Wildlife of Ecuador

FACING PAGE PHOTOGRAPHIC CREDITS: Gem Anole female (AV); Spectacled Bear (SW); Smoky Jungle-Frog juvenile (AV); Velvet-purple Coronet (AV).

Wildlife of Ecuador

A Photographic Field Guide to Birds, Mammals, Reptiles, and Amphibians

Andrés Vásquez Noboa
Photography by Pablo Cervantes Daza

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Contents

Preface

Since childhood, Andrés has been fascinated by the nature of Ecuador and its stunning abundance. His enthusiasm was sparked by family trips that took him to every corner of the country. This early love of Ecuador's nature is what led him to study ecology at university, and afterward to work as a naturalist and birding guide, trying to share with visitors his passion for the country and its wildlife. Pablo came to appreciate nature as an adult, when he experienced firsthand the astonishing diversity of species in Tandayapa, and then started to take visitors around the country to photograph Ecuador's birds and animals.

This passion for wildlife is precisely why this book came about. It ignited the authors' desire to share with visitors the spectacular array of wildlife that Ecuador offers and to encourage readers to visit the country, by giving them a tool to better understand and more easily locate the ecosystems and animals. We tried to accomplish these goals by providing, on one hand, fully accessible descriptions of the ecosystems and animals of Ecuador and, on the other, the best images we could gather.

This guide is designed and intended for nature lovers, outdoor enthusiasts, birders (casual or hard-core), mammal watchers, and herpetology fans, who require a nonspecialized guide to the animals and ecosystems most likely to be encountered during a visit to Ecuador. For a variety of reasons we decided to limit the guide to the following major animal groups: mammals, birds, reptiles, and amphibians. We excluded fish and nonvertebrates, which would require a host of dedicated volumes. Our overriding aim has been to include as much as we could from across Ecuador's huge and biodiverse array of species in a single informative, handy, travel-friendly guidebook.

The selection of species for this book was based on our own experience and extensive research into the most likely species to be found on a visit to Ecuador. The task of deciding which species were ultimately included was particularly difficult given the country's astounding biodiversity, but we think that our selection does justice to the Ecuadorian fauna. This book covers only mainland Ecuador, and thus the animals restricted to the Galápagos Islands are not included. We have described 223 species of birds, 71 mammals, 37 amphibians, and 40 reptiles. Any visitor will almost certainly find some species that are not included in this book, but we believe that most of the regularly encountered species are included here.

Finally, with this book we strongly wish to contribute to conservation efforts within Ecuador by encouraging people to visit not only the well-established and protected national parks but also smaller privately owned reserves that have been appearing in Ecuador more recently and have created important conservation hot spots. We hope that your entry fees, donations, and purchases from local markets will help these reserves thrive and contribute to the creation of vital biological corridors throughout the country. We encourage you not to hesitate to pay an entry fee or to hire a local guide, since the only way to true sustainability is by giving local communities a stake in ecotourism.

Whooping Motmot from the dry tropical forest of coastal Ecuador (AV)

Acknowledgments

Andrés attributes his love for nature to the family trips taken around Ecuador back when he was a little kid. His parents awoke his interest in nature by telling him amusing tales, like those about why the Kapok trees of the dry coastal region look as if they are upside down, with their roots above the ground, and why the wonderfully colored Andean hillsides change tones when the wind hits them. That is why he expresses his most heartfelt gratitude to them, as well as to his wife, Paola, and daughter Sarah, who have been his main support and inspiration for his work.

Pablo started to really appreciate Ecuador's wildlife when he was able to capture it masterfully with his camera. His sister Cristina and brother-in-law Iain were crucial in supporting his avid and growing interest in photography, and he thanks them deeply. His first steps in bird and nature photography were taken at Tandayapa Bird Lodge, so Pablo holds this special place warmly in his heart. Pablo dedicates this work to his daughter, Alejandra, with whom he could not spend as much time as he wanted, due to the efforts needed for this book.

The initial idea of producing this book came from a casual conversation between Andrés and Iain Campbell, when both were reviewing one of Iain's recently published books about the wildlife of Australia. Iain's great enthusiasm and zest gave the initial and fundamental push to this project, and within a matter of hours the basic plan for the book was set. Acknowledging this fact, we want to express our exceeding gratitude to Iain, without whom this book would have never seen the light of day. Very important to us as well is Robert Kirk, of Princeton University Press, who believed in this project and gave us all the support needed to publish our work with this prestigious editorial press.

We profoundly thank our colleagues from Tropical Birding Tours—Nick Athanas, Sam Woods, Iain Campbell, José Illanes, Charley Hesse, George Lin, and Lisle Gwynn—whose generous and unconditional support, by providing pictures and advice, was of great help. We are also warmly grateful to the talented and experienced young herpetologists and outstanding photographers of Tropical Herping, who wrote the initial draft of the amphibian and reptile accounts and supplied wonderful pictures of most of the reptiles and amphibians; we thank in particular Alejandro Arteaga, with whom we coordinated this section of the project.

