

# FINAL REPORT

## WATERBIRDS IN VENEZUELA



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## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

### 1. Waterbird Species in Venezuela

The waterbird avifauna of Venezuela can be categorized generally as seabirds, shorebirds and other freshwater species. The **non-Passeriforme** waterbirds, which are the subject of this report, include 178 species (See the *List of Aquatic Non-Passeriform Birds of Venezuela*).

For reasons that are not quite clear to us, several species of non-Passeriformes were excluded from the requisites of this report. These are: a) the six species of Kingfishers (Alcedinidae), and b) five species of Accipitridae that occur in Venezuela and that we consider are inescapably associated with wetlands and water habitats - the Snail Kite, *Rostrhamus sociabilis*, the Slender-billed Kite, *Rostrhamus hamatus*, the Long-winged Harrier, *Circus buffoni*, the Common Black Hawk, *Buteogallus anthracinus*, and the Rufous Crab Hawk, *Buteogallus aequinoctialis*. Those raptors notwithstanding, the report requirements included the Osprey, *Pandion haliaetus*, possibly the most conspicuously water-associated of all Falconiformes. And on our own initiative, we are including the Hoatzin, *Opisthocomus hoazin*, a species completely associated with, and dependent on, slow-flowing streams of the Orinoco and Amazonas drainages, because in our perception, the Hoatzin is often forgotten in these lists, and we wish to emphasize the need for its inclusion as a bona fide Neotropical waterbird.

Therefore, in compliance with the parameters established for this report, and with our twelve additions, we are including as waterbird avifauna of Venezuela 178 species - 12.73 % of the country's total avifauna of 1,398 spp.

It is important also to remember that there are a number of Passeriformes species that should be considered waterbird avifauna. Included in this are some species of Tyrannidae, Hirundinidae, the *Donacobius*, the *Agelaius icterocephalus* and others. Their situation is almost as dependent on the quality and state of conservation of wetland habitats as it is for the non-Passeriform waterbirds, but their ecology and population dynamics are quite different. We would like to highlight at this opportunity the need for information on their present status, and recommend that the BirdLife partnership in the region perhaps engage in effecting a similar report with the Passeriform waterbirds as subject.

Among the seabirds, some breed in the Venezuelan Caribbean islands, which include the Archipelago of Los Roques (IBA VE003), and the islands of La Blanquilla (IBA VE002), Isla de Aves (IBA VE001) and Margarita (IBAs VE005 and VE006). Others breed far away from Venezuela, mainly in sub-polar regions of North and South America and in remote oceanic islands of the Atlantic. The migratory waterfowl and other migrant freshwater species breed in continental wetlands throughout North America, and the migrant shorebirds breed mainly in the far north: Siberia, Alaska, north and central Canada (Phelps & Meyer de Schauensee 1994, Canevari et al. 2001, Hilty 2003).

Following the above-mentioned parameters for this report, the 178 waterbirds of Venezuela belong to 11 orders (Anseriformes, Podicipediformes, Procellariiformes, Pelecaniformes, Ciconiiformes, Phoenicopteriformes, Falconiformes, Gruiformes, Charadriiformes, Opisthocomiformes and Coraciiformes) and 32 families (see Table 1).

Regarding residence of these species, 62 (or ± 35%) are **exclusively of migrant origin** (thus seasonal and non-breeding). These include 58 **Nearctic migrants**, or 32.6%, and 4 **Austral migrants**, or 2.2%, that are here only during their respective winter seasons - the Nearctic migrants approximately from September to May, at the most, and the Austral migrants approximately from June to late September.



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

A majority of waterbirds are **exclusively resident**, that is, 100 species, or 56% of the waterbirds, breed and are found all-year-round in the country. We include in these the very few species that have local migrations within our country, such as the American Flamingo, *Phoenicopterus ruber*, which breeds in two specific sites in the south Caribbean (Bonaire and the Estuary of Los Olivitos, NW Venezuela) and during the year, moves along the coast of Venezuela in a more or less fixed pattern, using a series of coastal wetlands and following the pattern of seasonal water levels and availability of food resources in each wetland.

One last group has **both resident and migrant** status, that is 16 species, or  $\pm$  9%, of the aquatic birds in Venezuela, including 11 species that are both resident and Nearctic migrants, 2 species that are both resident and Austral migrants, and 2 species that are both resident and Intertropical migrants. In most of these cases, the species has both a bona fide resident population and a bona fide migrant population, that joins (and increases) the local one during the winter months. In a small number of cases, the species, mostly seabirds, have both individuals that breed in Venezuela and individuals that breed in other Caribbean or Atlantic islands, and wander widely, in movements that cannot be called migrations but may have a seasonal pattern (i.e. Audubon's Shearwater, *Puffinus lherminieri*). One last case in this category of mixed status are the Intertropical migrants, such species as the Azure Gallinule, *Porphyrio flavirostris*, that show seasonal movements during the breeding period that may carry them across the borders of the country, though not entirely out of the Tropical region (Table 1).



**Waterbird Conservation for the Americas**  
La Conservación de las Aves Acuáticas para las Américas

**Table 1.** Waterbird families in Venezuela

<b>Family</b>	<b>Total species by Family</b>	<b>Migratory Population</b>	<b>Resident Population</b>	<b>Resident &amp; Migratory Pop.</b>
Anhimidae	2	-----	2	-----
Anatidae	19	7	11	1?
Podicipedidae	2	-----	2	-----
Procellariidae	3	2	1	-----
Hydrobatidae	2	2	-----	-----
Phaethontidae	1	-----	1	-----
Pelecanidae	1	-----	1	-----
Sulidae	3	-----	3	-----
Phalacrocoracidae	1	-----	1	-----
Anhingidae	1	-----	1	-----
Fregatidae	1	-----	1	-----
Ardeidae	22	1	16	5?
Threskionithidae	8	-----	8	-----
Ciconiidae	3	-----	3	-----
Phoenicopteridae	1	-----	1	-----
Pandionidae	1	1	-----	-----
Accipitridae	5	-----	5	-----
Aramidae	1	-----	1	-----
Rallidae	21	2	18	1
Heliornithidae	1	-----	1	-----
Erypygidae	1	-----	1	-----
Charadriidae	9	5	3	1
Haematopodidae	1	-----	1	-----
Recurvirostridae	2	1	1	-----
Burhinidae	1	-----	1	-----
Scolopacidae	31	27	3	1
Jacaniidae	1	-----	1	-----
Stercorariidae	5	5	-----	-----
Laridae	20	8	5	7
Rhynchopidae	1	-----	1	-----
Opisthocomidae	1	-----	1	-----
Alcedinidae	6	1	5	-----
<b>TOTAL</b>	<b>178</b>	<b>62</b>	<b>100</b>	<b>16</b>
<b>PERCENTAGE</b>		<b>35%</b>	<b>56%</b>	<b>9%</b>



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

### 2. Wetland and Marine Habitats in Venezuela

In general, waterbirds have at their disposal 16.4 % of Venezuela (Lentino & Bruni 1994) – this is the percentage of our 916,445 Km<sup>2</sup> of territory that are considered natural wetlands. Regarding habitat for marine birds provided by the Venezuelan islands, Scott & Carbonell 1986 put the total territory of our 314 oceanic islands at 2,438.9 Km<sup>2</sup>, while the MARN 1979 Atlas gives a total of ca. 1,800 Km<sup>2</sup> of land surface for the Caribbean islands, with a coastal line that extends 317 Km.

