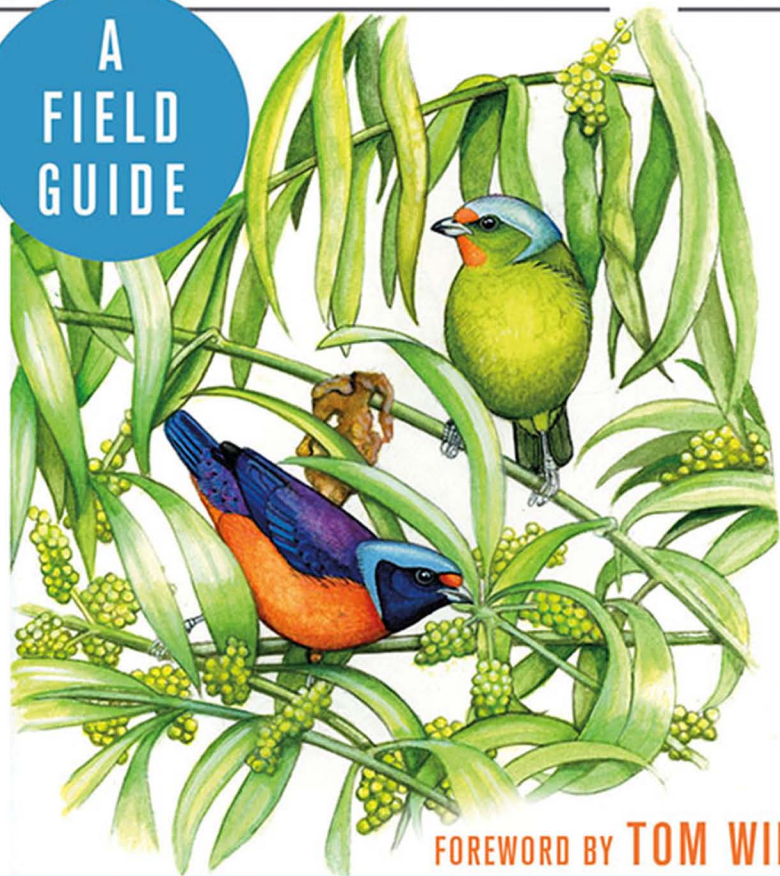


A ZONA TROPICAL PUBLICATION

# BIRDS OF NICARAGUA

A  
FIELD  
GUIDE



FOREWORD BY TOM WILL

LILIANA CHAVARRÍA-DURIAUX,  
DAVID C. HILLE & ROBERT DEAN





# Birds of Nicaragua

A FIELD GUIDE

LILIANA CHAVARRÍA-DURIAUX

DAVID C. HILLE

*Illustrated by*

ROBERT DEAN

A Zona Tropical Publication

FROM

Comstock Publishing Associates

*an imprint of*

Cornell University Press

Ithaca and London



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Back cover, top to bottom: female Three-wattled Bellbird (*Procnias tricarunculatus*),  
Jabiru (*Jabiru mycteria*), male Three-wattled Bellbird, Robert Dean

p. ii: Rufous-vented Ground-Cuckoo (*Neomorphus geoffroyi*), Robert Dean  
p. vi: King Vulture (*Sarcoramphus papa*), Jorge Chinchilla  
p. 9: photos, Georges Duriaux  
p. 11: photos, David C. Hille  
p. 12: photo (left), David C. Hille; photo (right), Georges Duriaux  
p. 13: photo (left), David C. Hille; photo (right), Georges Duriaux  
p. 24: Great Green Macaw (*Ara ambiguus*), Glenn Bartley

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First published 2018 by Cornell University Press

Printed in China

#### Library of Congress Cataloging-in-Publication Data

Names: Chavarria-Duriaux, Liliana, author. | Hille, David C., 1981– author. | Dean, Robert, 1955– illustrator.  
Title: Birds of Nicaragua : a field guide / Liliana Chavarria-Duriaux, David C. Hille ; illustrated by Robert Dean.  
Description: Ithaca : Comstock Publishing Associates, an imprint of Cornell University Press, 2018. | “A Zona Tropical publication.” | Includes bibliographical references and indexes.  
Identifiers: LCCN 2017045660 (print) | LCCN 2017046339 (ebook)  
ISBN 9781501709500 (pdf) | ISBN 9781501701580 | ISBN 9781501701580 (pbk. ; alk. paper)  
Subjects: LCSH: Birds—Nicaragua—Identification.  
Classification: LCC QL687.N5 (ebook) | LCC QL687.N5 C43 2018 (print) | DDC 598.097285—dc23  
LC record available at <https://lcn.loc.gov/2017045660>

Zona Tropical Press ISBN 978-0-9894408-8-2

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Book design: Gabriela Wattson

Cover illustration: Male and female Elegant Euphonia (*Euphonia elegantissima*), by Robert Dean

*To my husband, Georges Duriaux, who  
was at my side on expeditions and as I did  
research and measurements work. And to  
my son, Jean-Yves.*

*Liliana Chavarria-Duriaux*

*To Sarah, Adele, and Henry, my constant  
sources of love and encouragement.*

*David C. Hille*

*To all the conservationists working tirelessly  
to protect birdlife in the Neotropics. They are  
needed now more than ever.*

*Robert Dean*



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## Foreword

I lived, worked, and birded for more than seven years in Mesoamerica, but none of the places I traveled to holds as dear a place in my heart as Nicaragua. The reasons are many.

Nicaragua is the largest country in Central America and contains a wealth of intriguing, diverse habitats. Here, the montane and lowland pine forests of North America reach their southern limit, and you will find one of the largest freshwater lakes in the Americas, expanses of lowland rainforest, river systems that wind through tropical moist gallery and swamp forests, Pacific scrub and deciduous forest, semi-deciduous and evergreen montane forest, epiphyte-draped cloud forest, and large bays, beaches, and mangroves along both the Pacific and Caribbean coasts. These diverse habitats are home to a great variety of stunning resident and passage birds, a full 763 species by the latest count.

Yet, arguably, Nicaragua's avifauna remains the least explored in Mesoamerica. Despite a long history of influential naturalists and ornithologists like Thomas Belt, Ludlow Griscom, and Fr. Bernardo Ponsol, the first published, annotated country checklist didn't arrive until 2010, and no illustrated field guide existed until 2014! Now, this new field guide, comprehensive and richly illustrated, gives birders—new and returning—the means to add species to the evolving national list (I predict an easy dozen new birds within the next few years). There are also many species recorded in Nicaragua about which very little is known. For example, what is the actual distribution of the near-endemic Tawny-chested Flycatcher (*Aphanotriccus capitalis*) in Nicaragua? How many Rufous-vented Ground-Cuckoos remain in its forests, and where are they? What are the seasonal movements of Jabiru between the vast Mosquitia region and the lakeshore marshes of Lago Cocibolca (Lake Nicaragua)? With the help of this guide—and the thousands of eBird checklists that will result—many of these avian mysteries should be resolved.

Even today, there are entire sections of the country that remain little explored. These include the hilly region just northeast of the Gulf of Fonseca, the vast Bosawás UNESCO Biosphere Reserve and Cerro Saslaya in the north, and the biologically diverse Indio-Maíz Biological Reserve in the southeast, to name a few. I vividly remember the awe I felt canoeing just south of San Juan del Norte, slowly moving through the pristine freshwater lagoons, while surrounded by forested hills, each lagoon replete with wintering waterfowl and accessed via small connecting channels whose overarching tree branches were festooned with iguanas falling into the water, all to the raucous accompaniment of mysterious bird calls. It is without question one of the most beautiful places I've ever visited. While that was in 1991, and there has been much change since, adventurous naturalists may still find similar awe-inspiring landscapes.

Finally, the most important reason Nicaragua is a special place to enjoy birds is the Nicaraguan people themselves. Despite the fascinating cultural diversity of the country—Spanish speakers in the west, Caribbean English speakers in the east, and still many indigenous communities (Rama, Garifuna, Mayagna, and Miskitu)—there is nonetheless a recognizable national character that is distinctly Nicaraguan. Especially in the countryside, you will find people who are notably humble, generous, and down-to-earth. Good luck finding a campfire anywhere in the *campo* where Nicaraguans are not singing, with or (more often than not)

without musical instruments. And if you ask a Nicaraguan whether he or she is a poet, the answer will inevitably be, "*¿Poeta? ¡Sí, por supuesto!*"

As you leaf through the pages of this guide, the colorful plumages depicted here are likely to excite the imagination, ignite the instinct to travel, and spur biological curiosity. I sincerely hope that this guide will not only aid in identifying birds but will also, through our ambassadors, the birds themselves, help connect international communities with those in Nicaragua and inspire folks to join forces with the growing number of Nicaraguan conservationists passionately dedicated to sustaining their natural legacy and their astounding birdlife.

—Tom Will

Nongame Bird Coordinator, U.S. Fish and Wildlife Service

## Acknowledgments

We are indebted to the many ornithologists and birders who, for nearly two centuries, have contributed to the knowledge about Nicaraguan avifauna. These include intrepid ornithologists of the early twentieth century, among them William B. Richardson, Dioclesanio Chaves, Waldron DeWitt Miller, Ludlow Griscom, Wharton Huber, and Bernardo Ponsol. Later in the century, Thomas R. Howell contributed invaluable specimen collections and writings.

From modern sources, we obtained a great deal of information from birders who have contributed sightings, photos, and audio recordings to eBird, the Macaulay Library, and xeno-canto, for which we are grateful. Keep sharing!

Museum data have fundamentally contributed to our work. We are grateful to Paul Sweet (Division of Vertebrate Zoology-Ornithology at the American Museum of Natural History), who created and shared a database of Nicaraguan specimen records that draws from sixteen museum collections. Some of these thousands of records have never been published elsewhere.

Terry Chesser and Tom Schulenberg graciously consulted with us on the latest taxonomical changes from the American Ornithological Society.

Needless to say, this book would not have been possible—at least in its current form—without the initial interest from John McCuen and Mark Roegiers at Zona Tropical Press, the spectacular design by Gabriela Wattson at Zona Creativa, and the guiding hand of Kitty Liu at Cornell University Press. A special thank you goes to John McCuen. His management skills, superb editing, and desire for perfection have made this a better book.

— The authors

The publication of *Birds of Nicaragua* was made possible thanks to many people who have helped in a variety of ways. Let's go back six years, in the early stages of this project. Thanks go to several people who believed in me and who encouraged me to work on this book: Tom Will, Oliver Komar, Rob Batchelder, and Stephen Paez. Special thanks go to John McCuen, our editor, who invited me to be part of the team. Thanks also to coauthor David Hille, whom it has been a great pleasure to work with. I was delighted to work with Robert Dean, whose magnificent illustrations grace these pages.

Special thanks go to Andrew Vallely (Field Associate, AMNH) for his generosity in sharing information, for answering my queries, and for accompanying me on two expeditions to Saslaya NP.

Expeditions to do research in remote areas of Nicaragua proved invaluable when it came time to write this book. Therefore I'm very grateful to Carlos Ramiro Mejía, from MARENA (*Ministerio del Ambiente y Recursos Naturales*), for granting the necessary permits to conduct research in all Nicaraguan protected areas. Thanks also to Atanasio Maldonado and Nachito Cruz, park rangers at Saslaya NP, who accompanied me on nine expeditions to the park. Moisés Siles and Wilmer Talavera, my field assistants, were vitally important on trips to collect data and do mist-netting.

Thanks also go to Juan Carlos Martínez-Sánchez, Osmar Arróliga, Manfred Bienert and Marvin Tórrez.



Finally, I'm grateful to my son, Jean-Yves, and my husband, Georges, for their patience as I spent so much time in front of the computer and sometimes left family matters to one side. Thanks to Georges for sharing my passion for birds, for helping me capture them in remote forests, and for organizing all the expeditions we made in Nicaragua. I also want to thank him for his constant support and encouragement, without which I wouldn't have been able to finish this marvelous project.

— Liliana Chavarría-Duriaux

I will never be able to express my full gratitude to my wife, Sarah, who believed in me from the very beginning, when this book was just a dreamer's notion, and who proceeded to be my mainstay for the long haul. Our children Adele and Henry played no small role in giving me encouragement and ample love, along with Monopoly Junior work breaks to clear my head. Their patience throughout my long work hours and my trips to Nicaragua still baffles me, and I am grateful for it. Thank you to all my family and friends, who provided love and support. Thank you also to the staff and faculty at the Oklahoma Biological Survey at the University of Oklahoma for supporting me in ways too numerous to list.

If we are lucky, we meet people who guide us toward the paths we end up taking or who walk with us along these paths. Dr. Leon Powers, of Northwest Nazarene University, enthusiastically introduced me to ornithology as a field of study. Once set down that path, I often found Scott Smithson and Matthew Strussis-Timmer at my side during some of my most formative birding years.

I am also grateful to Francisco (Chico) Muñoz, who joined me in the field for an incalculable number of hours while observing birds and exploring Nicaragua. It was a pleasure to bird with Georges Duriaux, who contributed in so many ways to our success. Bruce Mactavish, Orlando Jarquín, and Martín Vallecillo shared valuable records and other information. Jean Michel Maes (*Alianza para las Áreas Silvestres*) offered welcomed consultation in the beginning stages of this project.

Finally, I have talented and dedicated coauthors. Lili, thank you for your passion, energy, and love for birds and your desire to make this the best possible book. Robert, thank you for the insurmountable amount of work and care that is represented by your art.

— David C. Hille

I wish to thank the following people for being my support group during the fruition of this guide: Eduardo Amengual, David Rodríguez Arias, Patrick O'Donnell, Andrew Russell, Susan Blank, Lisa Erb, Lana Wedmore, Oscar Castillo, Cristian Chaves, Darren and Marie Mora, Simon Musselle, Angie Usher, Larry Landstrom, Ruth Rodríguez, Alex Villegas, Bitty Ramírez-Portilla, Adrian Forsyth, Alan and Karen Masters, and Daryl Loth.

