf 150 cm high in the middle of the road covered with low vegetation; SVL 18.32 mm; 1 (sex indet.); MUTPL-A 1659. * Cañar Canton, El bosque del Amigo farm; 2o 17’ 7.8” S, 79o 6’ 19.8” W, alt. 877 m; 11.III.2023; Nadia Chauca; found vocalizing on a branch at 100 cm height over a temporary intermittent stream with secondary vegetation on the margins and a significantly steep slope; SVL 17 mm; 1 (sex indet.); ZSFQ5212. * Cañar Canton, San Pablo town; 2deg 21’ 4.8” S, 79deg 10’ 57.1” W, alt. 636 m; 12.IX.2023; Natalia Zapata-Salvatierra; found perched on a bush leaf 200 cm high on the side of a steep slope, it was vocalizing; SVL 18.29 mm; 1; MUTPL-A 1654. * Cañar Canton, San Pablo town; 2deg 21’ 13.5” S, 79deg 10’ 49.6” W, alt. 610 m; 12.IX.2023; Natalia Zapata-Salvatierra; found perched on a bush leaf in secondary mainland forest at 170 cm high; SVL 18.59 mm; 1 (sex indet.); MUTPL-A 1661. * Cañar Canton, San Antonio de Paguancay parish, Ocana; 2deg 29’ 57.01” S, 79deg 14’ 52.35” W; alt. 494 m; 23.IX.2015; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Karla Neira, leg.; Found among low bushes between 70 cm and 160 cm, inside the forest; SVL 26.73 mm; 31.81 mm; SVL 20.33 mm; 27.82 mm; 19.05 mm; 5; MZUA-An.3180, MZUA-An.3181, MZUA-An.3184, MZUA-An.3193, MZUA-An.3194; SVL 19.6 mm; 1; MZUA-An.3186.

**Identification.** (Figure 6A and 6B) It is a very small frog with brown and groin coloration, and the hidden surfaces of the thighs have yellow to orange spots on a brown to gray background. The SVL range is from 16.2 mm to 21.6 mm. The discs of its fingers are widely expanded, lacking a basal webbing between the pedal
digits. The dorsal skin is slightly granular, while the ventral surface displays an areolate pattern. There are no dorsolateral folds present. The tympanic membrane and annulus are prominent. The upper eyelid lacks tubercles. Finger I of the hand is shorter than Finger II. Weak tubercles are present on the tarsus. Fingers of the hands have cutaneous ridges. Toe V is much longer than Toe III (Lynch and Duellman 1997).

**Distribution.** It is a species of frog endemic to the western region of Ecuador, found in the lowlands of Choco and adjacent western foothills of the Ecuadorian Andes, suggesting a possible presence in Colombia. In Ecuador, it has been recorded in several provinces, including Azuay, Bolivar, Carchi, Cotopaxi, El Oro, Esmeraldas, Guayas, Loja, Los Rios, Manabi, Pichincha, Santa Elena, and Santo Domingo de los Tsachilas (Lynch 1974; Frost 2023; Pontificia Universidad Catolica del Ecuador 2021a). The record presented here is the first documented record for the Province of Canar (Figure 6C).

**Class Reptilia: Order Squamata: Family Sphaerodactylidae**

*Lepidoblepharis buchwaldi* (Werner, 1910)

![Figure 7.](image)

**New Records.** ECUADOR - Cañar * Canar Canton, El bosque del Amigo farm; 2deg 16' 42.6" S, 79deg 6' 42.1" W; alt. 810 m; 11.III.2023; Keyko Cruz-Garcia leg.; Found foraging in leaf litter beside the road; SVL 26.3 mm; 1 ; ZSFQ5272. - El Oro * El Guabo Canton, Las Cascadas de Manuel; 3deg 12' 22.4" S, 79deg 12' 22.4" W; alt. 182 m; 07.VI.2014; Juan Carlos Sanchez, Veronica L. Urgiles leg.; Found among the fallen leaves on the ground, near one of the waterfalls; SVL 23.87 mm; 1 ; MZUA-Re.0213.