Regarding man-made wetlands, there are approx. 2,250 Km<sup>2</sup> of dams and reservoirs, including the Guri, which has a surface area of ca. 1,735 Km<sup>2</sup>. However, only some of these provide good habitat for waterbirds, and the Guri is not one of them. Some of the ones that do provide good habitat are Jatira-Tacarigua<sup>1</sup>, in the state of Falcon, the Represa del Guárico<sup>2</sup> in the state of the same name, the reservoir of El Isiro<sup>3</sup>, also in the state of Falcon, and some other small ones.

The watersheds, lakes, inundated savannas, marshes, coastal lagoons, mangroves, and various other types of wetland areas used by aquatic birds in Venezuela can be divided into 10 regions. These include, from west to east and north to south:

- **The Caribbean coast**, that extends 2,718 Km from the Lagoon of Cocinetas at the border with Colombia, to the Promontory of Paria on the tip of the Paria peninsula, facing Trinidad a mere 10Km away across the Boca de Drago or Dragon Mouth straight. The Caribbean coast consists, for the most part, of rocky, pebbly or sandy beaches, interrupted in several places by salt plains, coastal lagoons, brackish marshes or mangroves. Along the Caribbean coast from west to east, the IBAs with wetland habitat of importance to waterbirds include: the Estuary of Los Olivitos (VE014), the Lagoon of Boca de Caño Wildlife Sanctuary (VE013), the complex of Sauca & Boca de Hueque (VE010), the Tucurere Marshes Wildlife Sanctuary (VE009), Cuare Wildlife Sanctuary (VE008), Morrocoy N.P. (VE007), the Lagoon of Tacarigua N.P. (VE0026), the Unare-Píritu complex (VE025), the Mochima N.P. (VE024), and Chacopata (VE023). There are a number of other coastal wetlands, but those represent the main sites for waterbirds. The coastal areas of Venezuela have two well-marked seasons: a severe dry season from ± Dec. to April created by a southward shift in direction of the prevailing trade winds, and an irregular rainy season from ± May to Nov.
- **The Lake of Valencia basin**, an enclosed basin nestled in a broad, fertile valley between the northern, higher branch of the Coastal Cordillera, called Serranía del Litoral and the southern branch, called Serranía del Interior. Lake Valencia (ca. 364 Km<sup>2</sup>) used to be an important habitat for waterbirds, but the unchecked increase in pollution from raw residential and industrial sewage and agricultural runoffs ended up by almost killing the lake. Some very small numbers of water avifauna can still be found, most notably Osprey, but never in the numbers and variety that existed 60 years ago.
- **The Atlantic coast**, that extends some 570 Km from the Paria Promontory to the border with Guyana on Isla Corocoro, at the mouth of the Barima River. The Atlantic coast borders the extensive complex of marshes and mangroves of the delta of the San Juan

<sup>1</sup> Good populations of *Jacana jacana*, *Himantopus mexicanus*, numerous herons, ducks, etc., including many of the migrant waterbird species.

<sup>2</sup> A well-known wintering area for *Pandion haliaetus*.

<sup>3</sup> Partially silted-over on its eastern side, thus providing an extension of shallow water where even flocks of a few dozens Flamingoes have been recorded.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

River (VE020), that spills unto the Gulf of Paria, and then further south, continuing in an almost unbroken line of coastal mangroves, includes the ca. 370 Km long coast line of the Delta of the Orinoco river. The Orinoco Delta is a ca. 36,500 Km<sup>2</sup> complex of channels and low-lying, marshy islands that fans out from the Caño Manamo, the northernmost channel, to the Rio Grande, the southernmost channel and one of the widest. The Delta is the seat of the most extensive mangrove forest in the country. Within this vast watery realm, two areas are considered IBAs: the Capure-Pedernales area (VE044) and the Mariusa N.P. (VE045). Another IBA of importance to waterbirds, the Wildlife Reserve of Gran Morichal<sup>4</sup>, is closely connected to the Delta. The central artery of Gran Morichal is the Morichal Largo River, with a very abundant waterbird population (specially herons and ducks). The Atlantic coast is made up, for the most part, of muddy or silty shores. In many areas, the ebb tide leaves uncovered long, broad swaths of mud flats that are excellent feeding grounds for shorebirds, ibises and herons. The *caños* or channels of the Delta harbour high numbers of Scarlet Ibises, herons, Cormorants, Anhingas, Kingfishers and Snail Kites. The Delta is a favourite wintering destination for Ospreys, that can usually be found in good numbers from October to March.

- **The Lake Maracaibo basin.** The Lake has a surface of ca. 13,280 Km<sup>2</sup> and some 728 Km of coast. Since it is one of the main oil-producing areas in the country and many drilling platforms stand inside the lake, oil pollution is a widespread and pervasive factor. Another problem that has been very severe in the last three years (2002-2005) is the invasion of vast extensions of the Lake by algae *Lemna* sp. The environmental impact of this algae invasion is currently under study by the Instituto de Conservación del Lago de Maracaibo (ICLAN), but the mere facts that the algae invasion took place, and its extension, suggest that the water in the lake has serious problems. Waterbirds are not present in any great numbers, but during the boreal winter months Osprey abound in the southern quarter of the lake. In the southwestern corner, three rivers flowing from the East Andes of Colombia, the Zulia, the Socuavo and the Catatumbo, form an extensive complex of marshes called Juan Manuel de Aguas Blancas y Aguas Negras, that are now protected by the Ciénagas de Juan Manuel N.P. (VE015) and a Wildlife Reserve with the same name (VE016). This area is the main locality of the Northern Screamer, *Chauna chavaria*, but it also affords habitat for ducks, herons and other waterbirds. To the north of Lake Maracaibo, and connected to it by the Lake's entrance channel and the Bay of El Tablazo, lies the Gulf of Venezuela, a vast expanse of sea bordered by the peninsulas of La Guajira on the west and Paraguaná on the east. This area is well-known for its fisheries, and well known as well as an area of high seabird presence.
- **The Orinoco basin,** encompassing a drainage area of 570.000 Km<sup>2</sup>. The basin can be divide into two distinct regions. The northern and western side encompasses all the rivers that drain into the Orinoco on its right margin, that emerge from the Eastern Andes of Colombia, the Venezuelan Andes and the southern slope of the Coastal Cordillera. These include the Inírida, Guaviare, Vichada, and Meta, which all come down from the Eastern Andes of Colombia; the Cinaruco and Capanaparo, that drain the low Llanos of Apure; the Arauca and Apure, that come down from the Venezuelan Andes. The Apure gathers the waters of many rivers that flow from the Andes. During the rainy season (± May to October), when the Orinoco waters rise, the high flow of the Orinoco forms a barrier for the water coming down on the Apure and other smaller rivers of the upper