My great appreciation goes to the two authors of this guide, David Hille and Liliana Chavarría-Duriaux, for their abundant knowledge of Nicaraguan avifauna and their assistance throughout the creative process.

— Robert Dean

# Introduction

Wherever the roads, rivers, and trails of Nicaragua might take you, we trust that this book will enhance your ability to make correct bird id's. The number of birds in Nicaragua is impressively large—with 763 species confirmed to date. This wonderfully diverse group of birds resides in 77 avian families. This is the first field guide for Nicaragua that includes body measurements, country-specific range maps, key field marks for identification, comparisons with similar species, and vocalization descriptions. We hope that this book will contribute to an increase in birding activity in Nicaragua, which, in turn, would create more opportunities for ecotourism guides, increase the number of visitors to parks and reserves, and, ideally, spur conservation efforts. Nothing would delight us more than to see more people (of all ages and nationalities) begin to discover the avifauna of this country and, along the way, discover the country itself.

**Family descriptions.** For each family, we provide information on global distribution, general characteristics and anatomical features (as represented within Nicaragua) to help you identify birds to the family level, and relevant ecological and behavioral notes. And, we often give tips about how to distinguish among birds or groups of birds within the family.

**Species name.** Three names are given for each species, the English common name, Spanish common name, and scientific name. English common names and scientific names strictly follow the Checklist of North and Middle American Birds: 7<sup>th</sup> edition (updated through the 58<sup>th</sup> supplement), managed by the American Ornithological Society.

**Body measurements.** Measurements are listed first by inches (rounded to the nearest half inch) and followed in parenthesis by centimeters (rounded to the nearest centimeter). Total body length—the measurement from the tip of the bill to the tip of the tail—is listed for each species. When a bird has long, extended rectrices or tail coverts, the length of the extension is listed separately. If sexual dimorphism leads to noticeable differences in body size, male (M) and female (F) measurements are given separately. For birds that are most often seen soaring, the wingspan (WS) measurement is also listed.

Body measurements can be very helpful when making identifications. This is particularly the case when trying to distinguish between similar birds that are seen at the same time, or when using the size of a well-known species as a standard by which to judge a new bird. However, consider that the body length measurement can be misleading when a bird has a relatively long bill or tail. And, the perceived size of a bird is also influenced by leg length, body form, and weight.

**Field marks.** The opening sentences of each species account describe the most pertinent field marks needed to identify the bird; the most important characteristics are in bold font. These may include, but are not limited to, body size and form; bill size, form, and color; plumage patterns and color; eye color; and feet color. Definitions of anatomical terms used in these descriptions are found on page 14.

When relevant, we also describe the differences between male and female, adult and immature, breeding and nonbreeding, subspecies, and color morphs. We also give tips on how to distinguish between similar species.

**Status.** Each species is placed into one of 8 categories, each of which essentially refers to the time or times of year that the species is expected to occur in the country. Not all species are present year-round, of course, and some populations are very dynamic, migrating from North or South America. When a bird is not present year-round, we specify the normal range of months when it is found. Keep in mind that some birds may arrive earlier or leave later than the stated time.

The largest status group is the breeding resident (540 species). These are species that breed in Nicaragua and are found year-round. Some species perform short, seasonal movements within the country during the nonbreeding season. In some cases, a breeding resident population is joined by winter residents of the same species for a portion of the year. Unless otherwise specified in the text, you can assume that a given species is a breeding resident.

There are two status groups that migrate between the Neotropics and North America (NA). Winter residents (158 species) spend the entire boreal winter in Nicaragua, arriving in the boreal fall and departing in the boreal spring; they are generally present between August and May. Small numbers of some species will remain in Nicaragua during the boreal summer; these are typically immature individuals.

In the boreal fall, North American passage migrants (36 species) pass through Nicaragua on their way to wintering grounds that are farther south; in the boreal spring, they leave their southern wintering grounds and once again pass through Nicaragua on their return trip to North America. Note that in some cases a population of a given species may include both winter residents and NA passage migrants; in such cases, we only mention the movements of passage migrants if they add significantly to the size of the population of the winter residents.

There are two status groups that migrate between Nicaragua and South America (SA). Breeding migrants (10 species) arrive from the south to spend the breeding season in Nicaragua, February to August, before returning south during the austral summer. South American (SA) passage migrants only pass through Nicaragua, either traveling north from South America on their way to breeding grounds farther north or traveling south on the return trip. There is no species in Nicaragua whose population is composed solely of SA passage migrants; typically SA passage migrant birds simply add to the population that is already here.

One status group relates specifically to pelagic birds—the pelagic migrant (19 species). Some pelagic species breed on distant islands and disperse widely over pelagic waters after their breeding season, including the pelagic and coastal waters of Nicaragua. Their seasonality does not show a strong pattern.

The vagrant status (14 species) is reserved for species known only from very few records. Nicaragua lies outside of their normal distribution and they are not expected with any frequency.

Finally, in a few cases, when data is insufficient, we describe a bird's status as unknown (3 species).

**Abundance.** Abundance expresses the likelihood of encountering a species, by sight or sound, on any given day. For some birds, the expected abundance changes from location to location or from one time of the year to another. The abundance terms used are the following:

- abundant: Observed almost every day in the field, sometimes in large numbers.
- common: Observed on more than half of all days in the field; frequently encountered.
- uncommon: Observed on fewer than half of all days in the field; infrequently encountered.
- rare: Observed on fewer than 10% of all days in the field.
- very rare: Few records exist. Experienced observers may not encounter the species over the course of years in the field.
- accidental: Only a handful of records exist.
- local: Appears only at specific locations, often being absent from where one might expect to find it based on habitat and other preferences. Note the use of the term in such phrases as *locally common* or *uncommon and local*.

**Distribution.** We briefly describe the distributions within Nicaragua and also include range maps for each species. The country map on the inside front cover will help you locate most of the geographic features and place names that we mention in the text. Three main terrestrial ecoregions are used for reference—the Pacific, Northern Highlands, and Caribbean—along with two marine ecoregions—the Pacific Ocean and the Caribbean Sea. We also reference specific geographic features (e.g., lakes, rivers, lagoons, mountain ranges, volcano peaks, islands), protected areas, and private wildlife reserves within the ecoregions to make our descriptions of the distribution more precise.



The elevation range within which a bird occurs is an important aspect of its distribution. Elevation in Nicaragua ranges from sea level to 6,900 feet (2,100 meters). Generally, we refer to three categories of elevation:

- lowlands: sea level to 700 ft (200 m)
- foothills: 700 to 3,000 ft (200 to 900 m)
- highlands: above 3,000 ft (900 m)

But when the information is available—and relevant—we also offer more precise elevation ranges. We list the elevation information in feet first (rounded to the nearest 100 ft) and in meters in parenthesis (rounded to the nearest 50 m). When the elevation limits are different among the ecoregions, we list the limits separately. While these limits are very helpful, lack of data on some species means that they are not always perfect, and, on occasion, birds are found outside of their normal elevation range, either as accidentals or because of poorly understood seasonal movements.

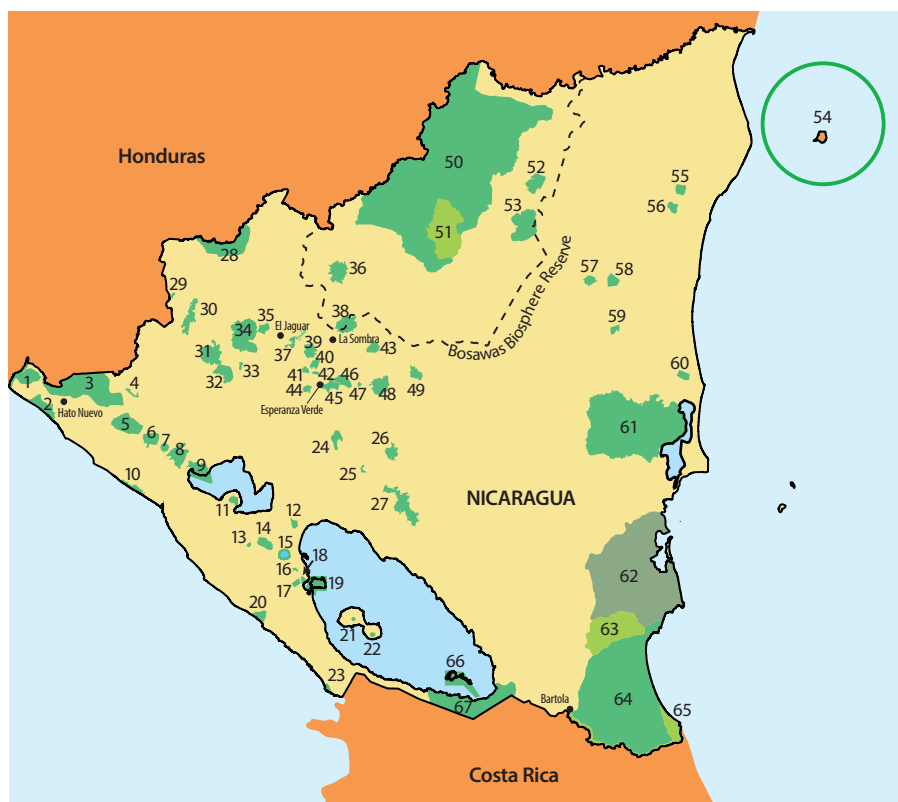
Central America serves as a land bridge between North and South America. It is home to lineages of birds that either originated in North America before spreading south or that originated in South America before spreading north. As a result, several species reach their southernmost distribution (47 species) in Nicaragua, or their northernmost distribution (31 species). We note these cases in the text.

In many cases, we reference protected areas within the Nicaraguan government's protected area system managed by the *Ministerio del Ambiente y Recursos Naturales* (Environmental and Natural Resource Ministry). MARENA oversees 76 protected areas that make up 17% of the national terrestrial territory. The protected areas we reference are categorized as follows:

- BR biological reserve
- GRR genetic resource reserve
- NM national monument
- NP national park
- NR natural reserve
- WR wildlife refuge

In a few cases, we reference privately owned preserves that are members of the *Reservas Silvestres Privadas* (Private Wildlife Reserve) system, which are also legally recognized by MARENA as protected areas. We abbreviate these as RSP. Seventy-one private reserves are members of this program, and some are well-known as birding hotspots, and as a source of valuable distribution records.

# Protected Areas of Nicaragua



## PACIFIC

- 1 – Cosigüina Volcano NR
- 2 – Padre Ramos NR
- 3 – Estero Real NR
- 4 – Apacunca GRR
- 5 – San Cristóbal-Casita NR
- 6 – Rota Volcano NR
- 7 – Telica Volcano NR
- 8 – Pilas-El Hoyo NR
- 9 – Momotombo NR
- 10 – Isla Juan Venado WR
- 11 – Chiltepe NR
- 12 – Tisma NR
- 13 – Chocoyero-El Brujo WR
- 14 – Masaya Volcano NP
- 15 – Laguna Apoyo NR
- 16 – Mombacho Volcano NR
- 17 – Mecatepe NR
- 18 – Río Manares NR
- 19 – Zapatera NP
- 20 – Escalante-Chacocente WR
- 21 – Concepción Volcano NR
- 22 – Maderas Volcano NR
- 23 – La Flor WR

- 24 – Cumaica-Alegre NR
- 25 – Mombachito-La Vieja NR
- 26 – Masigüe NR
- 27 – Amerrisque NR

## NORTHERN HIGHLANDS

- 28 – Dipilto-Jalapa NR
- 29 – Somoto Canon NM
- 30 – Tepesomoto-Pataste NR
- 31 – Quiabuc-Las Brisas NR
- 32 – Tisey-Estanzuela NR
- 33 – Tomabú NR
- 34 – Mirafior and Moropotente NR
- 35 – Yalí Volcano NR
- 36 – Kilambe NR
- 37 – Lake Apanás NR
- 38 – Peñas Blancas NR
- 39 – Dantanlí-El Diablo NR
- 40 – Frio-La Cumplida NR
- 41 – Arenal NR
- 42 – Salto Río Yasicá NR
- 43 – Kuskawas NR
- 44 – Apante NR
- 45 – Yucul GRR

- 46 – Guabule NR
- 47 – Pancansán NR

## CARIBBEAN

- 48 – Quirragua NR
- 49 – Musún NR
- 50 – Bosawas NR
- 51 – Saslaya NR
- 52 – Cola Blanca NR
- 53 – Bana Cruz NR
- 54 – Cayos Miskitos BR
- 55 – Yulu NR
- 56 – Kligna NR
- 57 – Alimikamba NR
- 58 – Limbaika NR
- 59 – Makantaka NR
- 60 – Karawala NR
- 61 – Wawashan NR
- 62 – Cerro Silva NR
- 63 – Punta Gorda NR
- 64 – Indio Maíz BR
- 65 – Río San Juan WR
- 66 – Solentiname NM
- 67 – Guatuzos WR

**Range Maps.** The range maps are intended to be used in conjunction with the distribution descriptions in the text. Given the scale of the maps, they are approximations only. And, it is important to keep in mind that birds will not occur within their depicted range in any regions that lack the appropriate habitat. Because of deforestation, birds reliant upon forest often are very local, in forest patches, or absent altogether unless large areas of forest remain. Needless to say, in the absence of data, in some cases we have been forced to make educated guesses about some distribution ranges.