**Identification.** (Figure 7A and 7B) It is a small-sized lizard with homogeneous dorsal scales, which are small and larger than the scales on the surface of the head. The scales are smooth or with a slightly pronounced keel, juxtaposed. The lamellae on the fourth toe range from 9 to 11. The mental scale has a concave posterior edge with the margin forming an inverted V shape, with two notches present or absent (Peters and Donoso-Barros 1970; Calderon-Espinosa and Medina-Rangel 2016).

**Distribution.** This species is endemic to an estimated area of 46,529 km2 in the Tumbesian lowlands and adjacent foothills of the Andes in Ecuador, at altitudes ranging from 4 to 1,029 m a.s.l. In Ecuador, it has been reported in the provinces of El Oro, Guayas, Los Rios, Cotopaxi, Manabi, Esmeraldas, Santo Domingo de los Tsachilas, and Azuay (Peters and Donoso-Barros 1970; Avila-Pires 2001; Torres-Carvajal 2001; Yanez-Munoz et al. 2019; Arteaga 2021). This record is the first documented record of this species in the Canar Province (Figure 7C).

**Class Reptilia: Order Squamata: Family Colubridae**
**Chironius flavopictus** (Werner, 1909)

**Figure 8.** Photographs of *Chironius flavopictus* (8A and 8B) and its distribution map (8C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - Guayas * El Triunfo Canton, Finca La Meca Tabamesa; 2° 16’ 42.4” S, 79° 13’ 4.6” W; alt. 128 m; 26.VI.2023; Keyko Cruz-García leg.; found asleep perched among guadúa cane branches about 5 m high above a water stream with grasslands on both banks; SVL 1200 mm ; 1 ; ZSFQ6368.

- Canar * Canar Canton, La Troncal; 2deg 24’ 52.32” S, 79deg 20’ 51.68” W; alt. 68 m; 23.XII.2019; Juan C. Sanchez-Nivicela, Lorena Orellana, Juan M. Orellana, obs.; found near a stream on a road.

**Identification.** (Figure 8A and 8B) This species is characterized by having 12 rows of dorsomedial scales; divided anal plate; relatively consistent reduction of dorsal scale rows 12-12-8; a white or yellow dot or spot on most dorsal scales (Dixon et al. 1993).

**Distribution.** This species is distributed in evergreen rainforests along the Pacific coast of Ecuador, Colombia, Panama and southern provinces of Costa Rica. In Ecuador this species has been reported in the provinces of Esmeraldas, Guayas, Los Ríos, Manabi, Pichincha and Santo Domingo de los Tsachilas, from sea level to 566 m altitude (Dixon et al. 1993; Rodriguez-Guerra 2020). Our record is the southernmost record of *C. flavopictus*, 79 km south of the closest record of the species (Guayaquil, province of Guayas; Dixon et al. 1993) (Figure 8C). The species was previously known in Guayas, but we consider it important to report this record due to the limited information available for this species, which is classified as Data Deficient by the IUCN (2024).

*Chironius grandisquamis* (Peters, 1869)
Figure 9. Photographs of Chironius grandisquamis (9A and 9B) and its distribution map (9C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

New Records. ECUADOR - Guayas * El Triunfo Canton, Rancho Alemán; 2° 20’ 10.7″ S, 79° 12’ 51.3″ W; alt. 272 m; 16.XII.2023; Natalia Zapata-Salvatierra leg.; found asleep perched on a branch of a medium-sized bush at 150 cm next to a steep and muddy path due to the constant drizzle in the area; SVL 500.9 mm ; 1 ; MUTPL-R 474. * Naranjal Canton, Cerro de Hayas; 2deg 44’ 12.5” S, 79deg 37’ 39.9” W; alt. 5 m; 29.XII.2015; Keyko Cruz-Garcia obs.; found foraging among rocky water ravine. – Canar * Canar Canton, San Antonio de Paguancay parish, Ocana; 2deg 29’ 56.7″ S, 79deg 14’ 52.4″ W; alt. 495 m; 24. IX.2015; Juan C. Sanchez-Nivicela, Veronica L. Urgiles, Karla Neira obs.; found during the night among shrubby vegetation, at 250 cm, in the forest.