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<sup>4</sup> "Morichal" is the name given in Venezuela to boggy stands of *Mauritia flexuosa* palms, that are a habitat with very particular characteristics and a especial fauna associated to them, including several species of birds.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

Llanos, and the waters begin to back up, creating a vast flood that covers several thousands of square kilometres. The flooded area varies in size and shape every year, depending on where and how much it has rained. This yearly floods mark the seasons for all the waterbirds of the Venezuelan Llanos – their lives, breeding cycles and patterns of seasonal movements are all tied to the floods. From its huge drainage, the Orinoco discharges into the Delta an average of  $150 \times 10^6$  tonnes of suspended sediments per year. It is quite interesting to note that of this total, 85 to 90% is contributed by the 3 largest tributaries that originate in the Andes – the Meta (53%), Guaviare ( $\pm 18\%$ ) and Apure ( $\pm 15\%$ ). The remaining 10 or 15% is contributed by the tributaries that drain the Guayana Shield and the eastern Llanos. On the other hand, the contributions of water discharge into the main flow of the river are almost equal from both sides. The river divides Venezuela into two clearly defined segments, with significant differences in the compositions and characteristics of the bird communities. It is quite common to find that a species that occur in the north to a certain altitude, only reaches to half those heights in the south. To waterbirds, one important factor is the presence of black-water rivers, which seem to be, in general, not very appropriate habitat for them. The southern and eastern side of the Orinoco basin encompasses all the rivers that drain into the Orinoco on its left margin, that emerge from the tepuis, cerros and sierras of the Guiana Shield. Main courses on this side include the Ventuari, Parguaza, Suapure, Guaniamo, Cuchivero, Caura, Aro, and Caroní. Of these, the largest are the Caura and the Caroní. The Caura, a huge river, is considered one of the last remaining pristine watersheds in the world. One important fact that must be noted involves the rivers that drain from the Cordillera de la Costa (coastal range) mountains in Venezuela – in the last 60 years, ALL these rivers have lost flow, some to the point of virtually disappearing. This is probably a direct consequence of the fact that the greatest population densities in Venezuela are settled on or around the northern mountains of the country, and that these regions are the ones that have suffered the most extensive deforestation.

- **The basin of the Cuyuni River**, which is independent of the Orinoco in spite of their close proximity. The entire Venezuelan segment of the Cuyuní watershed lies within the state of Bolívar, contained between the Serranía de Imataca in the north and the Sierra de Lema in the south, and the river flows eastwards, through the border with Guyana, to join the Esequibo and the Mazaruni rivers, the three forming a last, wide joint flow for some 75 kilometers to drain out into the Atlantic. Although we know of no environmental impact study for the basin, we are convinced that the Cuyuní must suffer severe mining-runoff contamination, for there are gold and diamond mines throughout the entire area of Imataca.
- **The wetlands of the paramos and higher slopes of the Andes** - a few small mountain lakes, marshes and mires, that harbour some waterbirds. The majority are small, self-contained ecosystems. The highest-lying tarns are remnants of past glacial times, and their waters are often quite acid. But some small marshes, mires and lakes, most notably the Mucubají Lagoon, make good habitat for waterbirds. The main vegetation of the mires and marshes are *Cortadera*, *Typha*, sedges, grasses and some shrubs. The species to be found in them include some ducks, especially *Anas flavirostris* and occasionally some of the migrant ducks, the grebes, and some Rallids, Scolopacids and Charadriids, usually in small to very small numbers, and the migrant species usually in transit.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

- **The Caribbean off-shore islands**, which include, from west to east, the Los Monjes group, the Archipelago of Las Aves, the Archipelago of Los Roques, La Orchila, La Tortuga, La Blanquilla, Los Hermanos group, Isla de Aves, Isla Sola, Los Frailes group, and Los Testigos group. The largest Caribbean island is Margarita, which together with the two smaller islands of Coche and Cubagua, make up the state of Nueva Esparta. All the others are joined politically into a single administrative entity called the “Dependencias Federales”. Most of the islands have sparse vegetation cover, mostly xerophytic, with extensions of *Portulaca*, *Opuntia* cactuses, crab grass (*Paspalum* sp.), or at the most, low scrubby trees (*Crescentia*, *Cesalpinia*, *Coccoloba* and others). Some have patches of *Rhizophora* and *Avicennia* mangroves, and most have some extension of storm terraces. Several of the islands have protected status - Isla de Aves is a Wildlife Refuge since 1972, and the Archipelago of Los Roques a National Park since 1972 and a Ramsar site since 1996. On the island of Margarita, the two most important wetlands became protected areas in 1974 - Las Marites Lagoon (VE005) as a Natural Monument and La Restinga Lagoon (VE006) as a National Park. Isla de Aves (IBA VE001), a tiny key located some ca. 540 km north of Margarita, is an important nesting site for seabirds, where 34 species have been recorded. At certain times of the year, up to 300,000 individuals of *Anous stolidus* and *Sterna fuscata* may be found there, but usually ca. 20.000 birds are present regularly. Two recent field studies on the Archipelago of Los Roques (Lentino, Esclasans, Bosque & Luy in press; Esclasans & Bosque 2005) have concluded that the protected status of the islands has contributed significantly to their preservation as habitat for marine birds, as demonstrated by the fact that all the largest breeding colonies of seabirds in Venezuela are located in these protected islands.

### 3. Important Breeding Places

Information on waterbird breeding colonies in Venezuela needs updating, especially regarding surveys of the “garceros”, the heron and ibis rookeries of the Llanos. The most recent censuses of herons and ibises were those of Ogden & Thomas 1985, Ramo *et al.* 1983, Ramo & Busto 1984, Thomas 1987. The largest populations of Scarlet Ibis *Eudocimus ruber* in the world are to be found in the low Llanos of Venezuela. Ramo & Busto recorded 22 “garceros” (rookeries) with ca. 70.000 individuals of this species, and the estimate is that 90% of the populations of the species resides in the Venezuelan Llanos region. The rookeries usually host *Mycteria americana*, *Jabirú mycteria*, *Ciconia maguari*, *Eudocimus ruber*, *Casmerodius albus*, *Anhinga anhinga*, *Bubulcus ibis*, *Ardea cocoi* and *Phalacrocorax brasilianus*. Some 98 of these rookeries have been recorded, some as large as 32.000 birds (Paolillo *et al.* 2001).