Colors on the range maps represent the eight statuses previously described (p. 2). In a few cases, a map will have more than one color; in such cases, the total population of the species is composed of two different status categories. The following colors represent the eight statuses:



Purple = breeding resident. The species breeds in Nicaragua and remains present year-round. Some species perform short, seasonal movements within the country, and therefore parts of the shaded area may be occupied only on a seasonal basis. If the breeding resident population is joined by winter residents of the same species, it is not indicated on the range, but only in the text.



Blue = winter resident. A migrant between the Neotropics and North America, with a portion of the population residing in Nicaragua during the nonbreeding season (boreal winter), but returning to North America for the breeding season (boreal summer).



Yellow = passage migrant (NA). A migrant between the Neotropics and North America that passes through Nicaragua for a short span of time on its way to and from wintering grounds farther south.



Red = breeding migrant. A migrant that arrives from the south to breed in Nicaragua; returns south during the austral summer.



Orange = passage migrant (SA). A migrant that passes through Nicaragua, either north toward breeding grounds or south on its return trip to nonbreeding grounds in South America.



Teal = pelagic migrant. A pelagic species that breeds on distant islands and disperses widely over pelagic waters after its breeding season. Its seasonality does not show any strong pattern.



Green (dot) = vagrant. A species known only from very few records; Nicaragua lies outside of its normal distribution. Not expected with any frequency.



Gray = status unknown. Used when there is insufficient information to determine the species' status within Nicaragua.

Distributions described with an accidental status are not colored in on the range maps. However, dots are often used to show where accidental records have occurred. Dots are also used to indicate a bird's presence on the Corn Islands.

**Habitat and behavior.** Often, a bird's habitat and its behavior are critical clues to identification. Birds range from being habitat generalists to habitat specialists. And some behaviors are so distinctive that they can lead to a proper identification. For each species account, we describe the habitat that a species is expected to be found in, general or specific, along with behaviors that can be helpful in making an identification.

Behavior descriptions often include a description of where a bird is likely to be found within its habitat; for birds in forest habitats, this is defined by the level at which they forage. This includes the ground, understory (from ground to 10 ft [3 m] above ground), mid-canopy (from 10 to 30 ft [3 to 9 m] above ground), canopy (from 30 ft [9 m] above ground to the top of the tree crown), and above the canopy. Other behaviors that can be important to observe include whether the species joins same-species or mixed-species flocks; if it attends army ant swarms; and foraging techniques (e.g., sit-and-wait, stalk-and-strike, plunge-diving, gleaning). Some bodily movements are relatively unique, such as tail pumping, pendulous tail swinging, and wing flicking.

**Vocalizations.** Using vocalizations to identify birds is especially helpful in tropical forests, where some birds are often nearly impossible to see. In many species accounts, you will come upon the phrase "more often heard than seen." In addition, vocalizations are the best way to detect nocturnal birds and, in some cases, they are the only way to distinguish between two very similar species. We typically



describe the full song and at least the most common call. Descriptions include the quality or characteristics of the sounds—e.g., length of song, pitch quality and changes, modulation of sound, speed of delivery, and intensity (loudness). When vocalizations are not overly complicated, we transcribe them, signified by italic font. It is important to note that variations on a given song or call should be expected. Vocalizations may differ to an extent between regions, between individuals, and depending on the time of day.

In describing the speed of delivery, dashes indicate a moderately paced delivery that allows for segments of the vocalization to sound distinct (e.g., *chik-der-vee*); absence of punctuation marks or spaces signifies a vocalization with a very fast delivery (e.g., *bzzrrrt*); and a comma indicates a pronounced pause between syllables (e.g., *pip, pip, pip*). In describing inflection and loudness, an accent mark denotes that a syllable is notably emphasized, but not louder than the rest of the vocalization (e.g., *whyáh*); an uppercase letter signals a stressed syllable that is noticeably louder than the rest of the vocalization (e.g., *feu-wEE*); and an exclamation point signals an abrupt and sharp end to a sound (e.g., *wyeeat!*). When a vocalization is repeated at length, an ellipsis is used to denote the ongoing repetition (e.g., *chi-chi-chi...*).

**Endemic status.** An endemic species is one that occurs within a specific region. Depending on how the term is used, the scale of endemism varies, but birders are often interested in country or regional endemics. Nicaragua does not contain any country endemics, but it has several regional endemics, 18 in total. To organize the regional endemics, we subscribe to the Endemic Bird Areas (EBA) proposed by BirdLife International. Four EBAs, with a total of 16 regional endemics, are found within Nicaragua: North Central American highlands, North Central American Pacific slope, Lake Nicaragua marshes, and Central American Caribbean slope. We recognize 2 additional endemic species—a newly named species not yet added to the Central American Caribbean slope EBA and one species that does not fit into the BirdLife EBA scheme. Of course, these categories do not consider subspecies, which are genetically unique. The Mosquitia alone is home to several subspecies that are endemic.

| North Central American highlands EBA     | Central American Caribbean slope EBA |
|------------------------------------------|--------------------------------------|
| Ocellated Quail                          | Lattice-tailed Trogon                |
| Green-breasted Mountain-Gem              | Streak-crowned Antvireo              |
| Bushy-crested Jay                        | Tawny-chested Flycatcher             |
| Rufous-browed Wren                       | Snowy Cotinga                        |
| Blue-and-white Mockingbird               | Gray-headed Piprites                 |
| North Central American Pacific slope EBA | Black-throated Wren                  |
| White-bellied Chachalaca                 | Canebrake Wren                       |
| Blue-tailed Hummingbird                  | Nicaraguan Seed-Finch                |
| Pacific Parakeet                         | Southern Nicaragua to western Panama |
| Lake Nicaragua marshes EBA               | Purple-throated Mountain-Gem         |
| Nicaraguan Grackle                       |                                      |

**Conservation status.** When a species is categorized as threatened with extinction, as determined by the International Union for Conservation of Nature (IUCN), we indicate that in the species account. Threatened species are placed in one of four categories:

NT – near threatened (22 species)

VU – vulnerable (12 species)

EN – endangered (3 species)

CR – critically endangered (1 hypothetical species)

**Illustrations.** We include more than one image for a species whenever there is a significant difference between male and female, adult and immature, or any other significant difference in plumages. Generally, all perched birds on a given page are to the same scale; when there is a change in scale, this is indicated by a horizontal line across the page. Birds in flight are often represented at a smaller scale than the corresponding perched bird or birds. The scale varies from page to page.

**Biogeography and avian distribution.** If there is one thing that is certain about biogeography and avian distribution in Nicaragua, it is that it is often a complicated affair! Patterns do emerge, however, often correlated to elevation and climate, which, in turn, play a critical role in determining habitat. In very simple terms, the country is separated into three terrestrial ecoregions—Pacific, Northern Highlands, and Caribbean—and two marine ecoregions—the Pacific Ocean and the Caribbean Sea.

## The Pacific

The Pacific ecoregion is characterized by picturesque volcanic peaks, dry habitats, two large lakes, and a pronounced dry season. Although it is the driest part of the country, it experiences both a wet season and a dry season. The seasonal extremes of precipitation are such that the vegetation annually cycles between wet, verdant vegetation and dry, brown terrain. Here, drier habitats such as dry forest, thorn forest, and scrub dominate the landscape. But even here, small areas with wetter habitats can be found, namely in the form of gallery forest and cloud forest. Of course, the Pacific coastline is abundant with beach habitat and mangrove forest.

Despite the variety of habitats, dry forest is the dominant habitat in the Pacific. Although, the term *dry forest* can be strictly assigned to a very specific vegetation type based on environmental variables, for the sake of simplicity we use the term to describe a range of forest types, from deciduous to semi-deciduous forest, all



Dry forest as seen in the dry season.



Dry forest as seen in the wet season.

of which endure the intense dry season and respond at some level by dropping leaves. An even more arid forest, stunted in appearance, is the thorn forest. Vegetation is sparse in the thorn forest and the small trees often use thorns as a defense against predators. On the most extreme spectrum of the arid habitats is scrub, consisting of short, woody vegetation. Gallery forest is a unique forest type, consisting of taller trees that line river corridors that are surrounded by dry habitat. Especially in the dry season, this forest stands out, as its higher levels of moisture allow it to maintain its greenery. It can be an oasis for forest dwelling birds during the driest months of the year.

Although the Pacific has an elevation range from sea level to 5,700 ft (1,750 m), most of its terrain is low elevation. Volcanic peaks of the Sierra Maribios rise from the lowlands in the northern Pacific and several more prominent peaks lie in the southern Pacific. Their ascending elevations give way to foothills and small patches of highland terrain. At the northern section of the chain, San Cristóbal and Casita Volcanos reach 5,725 ft (1,745 m) and 4,610 ft (1,405 m) respectively; on these grow highland pine forest. At higher elevations on these peaks, the pine trees host a small number of species that are typically associated with the Northern Highlands. On the outskirts of Granada, Mombacho Volcano reaches 4,413 ft (1,345 m); it is one of two locations in the Pacific with cloud forest, where species that thrive in this habitat can be found in an isolated pocket atop the peak. The other Pacific location with cloud forest is Maderas Volcano, on Ometepe Island, which reaches 4,573 ft (1,394 m).

Gradually rising to the west of Managua are the Sierras Managua. They reach 3,000 ft (900 m) before sloping down to the Pacific coast. Receiving higher amounts of precipitation from the lake effect, these foothills house a slightly more humid forest preferred by some bird species. The peak of Sierras Managua, referred to as *El Crucero*, is a harsh, windblown environment.

The lakes of Nicaragua, referred to as the lakes region in the text, are a prominent biogeographic feature. Not only do they provide an abundance of aquatic habitats, they also lie in a depression that forms a biogeographic barrier between northern Nicaragua and Costa Rica. This depression, along with other factors, creates disjunct populations leading to speciation, and causes some species to reach distributional limits either in Nicaragua or Costa Rica. Also, these lakes and their surrounding freshwater marshes are home to hundreds of species of aquatic birds (e.g., grebes, ducks, rails, shorebirds, waders, gulls, and terns). Marshes are defined as herbaceous vegetation in soil that is flooded with water at least some times of the year. Of special note is Ometepe Island, in Lake Nicaragua, with prominent volcano peaks, marshes, dry forest, and cloud forest. It is a microcosm of climatic gradation across landscapes, with drier habitats on the north island and wetter habitats on the south island.

Habitats on the Pacific coastline also are a dominant feature. Beach types vary from sand to rocky outcroppings. Extensive mudflats are found where the waters of estuaries rise and fall with the tide. Pockets of mangroves dot the Pacific coastline, concentrated on the borders of estuaries.

In the northeast, the Pacific foothills transition into Northern Highland foothills, at approximately 1,300 ft (400 m). To the south, where the Pacific ecoregion transitions into the Caribbean ecoregion, the boundary between the two is less clear. Here the species typical of the Caribbean can also be found in Pacific forests. This is particularly true in the northern region of Sierra Chontaleña, Rivas Isthmus, and areas south of Lake Nicaragua.

## Northern Highlands

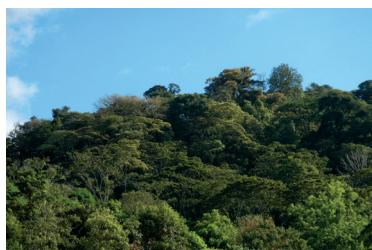
This mountainous ecoregion is defined by the highest peaks in Nicaragua and is home to the southernmost stands of highland pine in Central America. The rapidly changing elevations, and the variation in climatic influences from the Pacific and the Caribbean, create a region with great variability in bird diversity and distributional patterns. The western slopes of the region that connect to Pacific foothills are drier, while the eastern slopes that connect to the Caribbean foothills are wetter. To the west, the intermontane valleys are dominated by arid scrub and thorn forest, while to the east forest more similar to humid lowland forest can be found. As would be expected, the western slopes have more Pacific birds than do the eastern slopes, where Caribbean birds are more prevalent. As the elevations climb higher, highland pine and pine-oak forest begin, and then, at the highest elevations, give way to cloud forest. Within these two fairly localized habitats, most of the highland specialty species are found.

The highland pine and pine-oak forest of Central America extend no further south than the Northern Highlands of Nicaragua. This pattern is mirrored in the avifauna; 34 bird species occur here but no farther south. This forest is dominated by pines and, in some cases, is intermixed with oaks; it generally occurs between 2,600 and 5,900 ft (800 and 1,800 m). Also primarily found in the Northern Highlands, cloud forest is a wet, broadleaf evergreen forest type known for the almost daily presence of clouds recycling moisture into the forest and maintaining high levels of humidity. Within the Northern Highlands, it either occurs at elevations above the highland pine and pine-oak forest, or, where this forest is not present, it may be the dominant forest type at as low as 3,280 ft (1,000 m).

The topography of the Northern Highlands is created by four primary mountain ranges, all of which have a west to east orientation. On the border with Honduras, and within the Segoviana Plateau, Sierra Dipilto-Jalapa boasts the two highest peaks in the country. Cerro Mogotón stretches 6,913 ft (2,107 m) above sea level; slightly to the west, Cerro El Volcán rises to 6,125 ft (1,867 m). This mountain range is home to the largest band of highland pine forest in the country and its highest peaks are covered with cloud forest. To the west of Sierra Dipilto-Jalapa are Sierra La Botija and Tepesomoto-La Patate. The arid habitats in their foothills give way to patches of highland pine and pine-oak forest and cloud forest at the tallest peaks, which reach 5,675 ft (1,730 m). Combined, Sierra Isabelia and Sierra Dariense make up the large mountainous block of the southern half of the Northern Highlands. Both are notably influenced by Caribbean species on their eastern slopes, and bird diversity in the Northern



Highland pine forest.



Cloud forest.