Other gifted photographers, to whom we are deeply thankful, provided many key pictures for this book; they are all credited in the list of contributing photographers. Last but not least, we want to express our gratitude to Sam Woods, Roger Ahlman, Mitch Lysinger, Amy K. Hughes, and Miles McMullan for their great input reviewing the manuscript, and to Rob Still for the terrific work on the design and layout of the book.

Plan of the Book

Apart from specific descriptions for each species, this book also contains useful information about habitats, ecosystems, and the topography of Ecuador. In order to facilitate the reader's understanding of what is explained in the biogeography section, we have created a series of maps and figures that graphically complement the narrative. We urge readers to spend time with the section dedicated to Ecuador's biogeography, since this is the best way to understand the habitat descriptions within the species accounts and to comprehend the forces behind the country's incredible biodiversity. Given the dramatic topography of Ecuador, and the importance of elevation in the distribution of species, it is vital that the visitor pays attention to habitat and elevation during his or her time in the country. Habitat, range, and elevation differences are often key in separating similar species, so we have paid particular attention in describing these features for the species covered. With each species account, we have also included a distribution map for easier range reference.

SPECIES ACCOUNTS

Each species account has a brief description that highlights the animal's main identification features. For birds, we give the average length of each species, from bill tip to tail tip; only in hummingbirds is the bill length not included in this measurement, since it varies greatly in this group. For mammals, we give the maximum weight of each species and the maximum length of the head and body combined, not including tail or limbs. In some specific cases, additional key measurements are given—for example, when a bill is very long or a tail length is an important identification feature. Measurements given for frogs are the maximum body length registered for each species, since average size would not be a useful reference, given the considerable size variations due to sexual dimorphism (typically males are much smaller than females). For reptiles we present average lengths that include the tail. In the accounts of reptiles and amphibians we include some notes on environmental threats, since these species are often indicators of the ecological health of

a region. Throughout the accounts we have consulted the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) for conservation status; the categories include Near Threatened, Vulnerable, and Endangered.

PHOTOGRAPHS

A photograph accompanies each species description; for species that vary by sex or color, we may include more than one photograph. In some cases two or even three species that are very similar or almost indistinguishable in the field are treated together using only one or two photographs, with their key differences described in detail in the text. Each photograph includes the photographer's initials, as defined in the list of photographers at the back of the book.

RANGE MAPS

Each species described has a corresponding range map, since geographical distribution is oftentimes a key feature when it comes to identifying species of similar appearance. The ranges shown on each map are only referential and not intended as perfectly defined distribution graphs; due to several factors, it is impossible to outline the exact ranges of the species. Maps show the regular locations each species inhabits—or visits, in the case of migrants. In various cases two or even three species are included in one map, corresponding with the account description.

TAXONOMY

We intentionally chose not to follow any particular linear taxonomic sequence and instead present similar species next to one another, prioritizing ease of identification over scientific organization. For each species we have supplied the accepted scientific name and the commonly used vernacular name. Some species are given two common names, reflecting different taxonomic authorities or just differences in nomenclature within the literature.

Yanacocha Reserve, just outside Quito (AV)

Biogeography of Ecuador

Diversity and Its Causes

The incredible biodiversity within Ecuador is the result of three main biogeographic factors that have combined to make this country one of the richest wildlife areas on Earth: the Andes, Ecuador's location on the equator, and two major marine currents along the coast (see Figure 1).

FIGURE 1. Three main biogeographic factors converge to make Ecuador one of the most biologically diverse places on Earth: the equator (for which the country is named), the Andes Mountains (represented here in brown), and two major Pacific Ocean currents, the Panama and the Humboldt.

The Andes

The impressive Cordillera de los Andes in Ecuador consists of two main chains of high mountains and volcanoes that run north–south in parallel through the middle of the country, dividing it in half and producing three main natural regions: the coast or western lowlands; the Andes, from its foothills on each side to its snowcaps; and the Amazon lowlands in the east.

The Andes started to uplift millions of years ago, when two tectonic plates collided, resulting in the subduction of the Nazca Plate beneath the South American Plate. Silica-rich sediments, in the form of sands and silts, were deposited over the basaltic ocean floor. As the subducting Nazca Plate melted at varying temperatures and depths (the sediment layer melted at lower temperatures and higher depths than the basaltic layer), uplifting occurred in different longitudes, and two main chains, or cordilleras, of volcanoes were formed: the Western Cordillera and the Eastern Cordillera (see Figure 2).

These two chains are important to Ecuador's biodiversity not only because they separate the coastal and Amazon regions, but also because each cordillera's inner slope is separated from the other's by inter-Andean valleys that lie in between them. These valleys produce a wide barrier between western and eastern animal populations, cutting gene flow between them and leading to greater speciation. For example, two very similar bird species, diverging from the same ancestor, now fill corresponding ecological niches on each side of the Andes.