Some important breeding sites for waterbirds are located on the Caribbean islands, where seabirds have breeding colonies. Los Monjes, for example, harbour a breeding colony of ca. 100 *Phaethon aethereus*. Isla de Aves and Los Roques are the most important island in terms of seabird breeding colonies. Los Roques is a regular breeding site for 19 species of waterbirds. Some of these species are: *Phaethon aethereus*, that nests on escarpments of the Gran Roque and *Pelecanus occidentalis*, that nests on the mangroves. *Sula dactylatra* and *Sula sula* nest on the ground, while *Sula leucogaster* nests on top of the mangroves and *Nycticorax nycticorax* and *Nyctanassa violacea* also nest on top of the mangroves. *Larus atricilla* builds a small ring of twigs directly on the ground, *Sterna hirundo* and *Sterna antillarum* nest on the pebbly sand, and their speckled eggs and spotted chicks blend with this background and become invisible. *Sterna anaethetus* nests amid the jagged pieces of dead coral on the storm terraces. *Anous stolidus* and *Anous minutus* nests inside the mangroves, where the chicks are under the shade of the leaves.



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

For *Fregata magnificens*, the largest breeding colonies are found on Los Hermanos and Los Testigos.

Breeding colonies of Pelicans are approximately 25, including one on the southwest of Lake Maracaibo, two in Falcón, three in Miranda, eleven in north and northwest Sucre, two in southeast Sucre (in the Río San Juan area), two in the northern Delta, three on Los Roques, one in Margarita. The numbers of nests in the largest breeding colonies are: Chacopata > 400, Carenero > 400, Delta > 500, Los Roques > 400. Recent population censuses have produced the following Pelican numbers: 582 in Las Marites Lagoon, Margarita Is.; 800 on the Island of Cubagua; 60 on Las Aves island group, 655 on Archipelago of Los Roques.

#### 4. Important stopover points and wintering places

Many thousands of waterbirds pass through Venezuela during south or north migration using river mouths, beaches, swamps, salt ponds and lakes as stopovers. Most of the waterbirds travel the Caribbean coast for the southward migration, with fairly large numbers stopping at different wetlands along the coast of Venezuela, and smaller numbers stopping in inland wetlands throughout the country. During the northward migration, migrants shorebirds tend to use the Pacific coast, so we get fewer birds and much smaller flocks during the spring months. However, Thomas (198X) found that in the Llanos, although the numbers are not huge, the migration is quite regular, and site fidelity in stopovers is quite high - she banded less than 80 birds one year and the next year obtained a recapture (*Calidris* sp.). The species she found migrating regularly through the Llanos were: *Tringa melanoleuca*, *T. flavipes*, *T. solitaria*, *Actitis macularia*, *Calidris pusilla*, *C. fuscicollis*, *C. melanotos*, *C. himantopus* and *Tryngites subruficollis*. The immatures of some migrant species (some shorebirds, gulls, terns and others) stay year-round in Venezuela until they reach reproductive maturity. Most notable among these are the Ospreys, which at times have been thought to “breed” in Venezuela, because immature birds often stay year-round, and even engage in building nests, using them as roosts. One area that has been recently found to be quite important for shorebirds is the northern part of the Delta of the Orinoco. Recent surveys by M. Lentino and others have come out with much larger numbers than previously thought. The entire Delta is in urgent need of being surveyed, because there are many indications that an extensive and in-depth survey of the entire area will produce astonishing numbers.

#### 5. Species with Restricted Distributions

Of the seven EBAs<sup>5</sup> that cover Venezuela, the only ones that contain species with restricted distributions relevant to the objectives of this report are EBA 033, the Central Coastal Cordillera, where the Rusty-flanked Crake *Laterallus levraudi* is found, and EBA 035, the Caribbean region of Colombia and Venezuela, where the Plain-flanked Rail *Rallus wetmorei* occurs, but only in a few mangrove stands in the central segment of the Caribbean coast of Venezuela.

The coastline where *Rallus wetmorei* occurs is less than 150 Km in length. It extends more or less from the mouth of the Tocuyo River in Falcón to the Bay of Turiamo in extreme western Aragua. However, recent tape recorder surveys by D. Ascanio (pers. com.) have shown the Rail to be much more common than was previously supposed, and it is interesting to note that the bird seems to thrive in patches of mangrove that could be termed of “inferior quality” (younger trees

<sup>5</sup> Endemic Bird Areas of Venezuela: EBAs 032, 033, 034, 035, 038, 064, and 065.



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

and with a fair amount of contamination). The reasons why the species does not occur in other, very similar stands of mangrove further up and down the coast, was always unclear, but these findings by Ascanio seem to have made the matter even more obscure – the bird is apparently able to live without much trouble in mangrove that has been and continues to be fairly affected by human intervention. On the other hand, M. Lentino warns that no species-specific surveys, which must be done with tape recorder, have been carried out outside of the area that is presently considered to be the range. It is quite possible that the range extends a number of kilometers more, covering additional patches of mangrove along the coast of Falcon. But the species is extremely elusive unless one happens to have a recording of its call.

With *Laterallu levraudi*, the situation is not too different – it is extremely elusive, and even though it seems to live quite happily near human settlements, no one ever sees it, for it does not ever flush and very, very seldom comes out from the tall grass in flooded fields that is its habitat. No one has ever carried out a species-specific survey. The present distribution (as shown in Hilty 2003, for example) corresponds to existing specimens, with a more recent range extension towards the west and southwest corresponding mostly to sightings and voice records. However, this new range extension may be biased, since the records come from areas frequented by tourists and birdwatchers. It is quite possible that the real range is larger than what is presently known, possibly extending further east and south of its present borders.

Another species that should be mentioned here is the Northern Screamer *Chauna chavaria*, although it does not exactly fit into the definition of restricted distribution. *Chauna chavaria* is included in the list of Near Threatened Species in TBW (2000). Its range is severely fragmented into 3 segments: 2 in Colombia and one in Venezuela. Since the species is completely sedentary we believe it is quite safe to assume that there is no genetic flow between the populations of Venezuela and Colombian. Taking that into consideration, our population, whose range extends in a crescent around the south and southwest of Lake Maracaibo, can then be considered of restricted distribution. Regarding population size, several publications mention an estimate of ca. 2000 individuals for the Venezuelan population, but we were unable to find the source of this figure. Contrary to what is mentioned in Hilty 2003, who gives as source Collar et al. 1992 (Threatened Bird of the Americas), M. Lentino believes that the *Chauna chavaria* population in Venezuela is expanding, due to a habitat expansion in recent years, when the entire Planicie de Maracaibo, the lowland area that extends south of Maracaibo to the edge of the Juan Manuel marshes, has been turned into an artificial wetland (rice paddies and other crops). Hopefully, the matter will be solved by LUZ professor Daria Pirela (see below) who is carrying out surveys in the area that include an estimate of population size of this. According to the *Libro Rojo de la Aves de Colombia* (Rengifo et al. 2002) the populations in Colombia have been declining in recent years.