Highlands is at its highest at these locations. Between them is Lake Apanás, which adds to the diversity of avifauna in the region, offering unique aquatic habitat. Sierra Isabela is demarcated by the Coco River to the north and the Tuma River to the south. The continuous expanse of peaks and valleys within the range is comprised of Cerro Tisey-Estanzuela and the highlands of Miraflores and Moropotenito on the western fringe; moving east, Yalí Volcano, 5,059 ft (1,542 m), Cerro Kilambé, 5,741 ft (1,750 m), and the Peñas Blancas Massif, 5,725 ft (1,745 m), are the most dominating presences. Sierra Dariense is demarcated by Tuma River to the north and, to the south, Grande de Matagalpa River, which is the southern edge of the Northern Highlands. While most of the peaks in this range do not reach as high as peaks in other ranges, they are still high enough to support highland pine and pine-oak forest and cloud forest; these include Cerro Dantanlí, 5,085 ft (1,550 m), Cerro Chimborazo, 5,538 ft (1,688 m), and Cerro Apante, 4,731 ft (1,442 m).



Scrub in the foreground and thorn forest in the background.



Humid lowland forest.

## Caribbean

The Caribbean ecoregion is the largest of the three terrestrial regions and receives the highest volume of rain. It is mostly represented by lowland elevations with humid lowland forest and lowland pine savanna. The terrain rises to foothill elevations in the north-central region (mainly in Bosawas Biosphere Reserve), the eastern slopes of Sierra Chontaleña, and the southeastern region (mainly Indio Maíz Biological Reserve); even rarer, highland elevations with cloud forest are present in the north-central region.

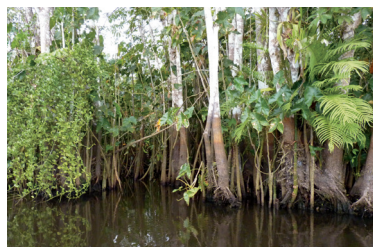
The Mosquitia is a distinct sub-region of the northeast Caribbean. It boasts some of the most intriguing bird species in the country. It is dominated by lowland pine savanna, which is natural grassland scattered with pine woodlands; it supports a number of species that only occur in this habitat. Amid the pine savanna are long rivers with lush gallery forest; and, where there are low-lying areas with poor drainage, rainforest islands persist, creating a patchwork of small, lush forests within the expansive savanna. Both the gallery forest and rainforest islands have vegetation similar to that of humid lowland forest. As a result, the Mosquitia has species unique to lowland pine savanna and also many species associated with humid lowland forest, although the latter are confined to the gallery forests and rainforest islands.

Where forest has not been altered by the human hand, the prominent habitat within the ecoregion is humid lowland forest. This is wet, evergreen forest, with a tall canopy and high species diversity. At higher elevations, humid lowland forest transitions into cloud forest. To the west, on Quirragua (4,478 ft [1,365 m]) and Cerro Musún (4,718 ft [1,438 m]), cloud forest begins at 3,900 ft (1,200). Further east, on Cerro El Toro (5,452 ft [1,662]) and Cerro Saslaya (5,449 ft [1,661 m]), cloud forest begins slightly lower, at 3,600 ft (1,100 m). The mountains tower above the lowlands, creating an exceptional elevational gradient from lowlands to highlands in a short distance. Interestingly, these highland peaks within the Caribbean support disjunct populations of many cloud forest species known primarily from the Northern Highlands.

A prominent feature of the Caribbean is the many river systems that collect water from far inland and drain it into the Caribbean Sea. They attest to the copious amounts of water that fall within the region throughout the year. In low-lying areas closer to the coastlines, where drainage becomes backed up, typical humid lowland forest is replaced by swamp dominated by palm trees. Like the coastline of the Pacific, the Caribbean coastline has sporadic mangroves throughout, particularly in the calmer waters of the larger bays, including Pearl Lagoon and Bluefields Bay.



Lowland pine savanna.



Swamp.

## **Pacific Ocean and Caribbean Sea**

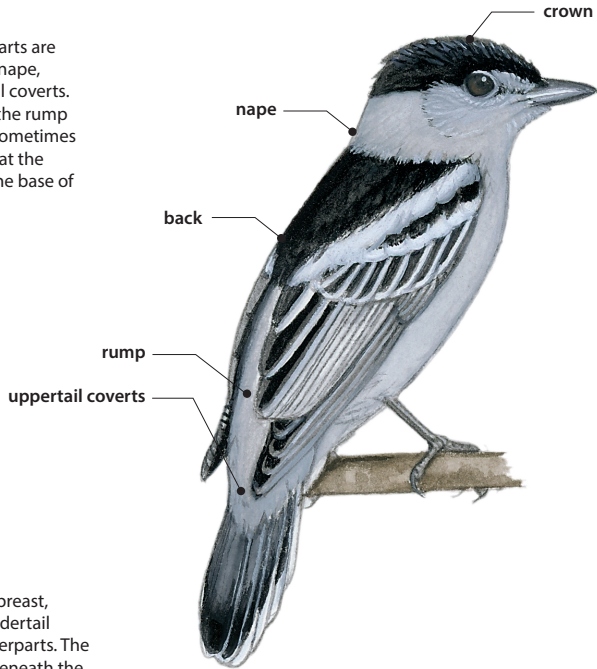
Nicaragua's two oceans create pelagic and coastal habitat for a variety of birds. Similar though they are in some ways, each coast has unique geographic features that create distinct foraging and breeding habitats. On the Pacific Ocean, the Gulf of Fonseca, shared by El Salvador, Honduras, and Nicaragua, is an area of calm waters that some species prefer for foraging. The Farallones Islets are rocky islands that jut out of the gulf, creating roosting and breeding surfaces for a large number of birds. On the Caribbean Sea, several lagoons and bays offer calm foraging waters, and the Miskito and Booby Cays, not far off the coast, create roosting and breeding habitat. Finally, the Big and Little Corn Islands, 43 miles (70 km) offshore of Bluefields, are an important refuge for migratory birds.



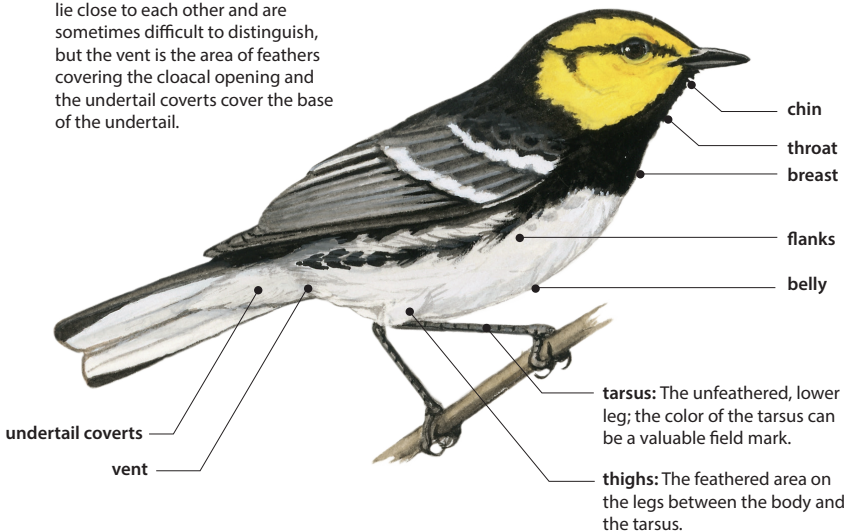
## Anatomical Features

See the Glossary, p. 21, for definitions of terms not related to bird anatomy.

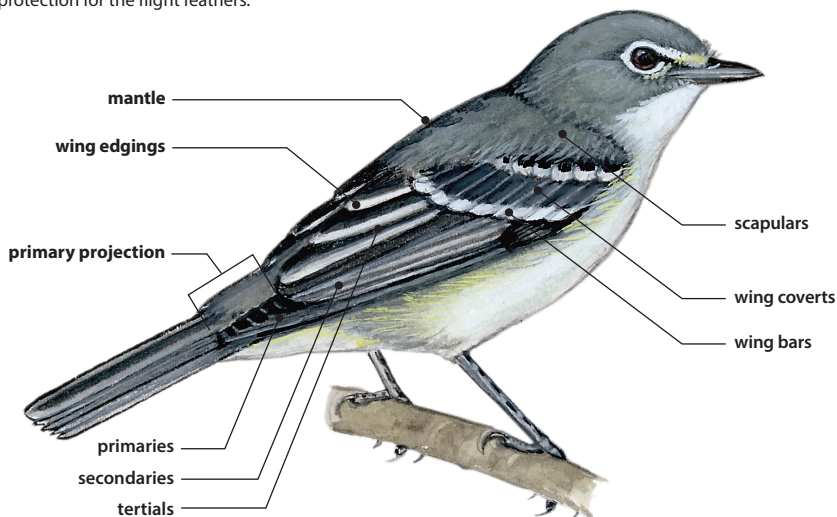
**Upperparts:** The upperparts are composed of the crown, nape, back, rump, and uppertail coverts. Distinguishing between the rump and uppertail coverts is sometimes a tricky affair, but note that the uppertail coverts cover the base of the uppertail.



**Underparts:** The throat, breast, flanks, belly, vent, and undertail coverts make up the underparts. The small area immediately beneath the lower mandible is referred to as the chin. The vent and undertail coverts lie close to each other and are sometimes difficult to distinguish, but the vent is the area of feathers covering the cloacal opening and the undertail coverts cover the base of the undertail.

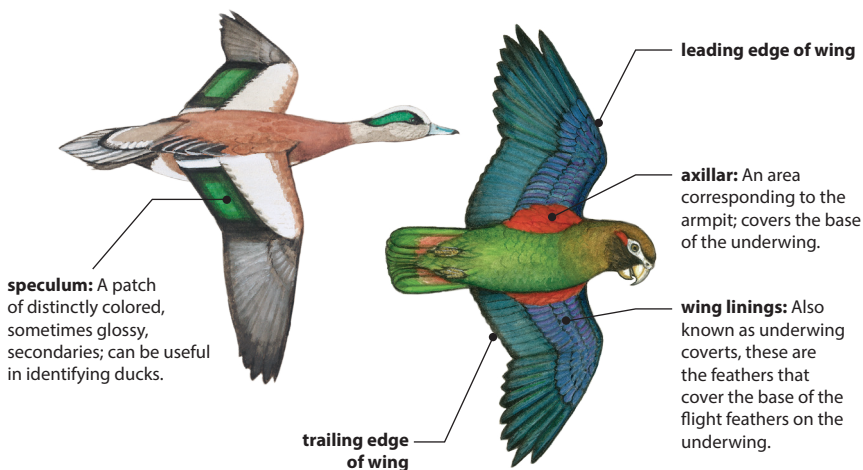


**Wings:** The wing feathers consist of two categories—flight feathers and covert feathers—both of which can aid in identification. Flight feathers are primarily designed for flight, while covert feathers provide protection for the flight feathers.



Flight feathers consist of three sets. The **primaries** are the 9–10 outermost, longest, and narrowest flight feathers. The **secondaries** are located between the primaries and tertials; they are shorter and broader than the primaries. The **tertials** are the 3–4 innermost feathers; when the wing is folded, they act as protective cover for the other flight feathers. On the folded wing, the **primary projection** is the length that the primary tips extend beyond the longest secondaries or tertials.

The covert feathers on the upperwing often aid in identification. The rows of feathers that cover the base of the flight feathers are called **wing coverts**. When wing coverts have pale tips, they form **wing bars**. The **scapulars**, corresponding to the shoulder, cover the area where the wings connect to the body. The upper back is referred to as the **mantle**. Paler colors on the edges of either flight feathers or wing coverts are called **wing edgings**, and create a finely streaked appearance.



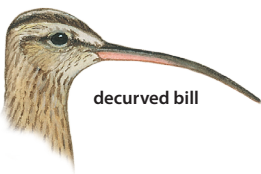


**Head:** The head is sometimes the only thing you see on a bird, and typically provides important field marks for identification. They include the shape of the head; head plumage patterns; shape, size, and color of the bill; and the color of the eyes.

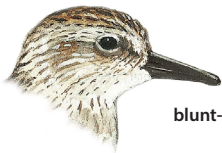
**Bill Shapes**



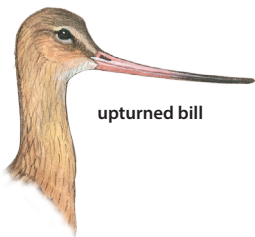
conical bill



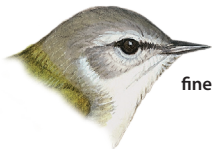
decurved bill



blunt-tipped bill



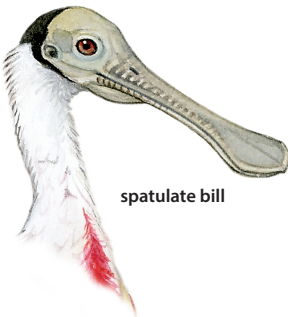
upturned bill



fine-tipped bill

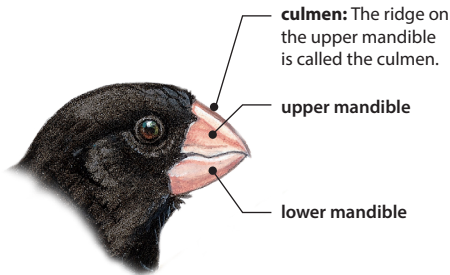


hook-tipped bill



spatulate bill

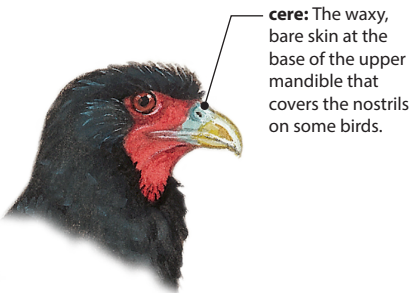
**Bill Parts**



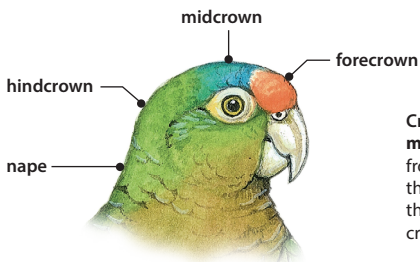
**culmen:** The ridge on the upper mandible is called the culmen.

upper mandible

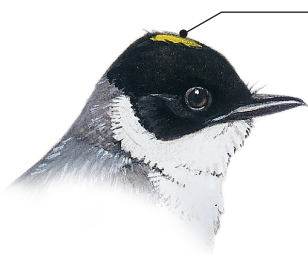
lower mandible



**cere:** The waxy, bare skin at the base of the upper mandible that covers the nostrils on some birds.



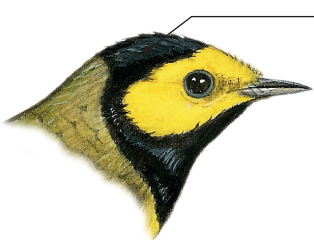
**Crown:** The crown is composed of the **forecrown**, **midcrown**, and **hindcrown**. The forecrown extends from the bill to the front of the eyes. The midcrown is the center of the crown. The **hindcrown** extends from the back of the eyes to the nape. Descending from the crown is the **nape**, an area corresponding to the neck.