Identification. (Figure 9A and 9B) This species is characterized by having 10 rows of dorsomedial scales; divided anal plate; back banded or uniformly black; belly white in juveniles, in adults white anteriorly and black in the posterior region; keeled paravertebrals (Dixon et al. 1993). It is important to mention that the collected specimen (MUTPL-R 474) does not present keeled paraventral scales, nor do the individuals collected and shown in the database of Pontificia Universidad Catolica del Ecuador (2021b) have this characteristic.

Distribution. This species is found from Honduras to Colombia’s Magdalena Valley along the Atlantic versant, and from the Pacific slope of central Costa Rica through the Pacific lowlands of Colombia to Ecuador (Savage 2002). In Ecuador it has been reported in the provinces of Cotopaxi, El Oro, Esmeraldas, Imbabura, Santo Domingo de los Tsachilas, Pichincha, Azuay y Manabi (Garzon-Santomaro et al. 2019; Pontificia Universidad Catolica del Ecuador 2021b). The present records address an information gap spanning 295 km, with the nearest northern locality to our record situated 212 km away (San Francisco de Las Pampas, Cotopaxi province; Pontificia Universidad Catolica del Ecuador 2021b), and the closest southern locality positioned at a distance of 36 km (Via Camilo Ponce Enriquez-Coca, Azuay province; Pontificia Universidad Catolica del Ecuador 2021b) (Figure 9C).

Dendrophidion graciliverpa (Cadle, 2012)
Figure 10. Photographs of *Dendrophidion graciliverpa* (10A and 10B) and its distribution map (10C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - Cañar * Canar Canton, El bosque del Amigo farm; 2deg 16’ 58.8” S, 79deg 6’ 9.4” W; alt. 831 m; 11.III.2023; Keyko Cruz-Garcia leg.; found foraging in leaf litter near the edge of the road in the middle of the mountain.; SVL 285 mm; 1 (sex indet.); ZSFQ5274 * Canar Canton, San Pablo town; 2deg 20’ 8.6” S, 79deg 10’ 53” W; alt. 549 m; 13.IX.2023; Keyko Cruz-Garcia leg.; Foraging in leaf litter in secondary forest in the upper part of a steep mountain; SVL 503 mm; 1; MUTPL-R 460.

**Identification.** (Figure 10A and 10B) This snake exhibits a dorsocaudal reduction from 8 to 6 occurring anterior to subcaudal 28 (range 7-27); divided anal plate; subcaudal count [?] 120 in males and females; subadults display narrow pale bands or transverse rows of ocelli; adults retain the bands or become predominantly brown or green (total number of pale bands on the body >55); immaculate ventrals or with narrow dark transverse lines across the anterior edge of each ventral plate; in life, the head is greenish-brown to green, and the body is brown, olive, or grayish; everted hemipenis with an exceptionally long, slender proximal portion and an expanded distal portion adorned with spines, calyces, and other apical ornamentations; total number of enlarged spines on the hemipenis 80 (Cadle 2012).

**Distribution.** The distribution of this snake encompasses the lowland regions of western Ecuador, from sea level up to an altitude of 1865 meters. It has been documented in several provinces, including Azuay, Esmeraldas, Imbabura, Pichincha, Santo Domingo de los Tsachilas, Cotopaxi, Chimborazo, Guayas, Manabi, Los Ríos, El Oro, and Loja (Cadle 2012; Garzon-Santomaro et al. 2019). The record presented here is the first documented record for the Province of Canar (Figure 10C).

*Imantodes inornatus* (Boulenger, 1896)
Figure 11. Photographs of *Imantodes inornatus* (11A and 11B) and its distribution map (11C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - Guayas * El Triunfo Canton, Rancho Alemán; 2º 20’ 18.27” S, 79º 12’ 46.85” W; alt. 338 m; 15.XII.2023; Keyko Cruz-García leg.; found foraging between branches of a medium-sized bush 206 cm above the ground, next to a muddy road due to the constant drizzle in the locality; SVL 528.21 mm; 1 ; MUTPL-R 473.