The mountain chain not only became this natural barrier but also, and much more important in terms of biodiversity, it created a dramatic orographic profile that led to the

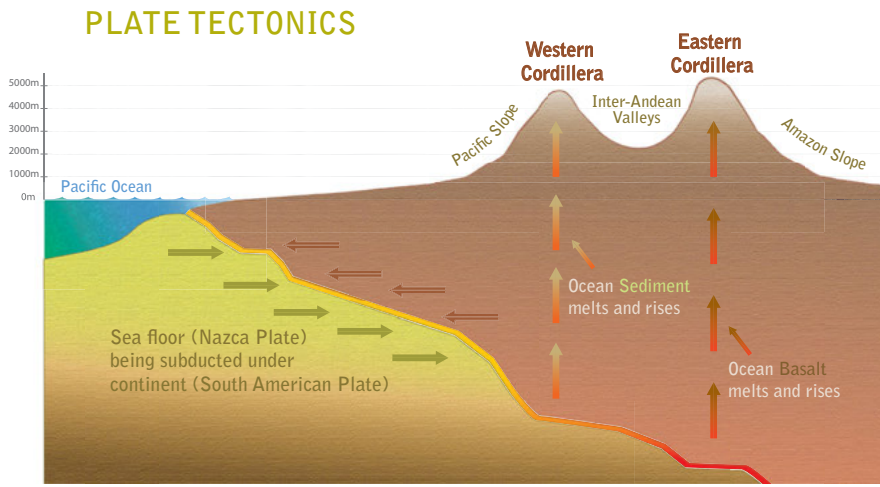


FIGURE 2. The Andes Mountains began to form about 65 million years ago when two tectonic plates, the Nazca and the South American, collided. As the Nazca Plate slid underneath the South American Plate, in a process known as subduction, sediments and rock beneath the surface heated up, melted, and rose toward the surface, creating two volcanic mountain chains, the Western Cordillera and the Eastern Cordillera.

formation of various elevational vegetation belts along the slopes. Progressively, tall trees of the hot and steamy lowlands are replaced by shorter ones as we ascend the slopes, eventually transitioning into low vegetation that clings to the soil on the drier cold mountaintops. The variation in temperature, oxygen, and air pressure has led to adaptations within the fauna and flora, and to species adapted specifically to each elevation belt (see Figure 3).

The higher one goes in the Andes, the harsher the conditions become, with a concomitant loss in species diversity. Lower on the slopes, in subtropical areas and in the foothills, the limiting factors lessen, and there is a rapid increase in species diversity. The peak of abundance and diversity occurs in the humid lowlands, where abundant resources have given rise to impressive diversity, and species have evolved to fill every available ecological niche.

The Equator

Equatorial regions have uniform monthly temperatures and, more important, lack the distinctive seasons found at other latitudes; there are no extreme temperature variations. As a result, nothing is forced to leave the tropics in search of food, and there are no sizable animal migrations. On the contrary, the tropics welcome many boreal- and austral-breeding bird species that escape the extreme cold of their respective winters. Without the

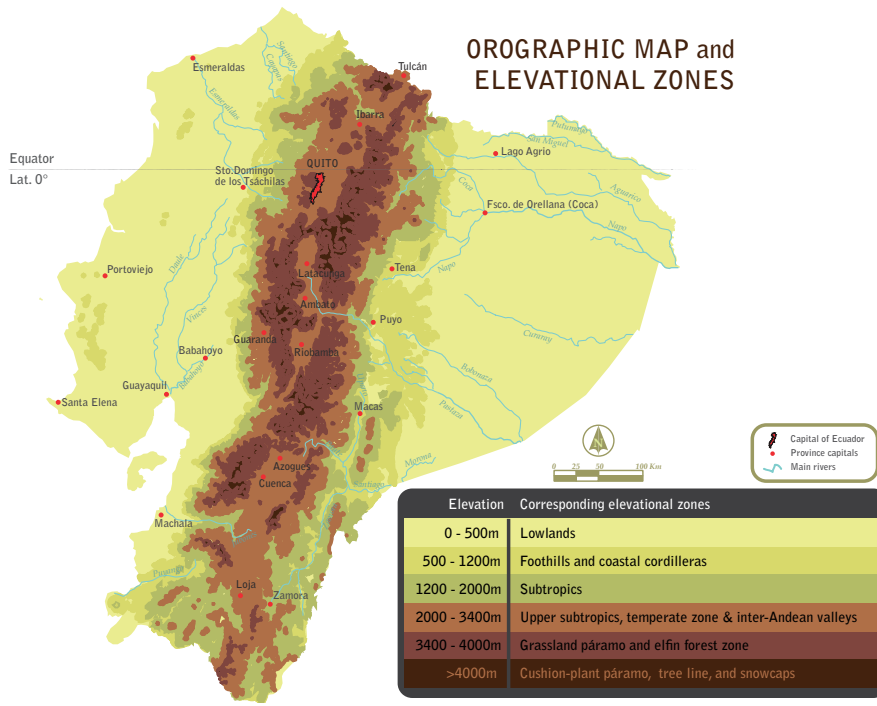


FIGURE 3. This orographic map of Ecuador shows the habitat and vegetation zones that correspond to variations in elevation.

limiting factor of extreme seasonal temperature variation, wildlife thrives in Ecuador, and evolutionary forces are unleashed, leading to tremendous species diversity.