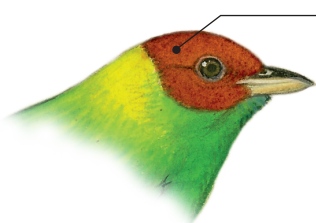
**crown patch:** Sometimes there is a set of erectile feathers concealed below the crown; they are very rarely raised for display.



**crest:** Some crown feathers have the ability to be raised into a crest or remain fixed in a raised position.



**hood:** The hood is generally formed by feathers of the same color that go from the top of the head to the bottom (usually including the crown, nape, and throat), and often contrasting with the forehead, eye area, and chin.

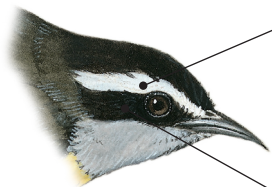


**half-hood:** The half-hood includes the crown and cheeks, but not the chin and throat.



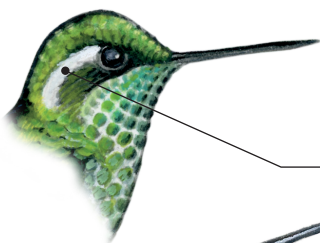
**supraloral:** The area above the lore.

**lore:** The area between the base of the bill and the eye.

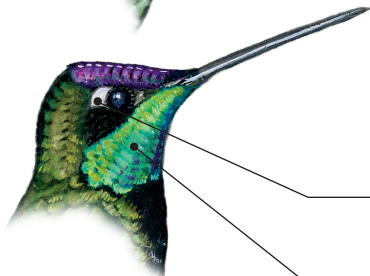


**superciliary:** The superciliary is a differently colored line that extends from the base of the bill to behind the eye, which it passes over (includes the supraloral).

**eye line:** A differently colored line that crosses from the lore to behind the eye and appears to pass "through the eye."

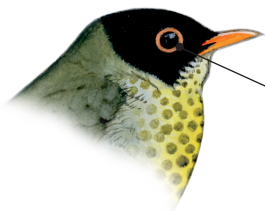


**postocular stripe:** A differently colored line that begins behind the eye.



**postocular spot:** A differently colored small area behind the eye; can be round, square, or teardrop in shape.

**gorget:** An iridescent patch of feathers on the throat and upper breast of some hummingbirds.



**eye ring:** When the feathered circle around the eye is conspicuously colored it is called an eye ring. An eye ring that is not continuous is called a broken eye ring. If there is only half of an eye ring, above or below the eye, it is referred to as an eye crescent. (A broken eye ring is formed by two eye crescents.)



**orbital skin:** Featherless area of skin around the eye. It is called an orbital ring when it forms a circle immediately around the eye.

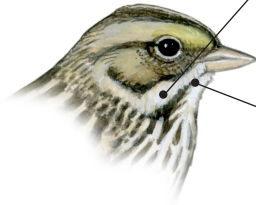


**spectacles** (formed with the lore)

When the color of the eye ring is continuous with the color of either the lore (sometimes supraloral) or the postocular stripe, it forms spectacles.



**spectacles** (formed with the postocular stripe)



**malar stripe:** A differently colored line descending from the base of the lower mandible along the lower edge of the ear coverts.

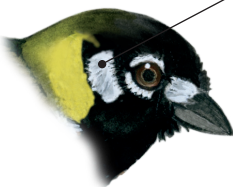
**lateral throat stripe:** A differently colored line bordering the throat; sits below the malar stripe.



**moustachial stripe:** A differently colored line that extends horizontally from the malar area to below the ear coverts.

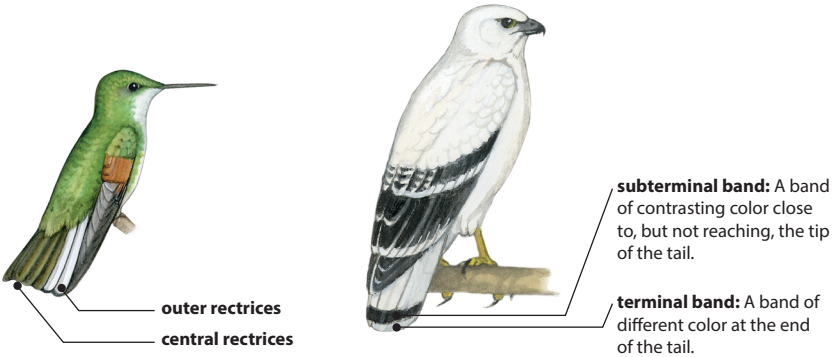


**mask:** When a dark area surrounds the eye, usually extending from the base of the bill to ear the coverts, it is called a mask; a reduced mask may be little more than an area from the lore to the back of the eye.

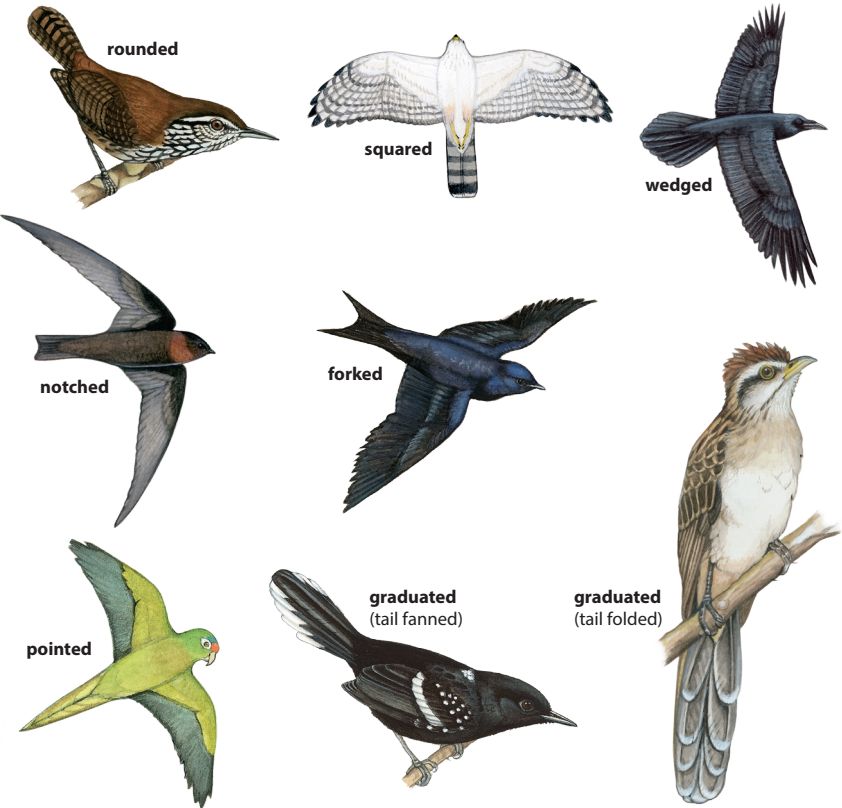


**ear patch (cheek):** Ear coverts are small feathers covering the ear openings located behind the eye. When these feathers contrast in color with surrounding feathers, they form an ear patch (cheek).

**Tail:** Individual feathers on the tail are referred to as rectrices; the difference between the color pattern of the outer rectrices and the central rectrices can be important. Rectrices with paler outer tips are sometimes a distinguishing field mark.



**Tail Shapes**



# Glossary

See Anatomical Features (p. 14) for additional definitions.

**army ant swarm.** Massive groups formed by foraging army ants. Many bird species attend army ant swarms, feeding on arthropods as they attempt to flee the swarm.

**austral.** Pertaining to the southern hemisphere.

**barred.** The plumage pattern formed by horizontal bars.

**disjunct.** A biogeographic term used to describe a species with two or more populations that are not connected to one another.

**boreal.** Pertaining to the temperate region of the northern hemisphere; its climate is characterized by long winters and short summers.

**brood parasite.** A bird species that lays its eggs in the nest of another species, where they are incubated and raised, by the unwitting host.

**breeding plumage.** A plumage worn by birds during their breeding season; typically more colorful and distinctly patterned than the plumage of birds that are not breeding. Most often in reference to North American migrants, which may arrive to Nicaragua in this plumage or molt into this plumage prior to returning north.

**buffy.** A pale yellowish color (e.g., as seen on the rump of the Buff-rumped Warbler).

**carpal patch.** A patch of differently colored feathers on the underwing at the spot corresponding to the wrist.

**chevroned.** The zigzag plumage pattern formed by adjacent V-marks.

**covey.** A group, or flock, of quail.

**cosmopolitan.** Describes a species, genus, or family with a worldwide distribution.

**cracid.** A bird that belongs to the Cracidae family (guans, chachalacas, and curassows).

**cryptic.** Describes a plumage pattern or behavior that allows a bird to go unnoticed.

**dabbling.** In reference to ducks, the behavior of foraging for aquatic food by immersing the front half of the body while tipping the rear up.

**dihedral.** Describes the angle formed when the wings are held in a V-shape.

**EBA.** Abbreviation for Endemic Birds Areas, as described by BirdLife International.

**endemic.** Describes a species that is confined to a limited geographic region.

**epiphyte.** Plants that grow entirely on the substrates available within the canopies and trunks of trees, without rooting into the ground.

**extirpated.** Describes birds that no longer occur in a specific area; sometimes referred to as locally extinct.

**facial disc.** The concave, feathered area surrounding the eyes that acts as a parabolic device to direct sound waves, primarily in reference to owls.

**frontal shield.** A hard or fleshy plate extending from the base of the upper mandible to the forehead. Typically found on gallinules, moorhens, and jacanas.

**frugivorous.** Describes birds that feed on fruit.

**gape (or flange).** The point where the upper and lower mandible join.

**genus** (plural: **genera**). The taxonomic group below the level of family, usually containing multiple species.

**glean.** To catch invertebrates by plucking them from foliage or the ground.

**gregarious.** Describes the behavioral propensity to form groups, either to feed or during colonial roosting or nesting.

**gular pouch (or sac).** A bulge of fleshy skin on the throat.

**hawking.** Snatching food, usually insects, in flight, with only the bill, and subsequently consuming the prey without landing to perch.

**immature.** Term used to describe all ages prior to adult plumage.

**insectivorous.** Describes the feeding preference for insects.

**irruptive.** Refers to a species' irregular movement, temporarily and in large numbers, into an area that is outside its normal distribution.

**kettle.** Large groups of soaring birds, circling as a group. A kettle may be composed of several different species, and most often refers to migrating raptors.

**kleptoparasitism.** The feeding behavior of stealing food from another bird, not necessarily of the same species. Most often in reference to some pelagic species.

**leaf litter.** The accumulation of decomposing leaves and twigs on the forest floor.

**lek.** A congregation of males that perform breeding displays in order to attract females and compete for mating opportunities.

**mixed-species flock.** Flocks composed of multiple species; such flocks increase foraging efficiency and are better able to spot predators.

**monotypic.** Describes a genus or family that only consists of one species.

**morph.** Species sometimes occur in different colors, and these are referred to as morphs. A species with several morphs is polymorphic.

**mottled.** The plumage pattern formed by small, erratically spaced spots.

**Neotropics.** The biogeographic region extending from southern Mexico through South America.

**nonbreeding plumage.** A plumage worn by nonbreeding birds; typically less colorful and less distinctly patterned than birds in breeding plumage. Most often in reference to North American migrants, which retain this plumage for most of their time in Nicaragua.

**nuchal collar.** A contrasting band located on the nape, at the base of the hindcrown.

**pantropical.** Describes a distribution range that includes the tropics of both western and eastern hemispheres.

**pelagic.** Refers either to the open ocean, far from the coast, or to a species that primarily lives in this habitat.

**polyandrous.** The reproductive behavior in which one female pairs with several males.

**polymorphic.** When a species includes birds with two or more different plumage colors or forms.

**primary forest.** A relatively undisturbed forest.

**raptor.** Collectively describes birds equipped to hunt larger prey; includes osprey, vultures, hawks, kites, eagles, falcons, caracaras, and owls. A bird of prey.

**rectal bristles.** Stiff hairlike feathers at the base of the bill. Typically found on nightjars, flycatchers, and swallows.

**roost.** Where a bird sleeps.

**rufous.** A brownish-red color (e.g., the color on the head of Rufous-capped Warbler).

**sally.** To perform small flights to catch insects; after making a sally, the bird typically returns to the same branch or general area to perch.

**scaled.** The plumage pattern formed by what appear to be scales; caused by many small feathers overlapping one another.