**Identification.** (Figure 11A and 11B) This species is distinguished by having a dorsal pattern usually consisting of small dark spots and specks, sometimes aligned in such a way that they form very small transverse bars (no more than one row of scales in length); ventrals 199-218 in males, 196-212 in females; usually 1 preocular, rare 2; usually 2 postocular, rare 3; supralabials 7-9, usually 8, with 2 or 3 bordering the orbit; infralabials 8-11, usually 10; variable temporals (3-6 scales per side), usually 2 + 3; dorsal scale rows usually 17-17-17, rarely 17-19-17 in females, 17-17-15 or 17-17-13 in males; row of vertebral scales moderately enlarged (1.2-1.5 times the size of the medial-lateral scales); Anal plate usually divided, less frequently entire (Savage 2002; MECN 2010; Pazmino-Otamendi 2020a).

**Distribution.** *I. inornatus* is distributed in the lowlands and adjacent premontane foothills on the Caribbean slope from northwestern Honduras to eastern Panama; on the Pacific slope southwest of Costa Rica and southwest of Panama; and from the eastern end of Panama towards Ecuador. It lives in the tropical and western subtropical zones in an altitudinal range of 5-1450 m a.s.l.. In Ecuador it has been reported in the province of Esmeraldas, Los Rios, Manabi, Pichincha and Santo Domingo de los Tsáchilas; and its altitudinal range does not exceed 800 m a.s.l. (Savage 2002; MECN 2010; Pontificia Universidad Católica del Ecuador 2021b). Our record represents the northernmost record of *I. inornatus*, situated 196 km south of the closest record for this species (Centro Científico Rio Palenque, Los Rios Province; GBIF 2024) (Figure 11C).

*Ninia atrata* (Hallowell, 1845)
Figure 12. Photographs of *Ninia atrata* (12A and 12B) and its distribution map (12C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - Guayas * Naranjal Canton, Cerro de Hayas; 2° 44’ 12.5” S, 79° 37’ 44.4” W; alt. 139 m; 12.VI.2016; Keyko Cruz-García leg.; found foraging on rocky terrain alongside a stream; SVL 485 mm; 1 ; MZUA.RE 0380.

**Identification.** (Figure 12A and 12B) This snake species distinguishes itself from others within its genus through a unique combination of characteristics, as described based on specimens from Colombia. These distinguishing features include the visibility of the rostral scale from an overhead perspective, internasal scales that are up to twice as small as the refrontals, with the latter being smaller than the frontal scale. Additionally, there are two prefrontal scales in contact with the orbital rim, and the frontal scale is approximately as wide as it is long. Furthermore, there is one nasal scale and one loreal scale in contact with the orbital rim, with the loreal scale nearly as long as the eye’s length. Preocular scales are absent, while there is one supraocular scale and two postocular scales, although rarely only one postocular scale is observed. The temporal scales are arranged in a 1+2 pattern. The supralabial scales typically number seven, but they can occasionally range from six to eight, with five being a rare occurrence. Importantly, scales three and four are integral to the orbital rim. In terms of infralabial scales, there are usually seven, with occasional instances of eight. The first four or five infralabial scales are in contact with the first pair of genials, which are notably longer than the second pair. The snake exhibits a dorsal pattern characterized by 19 rows of dorsal scales, and males typically possess 136-158 ventral scales and 36-70 subcaudal scales, while females usually have 133-169 ventral scales and 39-64 subcaudal scales. The total segment count ranges from 221-172 in males and 232-188 in females. Its dorsal coloration is typically black or dark gray, with a pristine cream-white ventral surface. In the occipital region, the presence or absence of a nuchal collar, which may vary in color between white, red, orange, or cream yellow, is contingent on geographic distribution. This nuchal collar can exhibit variations in both shape and prominence, resulting in a highly pronounced pattern of continuous variation in collar morphology characterized by six states. Notably, the presence or absence of the nuchal collar is unrelated to factors such as sex, size, or developmental stage. Finally, the total length in males ranges from 419-288 mm, while in females, it varies between 474-215 mm (Angarita-Sierra 2009).