Relatively high temperatures even at higher elevations allow a great number of organisms to live all the way up to and above 5,000m (16,400ft), near the glaciers in the *páramos*, areas similar in habitat to Arctic tundra. The high Andes host, for example, *Polylepis* trees, the highest naturally occurring tree in the world; *Polylepis* tends to form small monospecific patches, to insulate better against the freezing temperatures, and brings the tree line close to 5,000m. High-elevation areas in the tropical Andes are rich and diverse, well populated by organisms that have adapted to low temperatures and reduced oxygen. If very high elevations in this latitude are this biodiverse, middle and lower areas are amongst the richest ecosystems on the planet.

Furthermore, the equatorial zone receives some of the highest annual rainfall rates on Earth. Fresh water is, of course, crucial for most living organisms, so in areas where there is plentiful rainfall, biodiversity increases. The tropical rain forests are among the most biodiverse ecosystems on the planet.

Marine Currents

The coastal region of Ecuador receives annually two main oceanic currents, which flow from diametrically opposite directions. One, the Panama Current, comes from the north, while the other, the Humboldt or Peru Current, arrives from the south (see Figure 1). The Panama is a warm current that flows from the western coasts of Central America to reach northern Ecuador around November and ultimately runs west toward the Galápagos Islands; the humidity it generates produces high rainfall along the lowlands and slopes of northern mainland Ecuador. The Humboldt Current, which is cold, runs northward along the western coast of southern South America and brings extensive aridity to Ecuador's southern coastal region, the southern Pacific slope, and even to some inter-Andean valleys of the country (see Figure 4). El Niño, a third current, is not a yearly event but a stronger flow of warmer waters that comes from the western Pacific eastward and eventually reaches the South American coast every two to seven years, bringing abnormal weather patterns around the world; in Ecuador it mainly causes extreme rainfall in most of the coastal region and the Pacific slope.

The two yearly currents, Panama and Humboldt, converge on Ecuador's coasts and produce two very different effects on wildlife. The warm humidity from the Panama Current allows life to proliferate, so the ecosystems influenced are always green, lush, and rich. Meanwhile, dryness brought by the Humboldt Current represents a challenge for plants and wildlife and forces organisms to adapt to limited rainfall, in some cases extremely arid conditions, often producing unique ecosystems and species. So we have rich tropical rain forests in the northwest (the Chocó region) and remarkable dry tropical forests in the southwest (the Tumbesian region). This variety of ecosystems favors tremendous biodiversity.

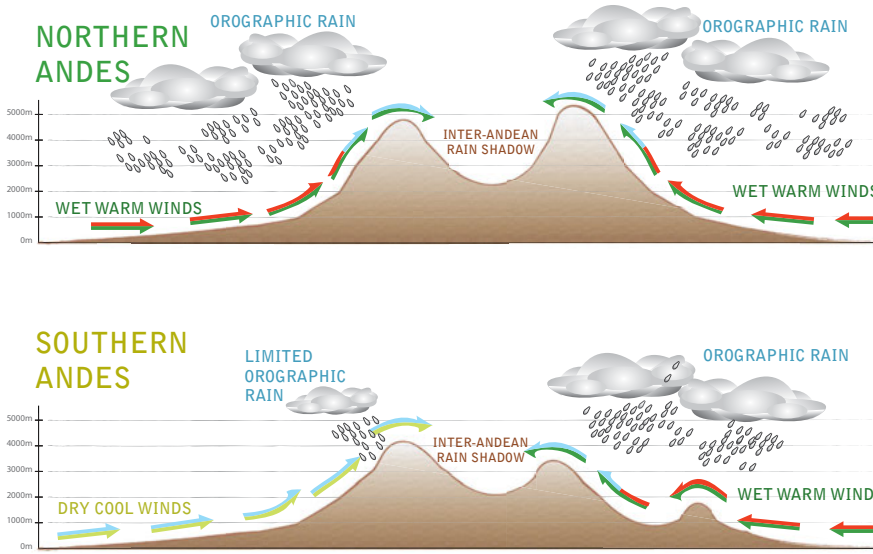


FIGURE 4. Orographic rain is precipitation caused by warm and moist air that as it lifts over a mountain cools down, undergoes condensation, and turns into clouds and rain. The orographic rain profile of Ecuador on its western side differs from north to south due to the Pacific Ocean currents. In the northern Andes the warm Panama Current brings humidity that produces high rainfall, as shown in the top illustration. The colder Humboldt Current from the south, brings in drier air and lower rainfall, especially to the coastal region, though it also affects the southern inter-Andean valleys (bottom illustration). The eastern side of the Andes receives humid air that comes from the steamy Amazon rain forest, creating similar orographic rain conditions from north to south.