**second growth.** Describes a forest with young successional growth after a heavy disturbance; typically with dense, shrubby vegetation that is under 10 ft (3 m) tall.

**secondary forest.** Describes a forest that is regenerating after significant disturbances. The resulting forest structure is less mature and less stable than that of primary forest.

**sexual dimorphism.** A characteristic of some species in which the male and female show different physical characteristics, often size, coloration, or adornment.

**shorebird.** Collectively describes birds that rely on aquatic shorelines to forage for food. Includes plovers, sandpipers, oystercatchers, jacanas, and stilts and avocets.

**speckled.** The plumage pattern formed by very small, scattered spots or specks.

**spotted.** The plumage pattern formed by large spots; the spots are less densely spaced than on mottled birds.

**stitching.** A shorebird foraging strategy of making rapid probes with the bill in mud or sand; such birds typically move in a line.

**striped.** The plumage pattern formed by vertical lines; less densely spaced than on a streaked pattern.

**streaked.** The plumage pattern formed by vertical lines; more densely spaced than on a striped pattern.

**subspecies.** A taxonomical level describing genetically distinct populations within a species; most often results from geographic isolation of breeding populations. May or may not show plumage, body size, or vocalization differences.

**sympatric.** Refers to two species that share, at least partially, the same distribution.

**tawny.** An orangish-brown to yellowish-brown color (e.g., the color seen on the crown of the Tawny-crowned Greenlet).

**territorial.** Describes birds that defend a resource from competing individuals or groups.

**trapline.** The hummingbird foraging strategy in which the birds move between nectar sources separated by considerable distances instead of defending a territory; primarily done by hermit hummingbirds.

**IUCN.** The International Union for Conservation of Nature is a global non-governmental organization responsible for assessing a species' conservation status.

**vermiculated.** The plumage pattern formed by thin, wavy lines.

**wader.** Collectively describes birds that primarily rely on the shallow waters of aquatic habitat to forage for food. Includes storks, bitterns, herons, egrets, and ibises.

**wattle.** Fleshy, ornamental skin hanging from different parts of the head; typically found on males.

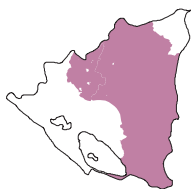




## Species Accounts and Illustrations

## TINAMOUS Tinamidae

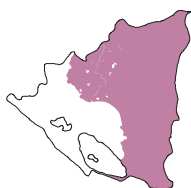
These terrestrial, secretive birds occur in forests throughout the Neotropics, where they roam the forest floor in search of fruit, seeds, and small invertebrates, and nest within exposed tree buttresses. Tinamous are recognized by the disproportionate size between their small dovelike head and plump chicken-like body; they have a very short tail and short, stocky legs. Leg color, body size, and vocalizations are important distinguishing characteristics for identification within the family. Tinamous are more often heard than seen because of their secretive behavior and cryptic plumage. The tremulous and pleasantly haunting vocalizations they make at dawn and dusk are unforgettable.



### Great Tinamou (Tinamú Grande)

*Tinamus major*

17 in (43 cm). **Largest** tinamou. **Large size** and **gray legs** distinguish it from the other, smaller tinamou. Generally common in the Caribbean but abundant in Bosawas Biosphere Reserve and Indio Maíz BR; rare and local on eastern slopes of Northern Highlands; to 4,600 ft (1,400 m). When foraging, walks quietly on ground of humid lowland forest and cloud forest. Shy and secretive; more often heard than seen as it vocalizes from within dense forest cover, primarily at dawn and dusk. Whistles a series of forlorn, quivering notes, often rising in pitch, strength, and undulation toward end of series; similar to that of Little Tinamou but lower pitched. **NT**



### Little Tinamou (Tinamú Chico)

*Crypturellus soui*

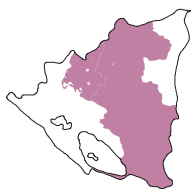
9 in (23 cm). **Small size** and **lack of barring** distinguish it from other tinamou. Only tinamou with **dull yellow legs**. Common throughout Caribbean lowlands and foothills; to 3,300 ft (1,000 m). Uncommon and local on eastern slopes of Northern Highlands; to 4,600 ft (1,400 m). Forages by gleaning seeds, berries, and insects from the ground in primary forest edge and second growth. Vocalizes during the day, unlike other tinamou. Gives a single clear whistle that rises in pitch before falling with undulating tones (sometimes emphatically repeats an accelerating whistle that rises in pitch); also whistles a series of 2 notes (with first note rising and second note falling). Call similar to that of Great Tinamou, but higher pitched.



### Thicket Tinamou (Tinamú Canelo)

*Crypturellus cinnamomeus*

11.5 in (29 cm). A medium sized tinamou with **extensively barred black and buffy-white** upperparts (black and cinnamon on female Slaty-breasted Tinamou); on male, **cinnamon breast** usually contrasts with slate-gray breast of similar Slaty-breasted Tinamou (difference not always detectable on respective females). Note **orange-red legs**. Common and local in Pacific lowlands and foothills (only tinamou species in that region); to 3,000 ft (900 m). Uncommon in Northern Highlands (no known records east of Lake Apanás); to 4,600 ft (1,400 m). Inhabits dry forest, thorn forest, cloud forest edge, and second growth. Feeds while walking on the ground; remains hidden within dense thickets and shrubbery of understory. Gives a single, 1-second, high-pitched whistle; there is a considerable amount of time between repetitions (seemingly nonconsecutive).



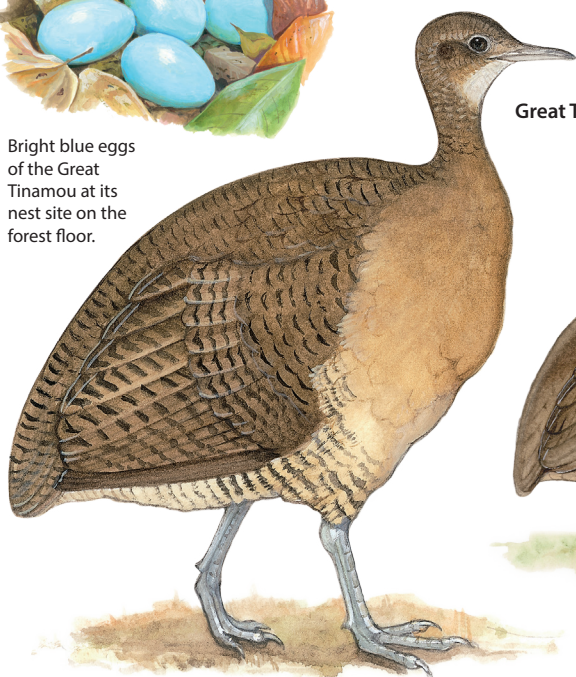
### Slaty-breasted Tinamou (Tinamú Pizarroso)

*Crypturellus boucardi*

11 in (28 cm). Named for **unpatterned slate-gray breast**, which differs from cinnamon breast of similar Thicket Tinamou (color of breast on respective females sometimes impossible to distinguish). Noticeably sexually dimorphic; back and wings are dark brown on male but **extensively barred with black and cinnamon** on female (black and buffy-white on female Thicket Tinamou). Note **red legs**. Common in Caribbean (more likely in lowlands and foothills); rare on eastern slopes of the Northern Highlands; to 4,600 ft (1,400 m). Prefers humid lowland forest and cloud forest, where it feeds on fruit and seeds on the ground. Intermittently repeats a hollow 2-note whistle; low-pitched in comparison to the other tinamou vocalizations.



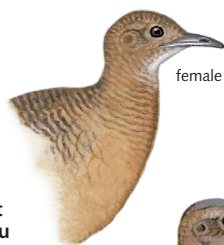
Bright blue eggs  
of the Great  
Tinamou at its  
nest site on the  
forest floor.



**Great Tinamou**

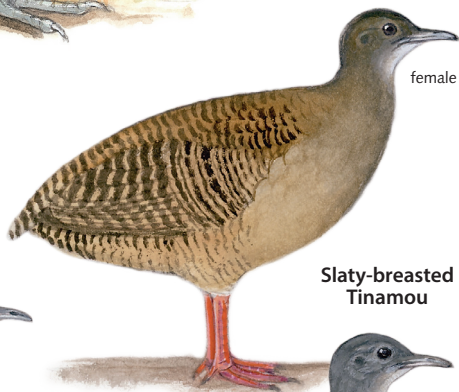


**Little Tinamou**



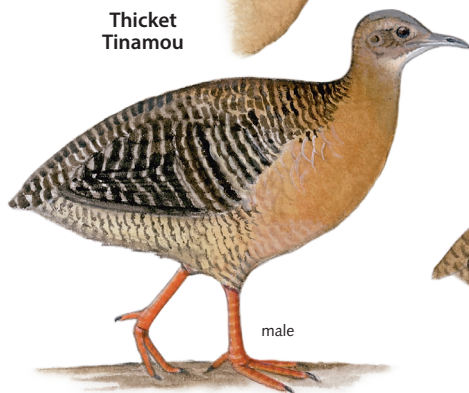
female

**Thicket  
Tinamou**

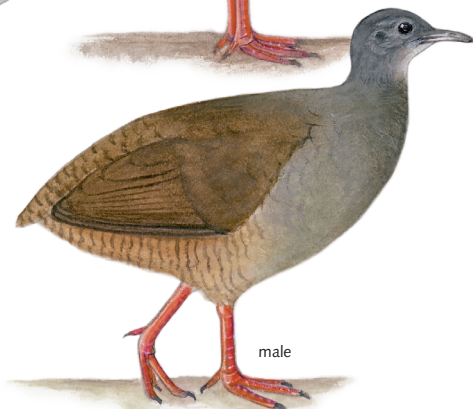


female

**Slaty-breasted  
Tinamou**



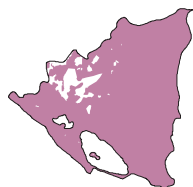
male



male



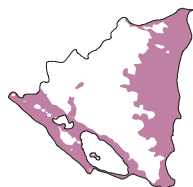
These web-footed, aquatic birds are found worldwide. Their broad, flattened bills with rounded tips set them apart from other aquatic birds. The majority of Nicaraguan ducks are migratory (13 species), spending a portion of the year in boreal North America; only 4 breed in-country. Except for the whistling-ducks, all exhibit sexual dimorphism (and some of these molt from nonbreeding to breeding plumage while in Nicaragua, adding to identification challenges). Ducks are linked exclusively to aquatic habitats, where they feed on aquatic plants, insects, fish, mollusks, worms, and amphibians. Most ducks fall under one of two foraging categories: dabbling ducks (genera *Spatula*, *Mareca*, and *Anas*) feed on the water's surface, often raising their back end and foraging with their head submerged; diving ducks (genus *Aythya*) plunge their entire body underwater to forage at greater depths.



**Black-bellied Whistling-Duck** (Piche Piquirrojo) *Dendrocygna autumnalis*  
20 in (50 cm). Only Nicaraguan duck with **red-orange bill** and **pink legs**; also note **black belly**. In all plumages, flying birds show a distinctive **white stripe across wing coverts**. Immature, with gray bill and legs, can be confused with immature Fulvous Whistling-Duck, but rump is dark and white stripe is still noticeable. Abundant countrywide; to 3,300 ft (1,000 m). Found in marshes, lakes, lagoons, and ponds; sometimes visits mangroves, estuaries, and salt ponds. Primarily feeds at night in shallow waters, foraging for plant material and invertebrates. Gives various high-pitched, screamlike whistles, sometimes leading to a *whit-WEE-whiwhiwhiwhiwhi* phrase; flocks often create a continuous cacophony.



**Fulvous Whistling-Duck** (Piche Canelo) *Dendrocygna bicolor*  
19 in (48 cm). **White stripes on flanks** of perched or swimming birds are diagnostic; **white U-shaped band on rump** is diagnostic on birds in flight. Similar to immature Black-bellied Whistling-Duck, but note **black wings**. Common in the Pacific, Playitas-Moyúa-Tecomapa lagoons and Lake Apanás, and extreme southwestern Caribbean lowlands; to 3,300 ft (1,000 m). Prefers marshes, lakes, lagoons, and rice fields; less frequent in brackish waters. Forages in shallow waters for plant material, especially at night. Calls with a loud and raspy *pi-CHEW*.



**Muscovy Duck** (Pato Real) *Cairina moschata*  
M 32 in (82 cm); F 25 in (64 cm). **Glossy black-green coloration** and obvious **white under- and upper-wing patches** make this duck unmistakable. Wing patches are significantly smaller on female and immature. (Beware of domesticated varieties, which vary in color and often have mostly white plumage with some black spots.) Common in Caribbean lowlands and uncommon and local in Pacific lowlands and foothills; locally very rare on Lake Apanás. Prefers wooded lakes, rivers, marshes, and mangroves, where it feeds on aquatic plants, grains, small fish, and insects. Very shy; mostly observed flying to and from feeding locations at dawn and dusk, likely a learned behavior resulting from extensive hunting pressure.

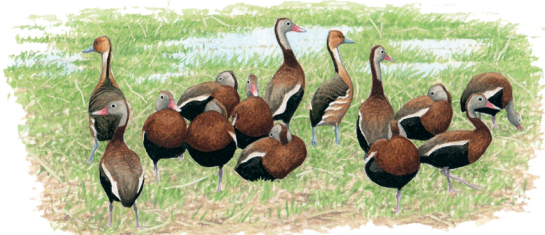
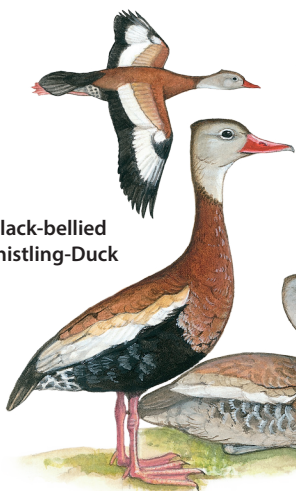


**Masked Duck** (Pato Careto) *Nomonyx dominicus*  
13.5 in (34 cm). On breeding male, large **black mask contrasting with chestnut nape, neck, and breast** is distinctive; also note **broad blue bill with black tip**. Two prominent **horizontal dark stripes on face** of female separate it from similar female Ruddy Duck; nonbreeding male and immature resemble female. Rare to uncommon, in Pacific, Northern Highlands, and southern Caribbean; to 3,900 ft (1,200 m). Found on calm, shallow waters, within or near dense, emergent aquatic vegetation.