**Distribution.** *N. atrata* exhibits a distribution spanning eastern Panama, western Colombia, Trinidad and Tobago, Venezuela, and northern Ecuador. It inhabits both tropical and subtropical regions in the western geographical zone, ranging in altitude from sea level to 1900 m a.s.l. In Ecuador, documented occurrences have been recorded in the provinces of El Oro, Carchi, Imbabura, Esmeraldas, Manabi, Santo Domingo de los Tsachilas, Pichincha, Chimborazo, and Cotopaxi (Angarita-Sierra 2009; Wallach et al. 2014; Medina-Rangel 2015; Garzon-Santomaro et al. 2019; Pontificia Universidad Catolica del Ecuador, 2021b). The present records address an information gap spanning 199 km, with the nearest northern locality to our
record situated 109 km away (Pallatanga, Chimborazo province; Pontificia Universidad Catolica del Ecuador 2021b), and the closest southern locality positioned at a distance of 96 km (El Guayabo, El Oro province; Garzon-Santomaro et al. 2019) (Figure 12C).

*Urotheca fulviceps* (Cope, 1886)

![Figure 13.](image)

**Figure 13.** Photographs of *Urotheca fulviceps* (13A and 13B) and its distribution map (13C) depicting historic records in black dots and the new record in red dots. The image is captured from the specimen discovered in this study.

**New Records.** ECUADOR - **Guayas** * Naranjal Canton, Cerro de Hayas; 2° 43’ 36.5” S, 79° 37’ 32.9” W; alt. 242 m; 01.IX.2022; Keyko Cruz-García leg.; found foraging in the litter of secondary forest intervened by livestock; SVL 243 mm; 1 ; ZSFQ5546. - **Canar** * Canar Canton, San Pablo town; 2deg 21’ 4.8” S, 79deg 10’ 58.2” W; alt. 565 m; 11.IX.2023; Nadia Chauca leg.; Foraging in leaf litter in secondary forest very close to a steep slope; SVL 226 mm ; 1 ; MUTPL-R 462.

**Identification.** (Figure 13A and 13B) It is a small, slender snake with a cylindrical body, back usually uniform brown, occasionally with a pair of thin pale stripes or a row of white “dashed” markings on first scale row, smooth scales arranged in 17 rows. midbody and tail long (39–45% of total length), belly immaculate white; iris reddish brown, with gold tinge above; black tongue with yellowish gray tips (Savage 2002; MECN 2010; Leenders 2019; Pazmino-Otamendi 2020b; Toro-Cardona 2021).

**Distribution.** This species is distributed throughout the Mesoamerican lowlands of Central America and the Choco Valley and Rio Magdalena regions of northern South America. In Ecuador it has been reported in the provinces of Esmeraldas, Pichincha and Cotopaxi. The altitudinal range of this species covers from approximately 0 to 1498 m.a.s.l. (Gonzalez-Mayta et al. 2011; Wallach et al. 2014; Toro-Cardona 2021). The present records address an information gap spanning 341 km, with the nearest northern locality to our record situated 189 km away (Centinela, Santo Domingo de los Tsachilas province; GBIF 2024), and the closest southern locality positioned at a distance of 101 km (Reserva Biologica Buenaventura, El Oro province; Instituto Nacional de Biodiversidad 2022) (Figure 13C).

**Discussion**

In this manuscript, we document notable distributional updates for 13 species from western Ecuador (six anfibians and seven reptiles). These reports contribute to our understanding of scarcely documented species by providing new localities for *Agalychnis spurelli*, *Chironius grandisquamis*, *Dendrophidion graciliverpa*, *Engystomops montubio*, *Hyloscirtus alytolylax*, *Lepidoblepharis buchwaldi*, *Ninia atrata*, *Pristimantis ku ri*, *Pristimantis nyctophylax*, *Pristimantis walkeri*, and *Urotheca fulviceps*. They fill information gaps on distribution of these species, and represent the first documented reports for the provinces of Guayas and
Canar. Additionally, we also present a report of *Chironius flavopictus*, which is a species with limited information on its occurrence in the provinces of Guayas and Canar.