### 6. Threats to waterbirds and their habitats

Most wetlands in Venezuela are under some degree of threat. Principal threats are habitat destruction, human encroachment especially from recreational uses, pollution of industrial and mining origin (including mercury contamination from gold-mining operations taking place mainly in Bolivar and Amazonas), pollution from agricultural runoffs (both fertilizers and pesticides), pollution from untreated sewage, sedimentation and drainage. Mangroves in several areas (most notably in the Delta) are threatened by deforestation and timber extraction.

The important wetlands of Ciénagas de Juan Manuel, on the southwest corner of Lake Maracaibo (IBAs 15 and 16), have been affected a few times by oil spills when guerrillas have blown up oil



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

pipes located in the upper Catatumbo region, in Colombian territory. This is the habitat of the most significant population of *Chauna chavaria*.

The Flamingos nesting in the estuary of Los Olivitos (IBA 14) are under frequent pressure by local people who live in the neighboring villages, who raid the nests to take both chicks and eggs. It is quite a paradox that the best protection the Flamingoes presently have in Los Olivitos is the industrial salt plant – the salt plant's ponds form a long L-shape that surrounds the estuary almost completely around its south-eastern corner, and the fences around the perimeter of the plant make access to the Flamingo nests much more difficult.

Aquiculture farms have become a threat to three species. In the western Llanos, Tilapia farms that were established in the eighties began to attract Ospreys. The stories that have been reaching researchers at the Phelps Ornithological Collection include one where the owner of one of the farms had managed to gather a collection of more than a dozen leg bands from unfortunate fishing eagles. The matter urgently requires investigation. In Zulia and Anzoátegui, shrimp farms are having problems with both Cormorants and Anhingas. One of the largest shrimp farms funded a project by Miguel Lentino, of the Colección Phelps (COP), to find out movement and population patterns of the birds, in order to look for solutions that would not harmful to the species. Among the resulting recommendations was a program of prevention to stop the first bird to appear, so that it would not take the information on this food source to the rest of the colony. This was paired with a program of reducing the breeding success of source colonies by taking away eggs. Results of this measure are being evaluated.

On the islands, breeding colonies are under threat from nest raiders that aim to take eggs and chicks. This is a practice that has been used by fishermen for generation. Nonetheless, the establishment of protected areas on Los Roques and other islands has served to effectively reduce the practice and its detrimental effects.

Subsistence hunting affects a number of waterbird species, especially ducks, rails and snipes. In a country with the severe poverty levels that occur in rural areas, many people resort to hunting to supplement family diets. Poaching can have very pervasive effects. In Hato El Frío (IBA 53) there used to exist a huge rookery of Woodstorks, with estimations of over 6,000 breeding pairs. It extended for several kilometers along a stream that ran parallel to the main road. Poaching and continuous disturbance from nest raiding for eggs and chicks ended up by completely destroying the rookery.

However, human occupation of natural areas continues to be the most pervasive threat that waterbirds face in Venezuela.

### **7. Aquatic bird field studies and conservation programs**

On the Los Roques Archipelago, the definition of areas of "Integral Protection" as part of the Park's Management and Area Use Plan, together with efforts on the part of the Park authorities, have led to the safeguarding and improvement of the general conservation situation of the Park and very especially of the seabird breeding colonies therein. This was recently evaluated by Bosque & Esclasans (2005), who concluded that the creation of the now 33-year-old Park (IBA VE003) has been the salvation of the colonies, even though the outermost keys, and those that are not "Integral Protection" areas are still suffering from nest robberies, affecting both eggs and chicks, on the part of local fishermen, who have been using this as a source of food for several generations.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

An added bonus in the conservation of that important IBA has been the prolonged support from the Spanish Cooperation Agency, which produced, among other benefits, a magnificent *Guide to the Los Roque National Park* (Guía del Parque Nacional Archipiélago de los Roques, J. Zamarro, ed., 2002. Chapter on Birds of the Park by M. Lentino & C. Rodner).

For the coastal lagoons of Unare and Píritu, the BirdLife Venezuelan partner, SCAV, has been advancing a program focused on the local fishermen communities, and aimed at a) creating an awareness of the value of the local avifauna, and b) developing human resources for birding tourism. The first tentative steps led to a formal agreement with the State of Anzoátegui government, through the Tourism Corporation of the State of Anzoátegui (Corporación de Turismo del Estado Anzoátegui). The agreement involves the organization of the Migrant Shorebirds Festival (Festival de los Playeros Migratorios) every year, which includes a number of education and training workshops for local children and for the fishermen, to train them as local tourist guides

Another initiative for the same area was the publication, in 2004, of the *Bird Guide to the Unare & Píritu System of Lagoons* (Guía de Aves del Sistema Lagunar de Unare y Píritu) an initiative by long-time SCAV member Evelyn Villareal, with contributions by SCAV members Miguel Lentino and Mary Lou Goodwin. The publication was supported by the Office of the Governor of the State of Anzoátegui, and it has been instrumental in the development of local interest in birds, as well as in birding tourism and bird conservation. The guide is fully illustrated and is directed to children, but has been equally successful with adults.

In Zulia (as reported by Professor C. Casler), a multidisciplinary team of ca. 20 University of Zulia (LUZ) professors and students have just finished a two-year study on the biodiversity of the Ciénaga de Los Olivitos, funded by FONACIT (National Fund for Science & Technology). The general coordinator was Prof. Enrique Weir, and for the avian aspects, the person in charge was Clark Casler. The general report is at present time in final revisions. Several publications for the Bulletin of the Center for Biological Research are expected to issue from the study. The study includes 2 censuses (2004 & 2005) of aquatic birds in general. Some of the results include population estimates for Cormorants (ca. 40,000 individuals), Fregatta (ca. 500 individuals), Pelicans, Osprey, Phoenicopter (ca. 17,000), Phoenicopter chicks (ca. 5,000 in both 2004 & 2005). Nests have been found of tricolor Frigate, Great Egret, and Egretta thula. There is strong indication that some of the individuals of Reddish Egret *Egretta rufescens* are actually resident in the estuary. One of the important conclusion of the study is that in general, the Wildlife Sanctuary has been beneficial for the wildlife of the Los Olivitos Estuary.