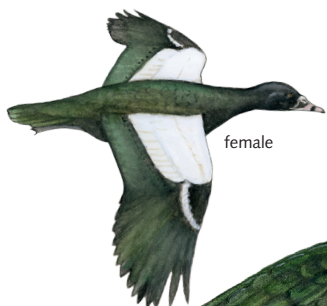
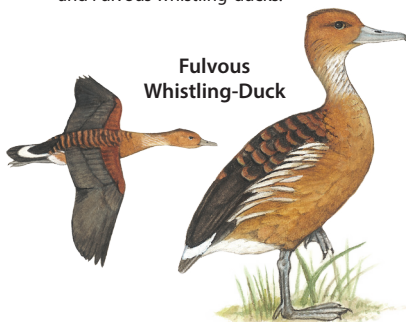
**Ruddy Duck** (Pato Cariblanco) *Oxyura jamaicensis*  
15 in (38 cm). Distinctive **white cheek on male** contrasts with **black crown and nape**. Female and immature show a **single dark horizontal line on cheek**, which distinguishes it from similar female Masked Duck. Winter resident (Nov to early April); uncommon to common in Pacific lowlands and foothills; also occurs up to 3,900 ft (1,200 m) on western slopes of Sierra Isabela and Sierra Dariense in Northern Highlands. Most likely at Salinas Grandes salt ponds, Moyúa Lagoon, and Lake Apanás. Recent records in May and June at Playitas-Moyúa-Tecomapa lagoons may indicate the colonization of breeding populations in Nicaragua. Forages in marshes by diving for seeds, roots of aquatic plants, insects, and small crustaceans.

**Black-bellied Whistling-Duck**

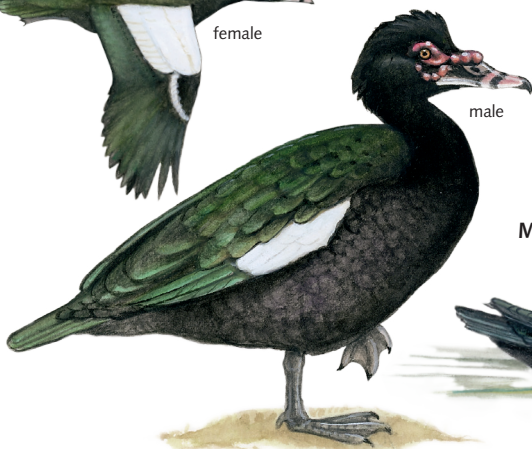


A mixed group of Black-bellied and Fulvous whistling-ducks.

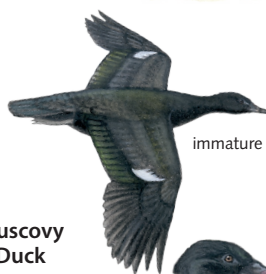
**Fulvous Whistling-Duck**



female



male

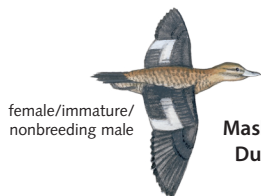


immature

**Muscovy Duck**



immature

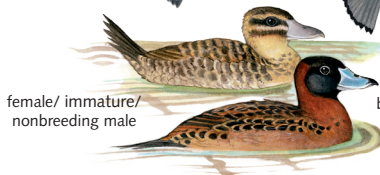


female/immature/  
nonbreeding male



breeding male

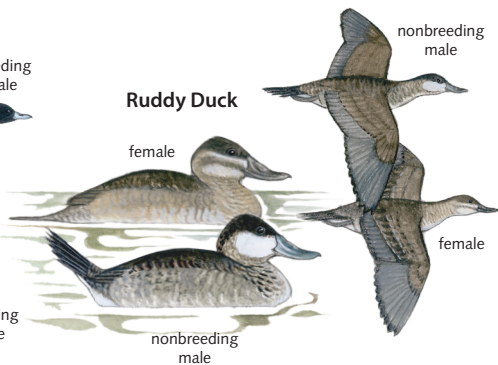
**Masked Duck**



female/immature/  
nonbreeding male

breeding male

**Ruddy Duck**

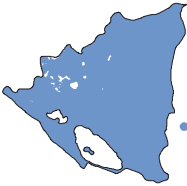


nonbreeding male

female

female

nonbreeding male



**Blue-winged Teal** (*Cerceta Aliazul*)

15 in (39 cm). On breeding male, **white facial crescent** contrasting with **dark head** is distinctive. Female has faint facial crescent with a distinct **dark eye line** and **broken white eye ring**; it is helpful to compare bill length with those on other similar females (shorter than Cinnamon Teal; longer than Green-winged Teal, p. 32); nonbreeding male and immature resemble female. In all plumages, note yellow legs (Green-winged Teal has dusky legs). In flight, on male and female green speculum contrasts with pale blue secondary wing coverts, as on Cinnamon Teal and Northern Shoveler. Winter resident (Sept to April); abundant countrywide with few individuals remaining year-round; to 4,300 ft (1,300 m). Found on lakes, ponds, rice fields, marshes, and mangroves, where it forages for insects, small invertebrates, and submerged aquatic vegetation.

*Spatula discors*



**Cinnamon Teal** (*Cerceta Castaña*)

16 in (40 cm). Distinctive **chestnut-cinnamon plumage** of breeding male fades to a faint wash in nonbreeding plumage, but he retains **red iris**. Female has plain face with an indistinct **dark eye line**; richer coloration and **longer, slightly spatulated bill** is helpful in comparisons with female Blue-winged Teal and Green-winged Teal (p. 32), which have similar plumage. In flight, green speculum contrasts with pale blue secondary wing coverts, a pattern similar to that on Blue-winged Teal and Northern Shoveler. Also note yellow legs (Green-winged Teal has dusky legs). Rare winter resident (Nov to March) in Pacific lowlands; to 500 ft (150 m). Accidental in Caribbean lowlands, with 1 record (San Juan del Norte, Nov 1982). Frequents lakes, ponds, rice fields, marshes, and mangroves, where it forages for insects, small invertebrates, and submerged aquatic vegetation.

*Spatula cyanoptera*



**Northern Shoveler** (*Pato Cuchara*)

19 in (48 cm). In all plumages, the diagnostic feature is its **large, spatulate bill that is longer than the head**. Breeding male is unmistakable; female and immature have buffy head and an orange bill with dusky smudging (nonbreeding male is similar, but note yellow eye and indistinct white patch at base of bill). In flight, green speculum with broad white border contrasts with pale blue secondary wing coverts, a pattern similar to that on the smaller bodied (and billed) Blue-winged Teal and Cinnamon Teal. Winter resident (Oct to April, occasionally to mid-May). Common in Pacific lowlands and Playitas-Moyúa-Tecomapa lagoons. Rare to uncommon on Lake Apanás; at 3,300 ft (1,000 m). Rare to uncommon in extreme southwestern Caribbean lowlands; otherwise accidental in Caribbean. Dabbles for plant material and aquatic invertebrates in shallow ponds, lakes, and coastal marshes.

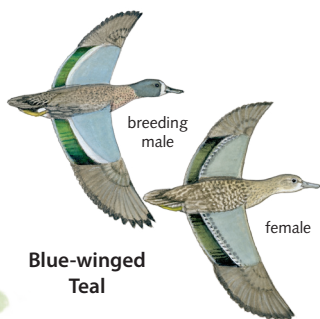
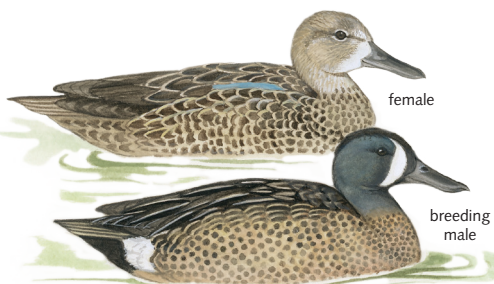
*Spatula clypeata*



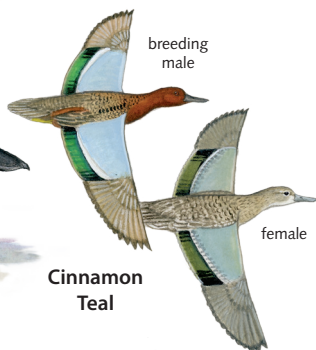
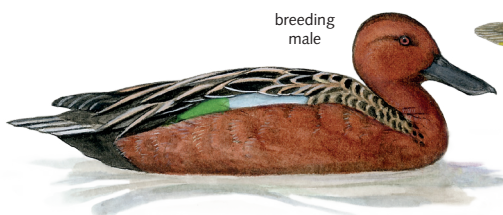
**American Wigeon** (*Pato Calvo*)

18.5 in (47 cm). Small **pale blue bill with black tip** separates this from other ducks. In flight, conspicuous white secondary coverts (grayer in female and immature) distinguish it from other dabbling ducks. Male in breeding plumage is unmistakable, with **white or buffy crown** and **green postocular stripe**; male in nonbreeding plumage resembles female, which has **speckled gray head with a faint dark mask** and cinnamon flanks. Uncommon to common winter resident (Nov to mid-April); countrywide, to 3,900 ft (1,200 m). Seen in estuaries, ponds, and along lake shores, where it forages by dabbling for plant material.

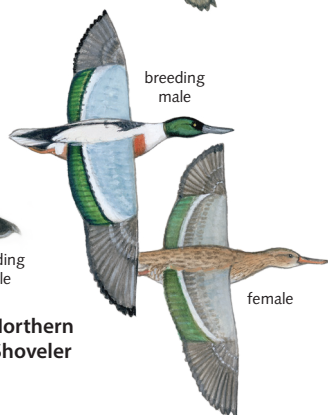
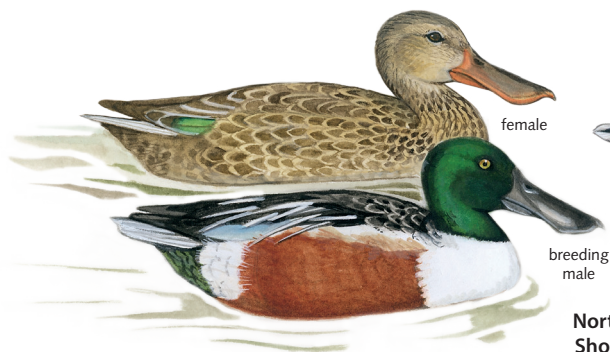
*Mareca americana*



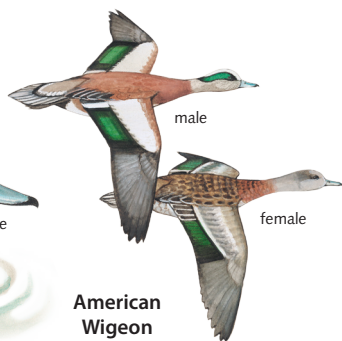
**Blue-winged Teal**



**Cinnamon Teal**

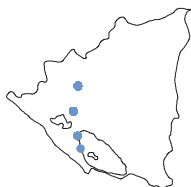


**Northern Shoveler**



**American Wigeon**



**Mallard** (Pato Cabeciverde)*Anas platyrhynchos*

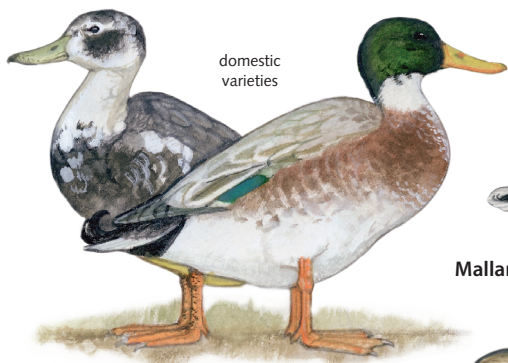
23 in (58 cm). Largest dabbling duck. Male in breeding plumage has narrow **white collar**, **chestnut breast**, and **yellow bill**. Female is mottled brown overall, with a dark eye line and mostly **orange bill (dark central smudging)**; nonbreeding male and immature resemble female but with yellowish (male) and brown (immature) bills. In flight, note flashy **white underwings** and **blue speculum with white border**. Accidental winter resident, with records from Lake Apanás, Playitas-Moyúa-Tecomapa lagoons, Guayabo Wetlands, and Lake Nicaragua; to 3,300 ft (1,000 m). Forages for plant material and small invertebrates in shallow waters of freshwater marshes.