Cup fungi on the Amazonian rain forest floor (AV)

Habitats and Bioregions

The configuration of Ecuador's main bioregions is shown in Figure 5.

It is easy to see that there is extensive habitat zonation on the slopes of the Andes contrasting with the less habitat-diverse lowland areas. The areas shown on the map as **foothill and subtropical forest** are commonly known as **cloud forest**, because condensation, formed as hot currents of air that rise from the lowlands hit the mountains, creates clouds of mist. These humid bioregions are among the better-preserved habitats in the country, owing to the steepness of the slopes, which prevents large-scale agriculture and accommodates relatively little human settlement.

The humid tropical forests called **rain forest** are found in the eastern and northwestern lowlands. Despite the poor soil, large-scale agriculture and logging have fragmented the habitats, especially in the west, where urbanization is intense. The humid **Chocó** area is home to many endemic species—toucans, hummingbirds, tanagers, and barbets among them; furthermore, its high biodiversity makes this habitat one of the most popular for tourists.

In the lowland Amazon region, we still have huge areas of undisturbed forest, given the area's scarce and scattered population, plus the presence of vast nationally protected

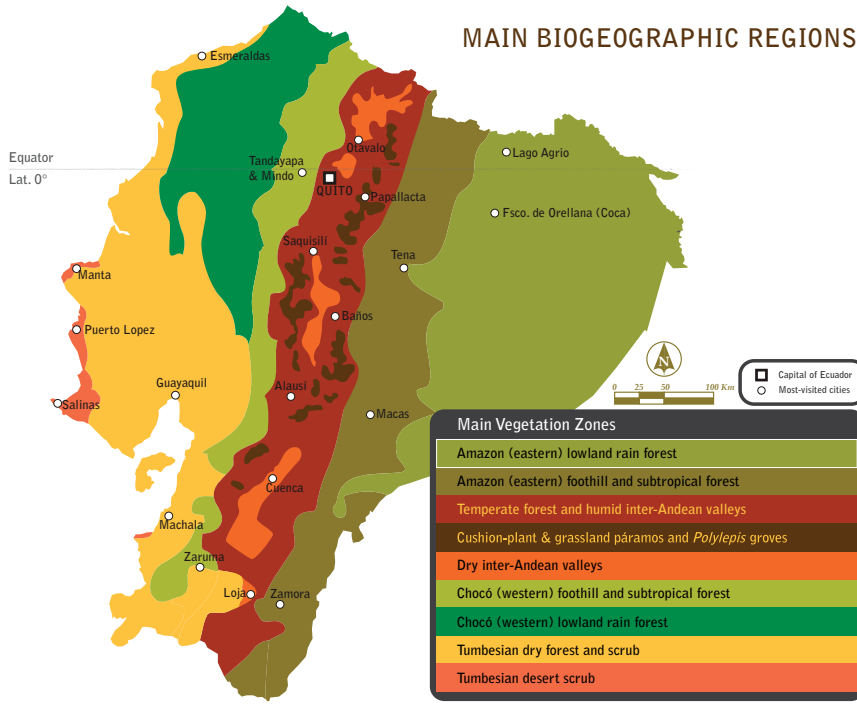


FIGURE 5. This map shows Ecuador's main biogeographic regions and vegetation zones.

areas, such as the Yasuní National Park. The Amazon rain forest looks pretty uniform, like a huge green carpet that extends over northern South America; nevertheless it is a mosaic of various forest types that host a great variety of micro-ecosystems. Each one of these habitats has its own set of animals and plants, and therefore we have included some references to these forest types in several species descriptions, since the knowledge of each habitat facilitates identification of the animals. Here, the most diverse and complex forest type is the **terra firme**, which basically never gets flooded, allowing for habitat stability and a diverse ecosystem. There are two types of flooded forest: **várzea**, not very widespread in the western Amazon, is seasonally flooded forest usually close to large white-water rivers ("white" refers to the water's opaque coloring, not to the existence of rapids); while **igapó** is a permanently flooded forest that mostly surrounds blackwater lagoons and is dominated by palms and freshwater mangroves. The banks of white-water rivers receive a lot of sediments that are washed down from the Andes and, in areas where there is no flooding, small-scale agriculture can be found alongside **riparian** (or riverine) **forest**. **River islands** are a world apart, with their unique permanently transitional vegetation dominated by grasses, *Tessaria* bushes, and stands of *Cecropia* trees of varying ages. They are host to a variety of species, including capybaras, river turtles, and spinetails, some of which may be found only in these habitat; interestingly, it has been shown that birds adapted to live in these islands have a warmer body temperature, enabling them to tolerate better the temperatures of this more scarcely vegetated ecosystem, which are higher compared to those of taller and denser forests.

The high Andes, characterized by **elfin forest** and **páramo**, represent a challenging environment for wildlife, so those species that do inhabit this region have adapted well. While diversity is not as high as in some habitats, given the inclement conditions, those species that have managed to adapt are quite special. For instance, some flowers have modified parabolic-shaped petals to concentrate the solar radiation onto their pistils to avoid freezing of their reproductive parts.