Also in Zulia, Professor Daria Pirela has been carrying out censuses of waterbirds along the western coast of Lake Maracaibo. In the plans for the near future is a study and census of *Chauna chavaria* in the southern part of the lake. Together with Clark Casler, Professor Pirela has also been monitoring seasonal abundance of Parasitic and Pomarine Jaegers, *Stercorarius parasiticus* and *S. pomarinus*, on the southwestern coast of the Gulf of Venezuela (Casler & Pirela 2005). They established a 41 km transect at the Caimare Chico beach, and observed 202 jaegers (73% Parasitic, 27% Pomarine) during 30 censuses that took place from 1997 to 2000, plus 37 other casual observations that took place between 1876 and 1987. Parasitic Jaegers occurred from January to September and Pomarines from February to July, but 83% of the birds were observed in April, May and June. The largest number of jaegers seen on one day was 40. Of 88 individuals that were classified according to age and breeding plumage, 1% were breeding adults, 16% were non-breeding adults, 46% were subadults, and 37% were immatures. Both species visit Venezuelan waters mostly during spring passage, when returning north to the



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

breeding grounds. Younger, non-breeding birds seem to stay later than adults on the wintering grounds, but the evidence shows that few stay throughout the year in Venezuela.

Another researcher working in Zulia is Biologist Frank Espinosa, from the Museum of the Rancho Grande Biol. Research Station (Museo de la Estación Biológica de Rancho Grande, MEBRG), who for more than 5 years has been monitoring the breeding colony of Flamingos in the Ciénaga de los Olivitos (VE014). During the nesting season, he makes a visit every two weeks. The most recent count gave an approximate total of 4,500 nests/breeding pairs. Apparently the numbers are holding more or less stable in the 5 years that Espinosa has been monitoring the colony. The importance of Los Olivitos as a reproductive site has been known since 1984, the years that the SCAV hired Biologist Miguel Lentino to carry out a study of foraging sites used by Flamingoes along the entire Caribbean coast of Venezuela. That same year, aerial censuses were started to complement the study. These aerial censuses and the censuses by land (carried out for several years in the 80's) were carried out in coordination with Bart de Boer, of the CARMABI Institute in Curaçao, and Frater Candidus van der Linden, of the STINAPA Institute that took care of the Flamingo breeding colony in Bonaire. It was thanks to this work that we finally had an estimate of the size of this population of Flamingos from the southern Caribbean region. At the time the population was estimated at between 18,000 y 19,000 individuals. More recent counts indicate that the population today is slightly larger than 20,000 individuals.

In Falcon, Professor Sandra Giner of the Instituto de Zoología Tropical of the Universidad Central de Venezuela, has been carrying out census and a study on the seasonality of aquatic avifauna associated to the salt marshes of the Cuare Wildlife Refuge. This research constitutes the project for her PhD dissertation. Her tutor is Dr. Jorge Pérez-Eman of the same university.

In the Tacarigua N.P. (Miranda state) and the wetlands of Las Marites and La Restinga on Margarita Island, Dr. Astolfo Mata of the Centro de Ecología of the Instituto Venezolano de Investigaciones Científicas, is carrying out censuses of migratory shorebirds, as well as a study of feeding ecology and ecophysiology of these species. His undergraduate thesis was a comparative study of eleven species of herons on the Játira Reservoir and the Cuare Wildlife Refuge. Now, he will carry out censuses in Tacarigua, the Unare lagoon (Anzoátegui state) and La Restinga, to evaluate movement of shorebirds between the lagoons.

At present time Dr. Mata is also tutoring undergraduate student Hugo Rodríguez, whose thesis will focus on the feeding ecology of migrant shorebirds in La Restinga N.P. (Margarita Island).

On the island of Margarita, Dr. Virginia Sanz is tutoring undergraduate student Laura Oviol with a project on waterbirds. They will be carrying out 4 censuses in one year in 18 different localities around the island, including a number of salt marshes and mangroves. Dr. Jorge Pérez-Eman is co-tutor for this thesis.

Dr. Pérez-Eman began some three years ago to carry out a program of studies on the ecology of Ibises in the Llanos of Apure, including seasonal patterns and use of habitat. The first thesis to come out of the program was that of undergraduate student Karina Liss (2001), who studied some aspects of the ecology of the *Theristicus caudatus* and did censuses of the species in Hato El Cedral (IBA 54). The following thesis was that of Dorixa Monsalve (2002), who studied the feeding ecology and reproductive biology of the *Cercibis oxycerca*, and did censuses of the species also in Hato El Cedral. Now, Dr. Pérez-Eman is tutoring a graduate-degree thesis on the reproductive ecology of *Rynchops nigra*.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

Four years ago, in the Llanos of Barinas and Apure, Alexis Araujo, who is now a professor at the Universidad Experimental de Los Llanos in Guanare (Barinas state), carried out censuses of migrant shorebirds as part of his undergraduate thesis project.

In the state of Mérida, a team of students and professors of the Universidad de Los Andes, directed by Professor Carlos Rengifo, have been carrying out studies and census of Torrent Ducks in two rivers of the state. They completed a study of the diet of the ducks, in parallel with a study by ichthyologists from the same University on the diet of the introduced trouts that now populate the streams. Preliminary results show a great deal of dietary overlap between the two species, that indicates a competition for food resources. This may explain, in part, the descents in population that the Torrent Ducks have suffered in recent years. Evaluations of duck pairs' territories have indicated smaller territories than those obtained by other researchers. Professor Rengifo plans to continue the studies on the species.

With the guidance and support of Wetlands International, a group of researchers from different universities and institutions around the country have agreed to develop a program of yearly census of migrant shorebirds. The national Coordinator is Margarita Martinez, of the Phelps Ornithological Collection. The plans are already underway for the first census to take place this year in July. The WI program includes two censuses per year, one in February and one in July. Although the program has been functioning for a few years in other countries, Venezuela had not participated, but now that a team of interested volunteers has been put together, the group will be taking on the challenge.

#### 8. Researcher References

MIGUEL LENTINO, Colección Ornitológica Phelps (COP).

Systematics, taxonomy, distribution, recent surveys in the Delta of the Orinoco, the eastern foothills of the Mérida Andes, Sierra de Perijá mountains.

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**Waterbird Conservation for the Americas**  
La Conservación de las Aves Acuáticas para las Américas

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### **9. Analysis of the Table *Status of Aquatic Non-Passeriform Birds in Venezuela***

To assess the present situation of aquatic Non-Passeriform species in Venezuela, we devised the table *Status of Aquatic Non-Passeriform Birds in Venezuela*. The table contains a complete list of the species that occur as residents or regular migrants in Venezuela, and also the species that are recorded occasionally as vagrants or have only one or a few records as accidentals. It is organized following the taxonomic order in the AOU's South American Committee Checklist (Remsen/ SACC <http://www.aou.org/checklistsouth.php3>). Species names also follow the SACC, and the grammar and spelling corrections made by Davis & Gosselin 2002.