**Northern Pintail** (Pato Rabudo)*Anas acuta*

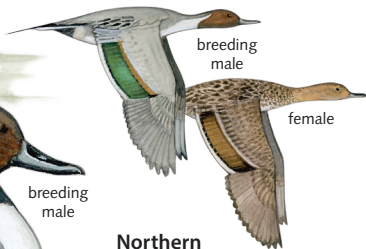
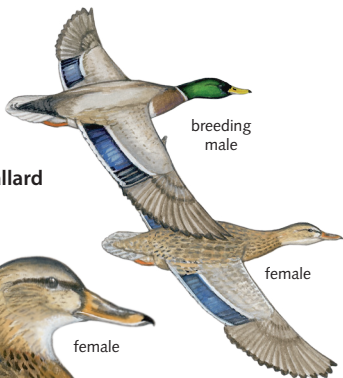
22.5 in (57 cm). **Long neck, pointed tail**, and **slender body** make this attractive dabbling duck unmistakable. Male in breeding plumage has **dark brown head with white neck-stripe** and white breast. Female has an **unmarked buffy head**, but told apart from other dabbling ducks by unique body form; nonbreeding male and immature are similar to female. Uncommon to common winter resident (Oct to April) in Pacific and at Lake Apanás; to 3,300 ft (1,000 m). Uncommon in southwestern Caribbean lowlands. Found on lakes, freshwater and coastal ponds, lagoons, and brackish marshes.

**Green-winged Teal** (Cerceta Común)*Anas crecca*

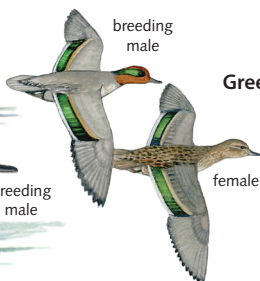
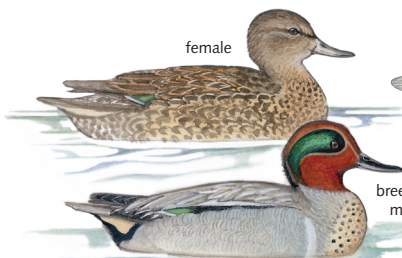
14 in (36 cm). Smallest dabbling duck. On breeding male, combination of **chestnut head**, **broad, green postocular stripe**, and **white vertical stripe** on side is distinctive. Female is distinguished from female Blue-winged Teal and Cinnamon Teal (p. 30) by **smaller body and bill**, **buffy undertail coverts**, and **white belly contrasting with mottled flanks**. Nonbreeding male and immature resemble female. In flight, both sexes show **green-and-black speculum** and **dark legs**. Very rare winter resident (Nov to March). Occurs in Pacific lowlands and foothills and extreme southwestern Caribbean, otherwise accidental in Caribbean; to 1,600 ft (500 m) but potentially higher. Forages on lakes and ponds and in mangroves, for seeds and submerged vegetation and, to a lesser extent, for small invertebrates.



**Mallard**



**Northern Pintail**



**Green-winged Teal**

**Redhead** (Porrón Cabecirrojo)*Aythya americana*

19 in (48 cm). **Round head** and **tricolored bill** are distinctive in all plumages. General plumage pattern of breeding male is similar to that of Canvasback but note red head and neck, **yellow iris**, **gray body**, and blue bill with black tip. Both nonbreeding male and female are tawny-brown overall. Very rare winter resident. Occurs in Pacific lowlands and foothills; often found in sizable groups (20+ individuals at Las Playitas Lagoon, Jan 2016; 4 individuals on Moyúa Lagoon, Feb 2017); to 1,500 ft (450 m). Might also occur in southwestern Caribbean lowlands.

**Ring-necked Duck** (Porrón Collarejo)*Aythya collaris*

17 in (43 cm). Combination of **peaked head** (at rear of crown) and **white ring behind black-tipped bill** is diagnostic. Similar to Greater Scaup and Lesser Scaup, but told apart by bold bill pattern, **solid black back**, and **white vertical stripe** on side. Female has dark brown crown, grayish face, narrow white eye ring and pale postocular stripe; nonbreeding male and immature resemble female. Uncommon winter resident (mid-Oct to March), with patchy distribution records at Playitas-Moyúa-Tecomapa lagoons, Miraflor NR, Lake Apanás, and San Juan River headwaters; otherwise accidental in Caribbean lowlands; to 3,900 ft (1,200 m). Dives for mollusks, invertebrates, and aquatic vegetation in both deep and shallow waters of lakes, ponds, and rivers.

**Canvasback** (Porrón Picudo)*Aythya valisineria*

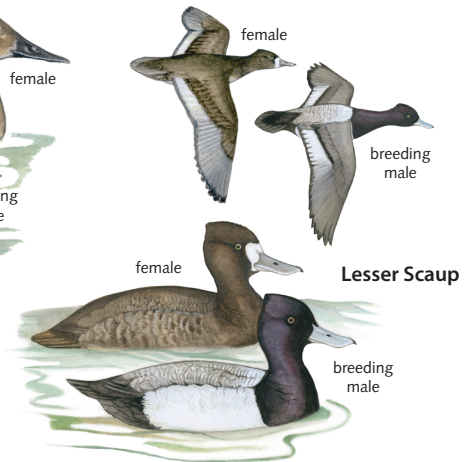
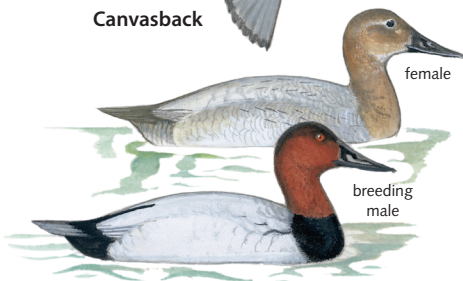
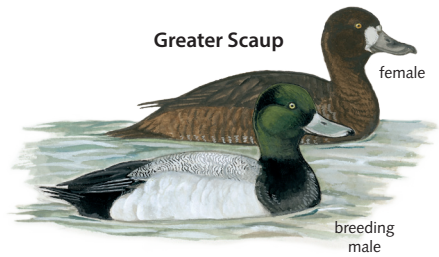
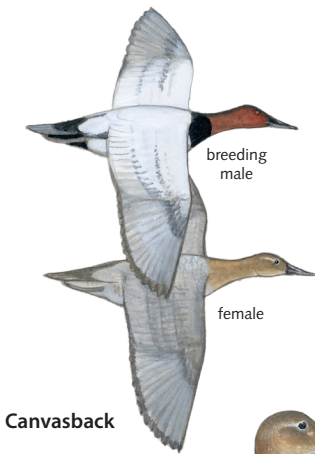
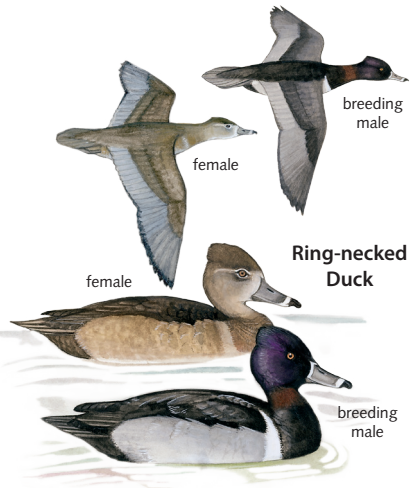
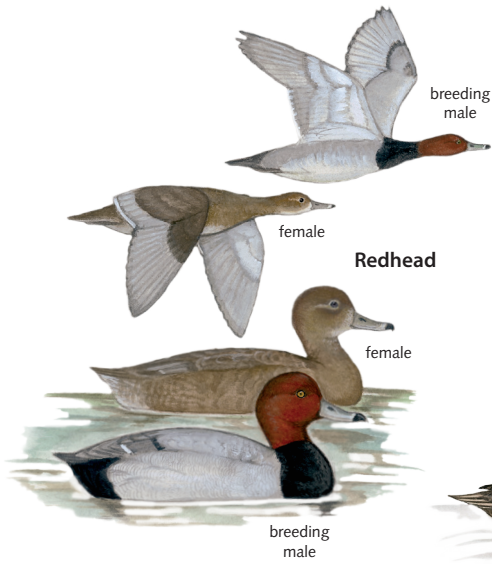
21 in (53 cm). **Long sloping profile of head and bill** separates this species from other ducks. General plumage pattern of breeding male is similar to that of Redhead but note chestnut head and neck, **red iris**, white body, and **black bill**; nonbreeding plumage is duller. Female and immature have light brown head. Accidental winter resident in Pacific lowlands; only 1 record (NE Lake Nicaragua, Jan 1957).

**Greater Scaup** (Porrón Mayor)*Aythya marila*

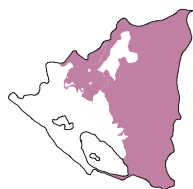
18 in (46 cm). Almost identical to Lesser Scaup but larger; note **more rounded head, which is held lower**. Also compare to Ring-necked Duck. In good light and at close range, note greenish-glossy head of breeding male. Female is dark brown overall, with bold white patch at the base of bill; nonbreeding male and immature resemble female, but male mostly lacks white at base of bill. In flight, shows **white stripe on secondaries and inner primaries** (outer primaries are pale gray). Accidental winter resident; countrywide, to 3,300 ft (1,000 m). Four country records: Papaturo River in Guatuzos WR, Feb 2001; Lake Apanás, Nov 2011; San Juan River, Jan 2013; Moyúa Lagoon, Feb 2017. Prefers saltwater habitats but can also be found in freshwater habitats.

**Lesser Scaup** (Porrón Menudo)*Aythya affinis*

16 in (42 cm). Almost identical to Greater Scaup but note **smaller size, narrower bill**, and a **taller, peaked head** (best seen when bird is relaxed). Also compare to Ring-necked Duck. In good light and at close range, note purple-glossy head of breeding male. Female is dark brown overall, with white flecks; note white patch (of variable intensity) at base of bill; nonbreeding male and immature resemble female, but male mostly lacks white at base of bill. In flight, shows **bold white stripe only in secondaries**, while primaries are pale gray. Common winter resident countrywide (mid-Oct to May); to 3,900 ft (1,200 m). Frequents a variety of freshwater habitats; uncommon in salt water.



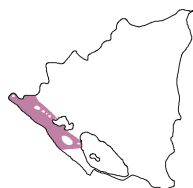
These large birds are distant relatives of turkeys (family Phasianidae). They occur only in Neotropical forests. Although most members of the family depend on primary or mature forests, chachalacas prefer relatively open woodlands and forest edges. Chachalacas and guans spend much of their time in tree canopies, silently traversing large branches to find the fruit and leaves that they feed on, but, when forced into flight, they noisily crash through branches and foliage. Great Curassow, on the other hand, consistently roams the forest floor in search of food. Very shy and secretive, cracids are more often heard than seen; they often call at dawn and dusk. Due to deforestation and extensive hunting, many populations are in decline.



**Gray-headed Chachalaca** (*Chachalaca Cabecigrís*) *Ortalis cinereiceps*  
20.5 in (52 cm). **Rufous primaries** (visible on folded wing) and distinct vocalization separate it from very similar Plain Chachalaca. Common on eastern slopes of Northern Highlands, to 4,600 ft (1,400 m). Common in Caribbean lowlands and foothills, to 1,300 ft (400 m). Favors the edges of cloud forest and humid lowland forest, tall second growth, and gallery forest and rainforest islands in the Mosquitia. In flocks of up to 10 individuals, forages for fruit and leaves at mid-canopy and canopy; easiest to see at dawn. Repeats a high-pitched *weeUT*, once or twice per second, sometimes crescendoing to a continuous and emphatic *WEEIT-WEEIT-WEEIT*...



**Plain Chachalaca** (*Chachalaca Lisa*) *Ortalis vetula*  
20 in (51 cm). **Absence of rufous in primaries** and distinct vocalization distinguish it from very similar Gray-headed Chachalaca. Uncommon in Pacific lowlands but locally common in foothills, particularly in Sierras Managua, as well as in dry intermontane valleys of Northern Highlands; to 3,300 ft (1,000 m), but wanders to 4,400 ft (1,350 m) during the dry season. Prefers dry forest and edges, secondary forest, scrub, and shaded coffee plantations. During early morning hours, flocks of 4–7 individuals forage at mid-canopy, descending to ground to pick fruit. Incessantly repeats a raucous and raspy, 3-syllable, onomatopoeic *CHA-CHA-LAC*; group members return a similar call, only higher in pitch. Also calls with a variety of burry vocalizations, sometimes making a parrot-like chattering.



**White-bellied Chachalaca** (*Chachalaca del Pacífico*) *Ortalis leucogastra*  
20 in (51 cm). **Whitish underparts** from lower breast to undertail coverts distinguish it from the other chachalacas. Uncommon in Pacific lowlands and foothills, reaching as far south as Mombacho Volcano; to 1,800 ft (500 m). Occurs in dry forest and secondary forest, mangroves, swamps, and scrub. Mostly arboreal; in pairs or small flocks, forages for fruit, flowers, and leaves at mid-canopy. Repeats its loud scratchy call; a distinct *rhót* is followed by a jumbled *urdar*; group members return a similar call, only higher in pitch. Reaches southernmost distribution in Nicaragua. Endemic to North Central American Pacific slope EBA.



**Crested Guan** (*Pava Crestada*) *Penelope purpurascens*  
34 in (87 cm). **Large size**, prominent **crest**, and **extensive bluish gray orbital skin contrasting with red iris** combine to make it distinctive. Also note **red wattle and coral-red legs; white flecking on dark brown neck and breast** distinguishes it from smaller female Highland Guan (p. 38). Hunting and deforestation have largely extirpated it from historical distribution. Uncommon in Caribbean, but locally common in Saslaya NP, Bosawas NR, and Indio Maíz BR; to 3,300 ft (1,000 m). Rare throughout Pacific (recent reports from Rivas Isthmus, Mombacho Volcano NR, and Cosigüina Peninsula), but locally common on Maderas Volcano NR; to 3,900 ft (1,200 m). Rare on eastern slopes of Northern Highlands; to 4,600 ft (1,400 m). Mainly arboreal, preferring mid-canopy; in pairs or groups, walks along branches in search of fruit. Very vocal; pipes a rapid, loud, high-pitched *whut-whut-whut*..., usually making 2 notes per second; the sequence often lasts for minutes, with waves of increased intensity and pitch. Also utters a soft, nasal, low-pitched *whúaan*.