In the **Tumbesian** region, in the southwest of the country, the limiting factors are the scarcity of water and high levels of solar radiation. Many plant species have evolved to shed their leaves during the peak of the dry season to avoid dehydration; forests are deciduous in response to the low water supply. The most iconic species is the Tumbesian Kapok tree (*Ceiba trichistandra*), which loses all its leaves for several months a year. However, it can continue photosynthesis because the main trunk and branches are covered with chlorophyll. The tree also has the capacity to store water in the main trunk for the driest periods.

Amphibians

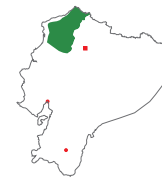
1 **Mitred Toad** *Rhinella margaritifera* 7.8cm/3in

Any toad in Ecuador that resembles a leaf and has a spear-shaped head is likely to be Mitred Toad. Each individual is different, and this makes it one of the most variable species in the tropics. It also is one of the most famous toads of the Amazon forest, because it is extremely common, easily found in daytime, and widespread throughout many tropical environments.

2 **Cane Toad** *Rhinella marina* 14cm/5.5in

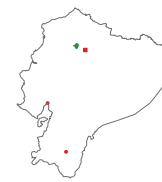
Most inhabitants of the New World tropics and subtropics are familiar with this extremely common large toad. It is the second-largest species of toad in the world, and is common not only in the Americas but also overseas, such as in Australia, where it has been introduced. It is an opportunistic predator that feeds on anything that is not too large to swallow, mostly insects but also rotting garbage. Cane Toad is one of the most prolific species of amphibians known. A single female may lay up to 36,100 eggs in a single clutch.

3 **Little-devil Poison-Frog** *Oophaga sylvatica* 3.8cm/1.5in



This spectacular and colorful amphibian is famous in Ecuador for its variable coloration and because the adult females of the species feed their tadpoles with unfertilized eggs. You can find these "little devils" in forests of the Pacific lowlands. Unique toxins present all over the skin characterize this frog and others in its family. Some of these toxins are used in medicine, for which reason conservation of this species is needed. Illegal wildlife trafficking is the principal threat to this poison-frog.

4 **Darwin Wallace Poison-Frog** *Epipedobates darwinwallacei* 1.9cm/0.75in



The most remarkable feature of this frog is its coloration: blackish overlaid with a contrasting golden-yellow netlike pattern. Not surprisingly, these colors signal danger. The species has a number of toxic skin compounds that have not yet been studied by scientists. This Ecuador endemic is closely associated with water bodies in open areas. Its very restricted habitat is prone to chemical pollution, and for this reason the species is classified as Endangered. Farther south on the western slope *E. darwinwallacei* is replaced by the similar **Phantasmal Poison-Frog** (*E. anthonyi*, previously *E. tricolor*), which has light blue stripes on a dark reddish-brown body. In 1972, in the skin of *E. anthonyi*, from specimens found in Ecuador, scientists discovered a nonaddictive alkaloid 200 times stronger than morphine, which was named epibatidine; it has been synthetized for medicinal development (e.g., in analgesics), but so far the toxicity involved is too strong for a viable use in humans.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1 **Unexpected Rocket-Frog** *Allobates insperatus* 1.8cm/0.75in

Torrential rains in the Amazon basin unleash a deafening chorus of amphibian calls. In the forest interior, one of the most prevalent species is Unexpected Rocket-Frog. Males of this species actively call from humid leaf litter to establish territories, attract females, and cast away competing males. However, in the process, the sound attracts predators such as snakes.

2 **Wikiri Poison-Frog** *Ameerega bilinguis* 2.4cm/1in

This small species is one of the most beautiful poison-frogs in Ecuador, where it is known locally as "Ecuadorian flag poison-frog." It can be recognized instantly by its characteristic red and blue dorsal coloration and the yellow spots on the groin. It can be confused with **Sanguine Rocket-Frog** (*Allobates zaparo*), which is almost identical but with a grayish belly, and **Ruby Poison-Frog** (*Ameerega parvula*), which lacks the yellow spots; both range mostly farther south, overlapping with Wikiri only a little. Wikiri Poison-Frog is a common species in primary forest but is usually found in lower densities in secondary forest. Habitat destruction and degradation are general threats to the species. Fortunately, it is not an endangered species.

3 **Amazonian Poison-Frog** *Ranitomeya ventrimaculata* 1.8cm/0.75in

This small species can be separated from other poison-frogs that live in the same area by its orange and blue coloration. It is associated with well-preserved forests in the Amazon rain forest of Ecuador. This diurnal frog can be seen on the canopy, in epiphytes growing on trees, at about 40m (130ft) above the forest floor; and in leaf litter on the ground. Although its population is stable, its abundance varies throughout its range, and it is rare in Ecuador. Major threats to this species are deforestation, human settlement, and water pollution.