For each of these species, the following information was compiled, in nine columns:



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

- **Status** – indicates the resident, northern or austral migrant, vagrant or accidental status for the species, as well as its relative abundance (Common, frequent, uncommon or rare).
- **IBA code numbers** – indicates the Venezuelan IBAs where the species is present, by IBA code number.
- **Notes** – small items of interest in a variety of topics .
- **Population Trend** – indicates if the population of the species appears to be stable, or decreasing slowly or rapidly.
- **Recent Census** (in last 15 years) – indicates if there have been even partial censuses of the species in this period.
- **Recent Field Studies** - indicates if there have been any field studies in the last 15 years.
- **Threats** – For the majority of the species, these are *percieved* threats. Threats have been studied only in a few species.
- **Urgent Need of Conservation Action or Study** – Again, these urgent need is based on perception rather than actual studies.
- **Recent Specific Conservation Actions** – These include, for the most part, enforcement of protection status in national parks.

#### Keys to the Table:

- COLOR KEY:
  - Species name in ORANGE = Migrant
  - Species name in AQUA = Accidental or Vagrant
  - Common Names in Green: Phelps & Meyer de Schauensee 1978
  - Common Names in Red: Hilty 2003
- QUESTION MARKS & ABBREVIATIONS:
  - LRAC = Libro Rojo de las Aves de Colombia
  - IBAs with question mark ? = Only visual records available, or not validated, or doubtful records.
  - ? = situation/status unknown, uncertainty, lack of data or information.
- POPULATION TRENDS:
  - Decreasing slowly →
  - Decreasing rapidly ➡
  - Apparently stable ⇕
- THREATS:
  - A = Loss of wetland / coastal habitat.
  - B = Human encroachment.
  - C = Contaminants in water / fish
  - D = Hunting.
  - E = Nest robbery / disturbance of nesting colonies.
  - F = Conflicts with aquaculture farms.
  - G = "Nuisance" congregation sites.
  - H = Competition for food resources / conflicts with fisheries.
  - I = Debris ingestion / entanglements.

To fill the table, we made a telephone survey of colleagues around the country. Once the table was completed, we found the following situation:

- **Population Trend** – Of the 178 species on the list...



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

- 54 species, or 30.3% of the species, *appear* not to have population problems, that is, their populations seem to have remained stable in recent years,
  - the populations of 12 species, or 6.7%, appear to be slowly decreasing, and
  - 6 species, or 3.4%, are known to have suffered rapid population losses in recent years.
- **Recent Census** – Of the 178 species on the list...
    - 112 species, or 64.8%, have not been censused at all – for them, there exist no population numbers, not even estimates or approximations.
    - Of the remaining 66 species, 59, or 33% of the total, have been subjects of recent census, or are being tallied at present time, and
    - for 7 species, we are not certain if they have been included or not in recent censuses.

In most cases, the censuses are partial, carried out at only one or a few localities. The number of species that have been censused in recent times or are subjects of censuses presently under way, is a bit deceiving, since the majority of these species are migrant shorebirds that are usually found in mixed flocks, therefore counted jointly. A more real image of the scarcity of census work would be given by the number of researchers involved in this activity, which at present time does not even reach 10.
  - **Recent Field Studies** – The results in this column are very similar to those of the preceding column, since what usually happens is that field studies include at least a local survey.
    - We have 113 species, or 63.4%, that have not been studied at all in recent years,
    - 58 or 32.5%, that have been the subject of some kind of field study, and
    - 7 species for which we are not certain.
  - **Threats** – Among the 178 species on the list...
    - 115 species, or 64.4%, are considered to be threatened by loss of wetland/coastal habitat (**A**);
    - 125 species, or 70.2%, are considered to be threatened by human encroachment (**B**);
    - 52 species, or 29.2%, are considered to be threatened by contaminants (oil, heavy metals, pesticides, etc.) in the water or food chain (**C**);
    - 29 species, or 16.3%, are threatened by hunting (**D**);
    - 44 species, or 24.7%, are threatened by nest robberies or disturbance of nesting colonies (**E**);
    - 3 species, or 1.7%, are threatened by conflicts with aquaculture farms (**F**);
    - 2 species, or 1.1%, are threatened because their congregation sites are considered a “nuisance” (**G**);
    - 5 species, or 2.8%, are *known* to be threatened by competition for food resources and or conflicts with fisheries (**H**); and
    - 38 species, or 21.3%, are threatened by debris ingestion or entanglement with floating debris (**I**).
    - For 14 species, or 7.8%, there is so little information, that not even the threats that affect them are known (?). For the most part, these species are members of the Rallidae family. It is quite difficult to know even if they are affected by habitat loss or human encroachment, but we suppose that they possibly are.
  - **Urgent Need of Conservation Action or Study** – Of the 178 species on the list...
    - 24 species, or 13.5%, were considered to be in need of urgent conservation action or study. And although we consider that *all* species are in need of conservation action or study,
    - for 71 species, or nearly 40%, we are fairly confident that the need is *not* urgent, and



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

- for 83 species, or 46.6%, we are not sure or do not know. This is quite a terrible figure: we know so little about nearly half of the aquatic Non-Passeriform species in Venezuela, that we do not even know if their populations are in a vulnerable or exposed situation.
- **Recent Specific Conservation Actions** – Of the 178 species on the list...
  - only 16 species, or 9%, have benefited from some kind of conservation action, while...
  - 157, or 88% of the aquatic non-passeriform species in Venezuela, have not been targeted for conservation actions of any kind, and
  - for 5 species we were not sure or had no information.

The specific conservation actions that we are referring to here are, for the most part, enforcement of national park and wildlife sanctuary protection measures (i.e. Los Roques N.P., Los Olivitos W.S.). On the other hand, the 88% of species that are completely bereft of specific conservation measures other than the conservation of habitat inside protected areas, is the one single most dramatic number to come out of this analysis. Clearly, the present status of aquatic Non-Passeriform birds in Venezuela, while not dramatically disastrous, is not satisfactory. There certainly is a lot to be done.

#### 10. Conclusions and Recommendations

**10.1.** From the results obtained in the analysis of the table, it becomes obvious that one of our most emphatic recommendation has to be that population censuses and surveys, as well as field studies to evaluate the species, be carried out. Without this information, little can or will be done that can be truly effective, or that will target the species that really need the conservation work.

**10.2.** We consider that it is becoming increasingly important to design and advance a program to find, recruit and strengthen a local NGO for each important wetland and IBA, that will champion the cause of conservation of the particular wetland and undertake education and awareness workshops with local schools and community organizations. This is a well-established and well-defined part of the BirdLife agenda, so it should be part of the country program of each partner. In situ conservation is of the greatest importance and it works best when carried out by in situ people.