We present some interesting cases, such as the one involving *N. atrata*, where a total length of 474 mm was previously documented according to Angarita-Sierra (2009), nonetheless, our documented individual measured a substantial 568 mm, becoming a notable addition to the knowledge of this species. This individual is the largest reported in history so far. Moreover, this documentation also fills a significant distribution gap, spanning ~200 km, emphasizing the need for further research to comprehend its distribution and ecology. Likewise, the species *Hyloscirtus alytolylax* and *Chironius grandisquamis* are classified as Near Threatened (NT) in the red books of amphibians and reptiles of Ecuador respectively (Carrillo et al. 2005; Ortega et al. 2021), this evaluation of the national conservation status results from the degradation, fragmentation and contamination of their environments, which represent their main risks.

Our findings include the distribution extension of *E. montubio* to the province of Los Rios, the southernmost recorded occurrence of *L. buchwaldi* in the province of El Oro, and the northernmost documented record of *P. kuri* in the province of Guayas. The significance of these findings is amplified by the inherent threats to these habitats due to agricultural expansion, logging, mining, and illegal hunting (Griffis-Kyle et al. 2018). With these ecosystems at risk, understanding the distribution patterns of species becomes imperative for effective conservation strategies. Also, the endangered status of *P. kuri* according to the IUCN (2024) and the Ecuadorian Red List of Amphibians (Ortega-Andrade et al. 2021), combined with declining populations due to habitat degradation, accentuates the urgency of conservation efforts as it is an endemic species. Another species facing great pressure due to human activities is *Agalychnis spurreli*. Our registry begins to fill an important information gap of ~330 km. Therefore, it is necessary to reevaluate the potential threats of this species, as it is categorized as Least Concern (LC) in the IUCN (2024) and in the local Red List (Ortega-Andrade et al. 2021).

On the other hand, *Urotheca fulviceps* was previously documented by G. Onore in the vicinity of the area we are reporting on. However, concerns have arisen regarding the accuracy of the data, particularly concerning the altitudinal range, as indicated by Cisneros-Heredia and Touzet (2004). However, with the current record, the existence of this species throughout this entire area would be confirmed. The record presented in this article contributes significantly to filling a gap in the distribution of this species, expanding our understanding of its range by approximately 300 kilometers and confirms the record made by G. Onore for the province of Guayas in 1988.

One of our last records was *Imantodes inornatus*, a snake that had only been reported in the northwestern Ecuador. With this discovery, more than 250 km away, we not only expanded the distribution, but also gave way to a better understanding of the ecology of this species. In addition to being able to contribute to further studies to place it in an adequate state of conservation, since it is currently listed as Least Concern (LC) in the IUCN (2024) and Data Deficient (DD) in the Red Book of Reptiles of Ecuador (Carrillo et al. 2005).

Furthermore, the records of *Chironius flavopictus*, *Ninia atrata* and *Urotheca fulviceps* from the Guayas provinces are particularly noteworthy due to the limited available information on these species in this specific location, adding valuable data to their distribution records.

The importance of continued research and monitoring efforts play a crucial role in understanding the diverse herpetofauna communities within Ecuador’s endangered ecosystems. The expansion of distribution ranges, the identification of novel occurrences, and the documentation of species in previously unexplored areas underscore the dynamic nature of these ecosystems, emphasizing the need for comprehensive conservation strategies to preserve their biodiversity. Among these threatened ecosystems are the humid forests located in the western foothills of Ecuador, which face imminent threats due to alarming demographic, agricultural and livestock expansions. However, these forests have significant biological value due to the abundance of species and notable levels of endemism, as highlighted by Parker and Carr (1992). Consequently, the findings presented in this study highlight the pressing need for scientific inventories in the region.
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Authors’ Contributions

KCG, NZS, NC, collected and prepared specimens; KCG and JCSN took photos; KCG, NZS, JCSN and JPC, wrote and revised the manuscript. KCG and JCSN prepared the maps, figures and table. KCG, NZS, SM and JPC helped with the acquisition of funds. KCG, JPC and JCSN conceptualized and supervised the project. All authors approved the final version of the manuscript.

Data Availability Statement

The data that support the findings of this study and the historical records of the species are openly available in DRYAD repository at http://doi.org/10.5061/dryad.kh18932dw.

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