4 **Emerald Glassfrog** *Espadarana prosoblepon* 3.1cm/1.25in

This adaptable species has the most variable coloration among the glassfrogs. It can be separated from other glassfrogs of the same area by the notably enlarged humeral spines (a small protuberance near each shoulder) in males. In female, the absence of white speckling or red dots is separates it from Red-spotted Glassfrog. This species is found in streams from the Pacific coast to the cloud forest. It appears to be less affected by emergent infectious diseases than other amphibians. However, the quality and extent of its habitat have been severely diminished, particularly in Ecuador, where large portions of Chocó forests have been lost or fragmented.

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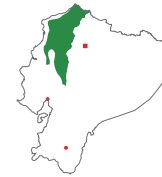
1 **Northern Glassfrog** *Hyalinobatrachium fleischmanni*

3.2cm/1.25in



This species is one of the most interesting Ecuadorian glassfrogs, due to its complete ventral transparency. From beneath, all its main organs can be seen clearly, particularly the hearts and lungs. This amazing amphibian is found on top of leaves in streamside habitats. Although it is a common glassfrog, its populations have been decimated by pollution, deforestation, and emergent infectious diseases. It is found along streams of Chocó lowlands.

2 **Red-spotted Glassfrog** *Nymphargus grandisonae*

3cm/1.25in

One single feature sets *Nymphargus grandisonae* apart from all other glassfrogs: its greenish dorsum covered with red spots. No other glassfrog has spots of this color. For this reason, Red-spotted Glassfrog is sought after by photographers and herp (reptile and amphibian) lovers. Another useful hint to its identification is the presence of humeral spines in males. Glassfrogs are extremely territorial, and these spines are used in fights against other males of the species.

3 **Handsome Glassfrog** *Centrolene bacatum*

2.2cm/0.75in

Handsome Glassfrog lives high in cloud forests of the Amazon slopes of the Andes. For reasons that remain unknown, this species generally displaces other glassfrogs in the area. Apparently, it is better adapted and more fecund than other species. It can be recognized by the fine whitish dots on its face and dorsum.

4 **Babbling Torrenteer** *Hyloscirtus alytolylax*

4.4cm/1.75in

Here is a treefrog that often gets confused with a glassfrog. Unlike glassfrogs, Babbling Torrenteer has a characteristic call involving a series of loud trills. On the other hand, it resembles glassfrogs in that it inhabits cloud forests and perches on vegetation right above cold-water streams. It is listed in the category Near Threatened because it is strongly dependent on well-preserved forested streamside habitats. These areas are clearly declining in extent and quality. Fortunately, the frog is locally common and relatively widely distributed.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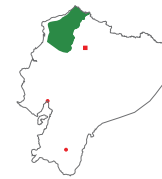
1 **Moss Rainfrog** *Pristimantis eriphus* 2.9cm/1.25in

This small and beautiful frog is characterized by its mossy aspect and greenish color. It is found at night on top of low herbaceous vegetation up to 3m (10ft) above the ground, in partially cleared and old-growth cloud forest on the northeastern Andean slopes. It is a vulnerable species due to general habitat loss and because its distribution is severely fragmented.

2 **Broad-Disk Rainfrog** *Pristimantis latidiscus* 5.3cm/2in



One thing makes Broad-Disk Rainfrog different from most other frogs in Ecuador. It is one of the few that has never been heard singing. Therefore, it is hard to determine how males of this species manage to attract females. Another interesting characteristic of the species is the enlarged finger disks, which separate this rainfrog from other common species in the Chocó forests. Broad-Disk Rainfrog is often found perched on bushes and trees from the understory up to the canopy. Like all the frogs of the genus *Pristimantis*, it has direct development. This means that the female lays eggs that hatch directly into miniature versions of the adults, thus bypassing the tadpole phase.

3 **Warbler Rainfrog** *Pristimantis walkeri* 2.5cm/1in

This small, arboreal rainfrog can be separated from other similar frogs by the flashy black and yellow colors on the groin. One unusual characteristic of this species is its preference for disturbed habitats, such as forest edge and plantations, over well-preserved ones. Few other amphibians in Ecuador have similar habitat preferences. However, although Warbler Rainfrog is presumed to have large and stable populations, these may be negatively affected by large-scale mechanized agriculture.

4 **Pinocchio Rainfrog** *Pristimantis appendiculatus* 3.5cm/1.5in

No other Ecuadorian rainfrog can be confused with this species, distinguished by the exaggeratedly elongated fleshy tubercle at the tip of its snout, which resembles a long nose. The Pinocchio is not necessarily tied to water bodies and is an extremely common frog throughout its cloud-forest distribution. Main threats to the survival of this species are climate change and deforestation. This is due to its dependency on well-preserved forested areas with high humidity levels.

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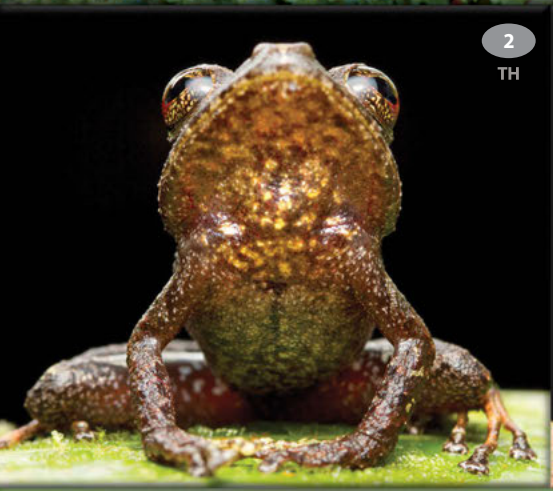

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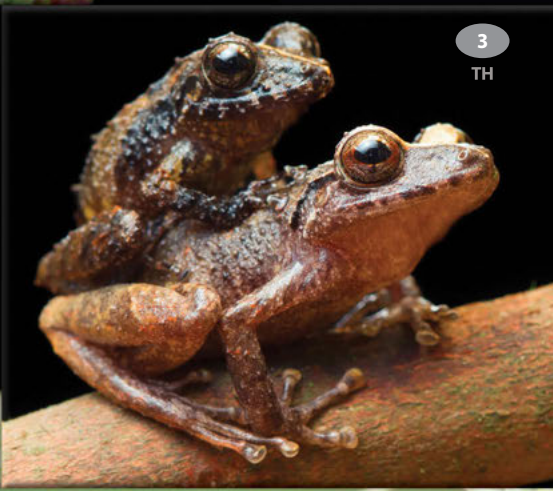

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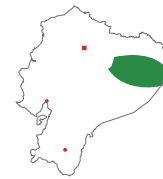
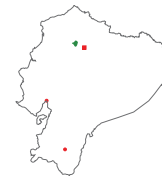
1 **Enigmatic Rainfrog** *Pristimantis enigmaticus* 3.8cm/1.5in



Bromeliads in the central Ecuadorian Amazon look empty if there is no Enigmatic Rainfrog inside. The frogs are so adapted to living in these arboreal water-filled plants that they spend nearly their entire lives—calling, reproducing, and sleeping—inside them. These rainfrogs have even developed slender bodies to fit between the plants' tight leaves. This species is a recent split from **Acuminate Rainfrog** (*P. acuminatus*). Another recent split from Acuminate, **Limoncocha Rainfrog** (*P. limoncochensis*), is a similar species that replaces the Enigmatic north of the Napo River.

2 **Goblin Rainfrog** *Pristimantis sobetes* 3.7cm/1.5in



The most remarkable attribute of this common frog from the Pacific cloud forest is its colorful reddish eyes. Locals have long related the presence of this rainfrog to bad luck, hence the common name. Scientists, on the other hand, consider the presence of this species an indicator of environmental quality, not only because the species requires well-preserved forests but also given the scarcity of records of Goblin Rainfrog. Although its population numbers seem to be increasing, it is still considered an endangered species due to its restricted elevational range and its strong dependency on well-conserved forested montane ecosystems.

3 **Diadem Rainfrog** *Pristimantis diadematus* 2.4cm/1in

This species differs from its congeners (species of the same genus) in having a diagonal dark brown- or black-spotted mark on a yellowish to bluish-white background on the flanks. It is an arboreal species, found in primary and secondary forests in suitable habitats throughout the Ecuadorian Amazon. A common species, facing few major threats to its survival, it is widespread, with large areas of suitable habitat remaining. In some localities where Diadem Rainfrog occurs, the frog is affected by logging, agriculture, oil exploration, and colonization.

4 **Quito Rainfrog** *Pristimantis unistrigatus* 3.1cm/1.25in

If you live in Quito, you undoubtedly know this frog. At night, whenever it rains, it floods the city with its songs. Normally, this rainfrog is found in grasslands and cultivated areas in inter-Andean valleys, but it has found a way to adapt to heavily populated areas and is not threatened in any way. It can be separated from other species by its small size, plump appearance, and brownish color.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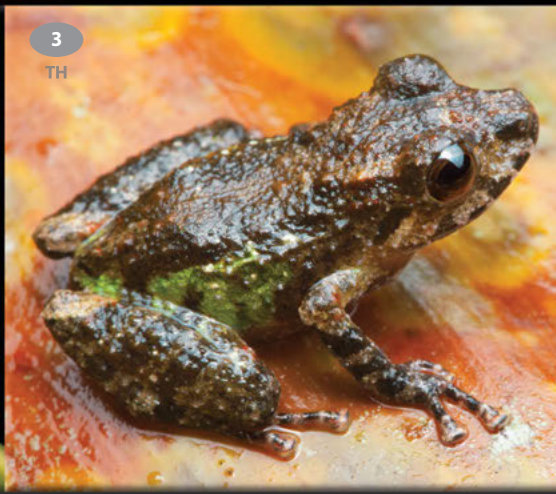
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