#### 11. Funding sources and organizations/programs which contribute to bird, aquatic bird or wetland conservation in Venezuela

1. **Venezuela Audubon Society (SCAV).** Environmental awareness and education, conservation projects, community participation programs, publications.
2. **Colección Ornitológica Phelps (COP)** Research focused on taxonomy, biogeography, distribution of bird species. The museum is the seat of the recently-created Union Venezolana de Ornitólogos (UVO).
3. **The Nature Conservancy (TNC).** Projects focused on the Canaima National Park and the indigenous communities settled in the Park.
4. **Conservation International, Venezuela Country Office.** Funds for research and conservation projects, community participation and awareness, environmental education, etc.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

5. **Fundación para la Defensa de la Naturaleza (FUDENA)**, Venezuelan partner of World Wildlife Fund (WWF). Recently, a GEF funded project on the biodiversity of the Llanos.
6. **IUCN Venezuelan Coordinator**: Ing. Amando Hernández, Fundación Polar, Caracas. Government-environmental community relations, action plans and specialist groups' activities.
7. **Fundación La Salle and Museo de Historia Natural La Salle**. Research focused on biology and biodiversity, taxonomy and biogeography. Funds for research projects.
8. **Instituto de Zoología Tropical, Universidad Central de Venezuela (IZT-UCV)**. Research and education in Neotropical biology.
9. **Universidad de Oriente (UDO), Cumana Campus**.
10. **Instituto de Investigaciones Marinas, Universidad Simón Bolívar, (INTECMAR-USB)**.
11. **Instituto de Recursos Naturales, Universidad Simón Bolívar (IRN-USB)**.
12. **Oficina Nacional de Biodiversidad, Ministerio del Ambiente y Recursos Naturales (MARN)**.

#### 12. Domestic and International legal instruments for aquatic bird conservation

##### 12.1 International Agreement Ratification Laws -- Leyes Aprobatorias de Convenios Internacionales

- **Ley Aprobatoria de la Convención para la Protección de la Flora, de la Fauna y de las Bellezas Escénicas Naturales de los Países de América**. Gaceta Oficial de la República de Venezuela No. 20.643 del 13 de Noviembre de 1941.
- **Ley Aprobatoria de la Constitución de la Unión Internacional para la Protección de la Naturaleza**. Gaceta Oficial de la República de Venezuela No. 24.654 del 25 de Enero de 1955.
- **Ley Aprobatoria de la Convención sobre el Mar Territorial y la Zona Contigua**. Gaceta Oficial de la República de Venezuela No. 26.619 del 31 de Julio de 1961
- **Ley Aprobatoria de la Convención Internacional para impedir la Contaminación de las Aguas del Mar por los Hidrocarburos, de 1954**. Gaceta Oficial de la República de Venezuela No. 883 Extraordinario del 21 de Octubre de 1963. (Véase Gaceta Oficial de la República de Venezuela No. 884 Extraordinario del 11 de Noviembre de 1.963 donde se reimprime por error de copia). (Véase Gaceta Oficial de la República de Venezuela No. 2.314 Extraordinario del 26 de Septiembre de 1978, donde se dicta la Ley Aprobatoria de las Enmiendas a esta Convención). (Véase Gaceta Oficial No. 37.323 de fecha 13 de Noviembre del 2001, por la cual se promulga el Decreto con Fuerza de Ley Orgánica de Hidrocarburos).
- **Ley Aprobatoria de la Convención de la Organización Hidrográfica Internacional” de 1967**. Gaceta Oficial de la República de Venezuela No. 29.888 del 24 de Agosto de 1.972.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

- **Ley Aprobatoria del Acuerdo entre el Gobierno de Venezuela y la UNESCO, relativa al Centro Internacional de Ecología Tropical.** Gaceta Oficial de la República de Venezuela No. 31.189 del 7 de Marzo de 1977.
- **Ley Aprobatoria de la Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres.** Gaceta Oficial de la República de Venezuela No. 2.053 Extraordinario del 29 de Junio de 1977
- **Ley Aprobatoria del Protocolo de Lima Adicional al Acuerdo de Cartagena. (Suscrito en Lima, Perú, el 30 de Octubre de 1.976).** Gaceta Oficial de la República de Venezuela No. 2.118 Extraordinario del 30 de Diciembre de 1977.
- **Ley Aprobatoria del Tratado de Cooperación Amazónica.** Gaceta Oficial de la República de Venezuela No. 31.993 del 28 de Mayo de 1980.
- **Convenio para la Protección y el Desarrollo del Medio Marino de la región del Gran Caribe.** Gaceta Oficial de la República de Venezuela No. 33.498 del 25 de Julio de 1986
- **Ley Aprobatoria del Protocolo Modificador del Acuerdo de Cartagena denominado Protocolo de Quito.** Gaceta Oficial de la República de Venezuela No. 33.958 del 4 de Mayo de 1988.
- **Ley Aprobatoria de la Convención Relativa a los Humedales de Importancia Internacional como Hábitat de Aves Acuáticas (Convención de Ramsar) y de su Protocolo Modificador.** Gaceta Oficial de la República de Venezuela No. 34.053 del 16 de Septiembre de 1988.

#### 12.2. Organic Laws -- Leyes Orgánicas

- **Organic Law for Land Use and Organization of the Territory -- Ley Orgánica para la Ordenación del Territorio.**  
Tiene por objeto establecer las disposiciones que regirán el proceso de ordenación del territorio, en concordancia con la Estrategia de Desarrollo Económico y Social de la Nación. Gaceta Oficial de la República de Venezuela No. 3.238 Extraordinario del 11 de Agosto de 1.983
- **Organic Law of the Environment -- Ley Orgánica del Ambiente**  
Tiene por objeto establecer dentro de la política del desarrollo integral de la Nación, los principios rectores para la conservación, defensa y mejoramiento del ambiente en beneficio de la calidad de la vida. Gaceta Oficial de la República de Venezuela No. 31.004 del 16 de Junio de 1976.

#### 12.3. Ordinary Laws -- Leyes Ordinarias

- **Law of Partial Reform of the Organic Law-Level Decree on Aquatic and Insular Spaces -- Ley de Reforma Parcial del Decreto con Fuerza de Ley Orgánica de los Espacios Acuáticos e Insulares**  
Tiene por objeto regular el ejercicio de la soberanía, jurisdicción y control sobre los espacios acuáticos e insulares de la República Bolivariana de Venezuela, conforme al Derecho Interno e Internacional. Gaceta Oficial de la República Bolivariana de Venezuela No. 37.596 del 20 de Diciembre de 2002.



## Waterbird Conservation for the Americas La Conservación de las Aves Acuáticas para las Américas

- **Law on Territorial Sea, Continental Platform, Protection of Fisheries, and Aerial Space -- Ley sobre Mar Territorial, Plataforma Continental, Protección de la Pesca y Espacio Aéreo**

El mar territorial de la República de Venezuela, tiene a todo lo largo de las costas continentales e insulares de ésta, una anchura de 22 Kilómetros y 224 metros, equivalentes a 12 millas náuticas, medidas a partir de las líneas de base que se refiere el artículo 2° de esta Ley. La soberanía nacional en el mar territorial, se ejerce sobre las aguas, el suelo, el sub-suelo y los recursos que en ellos se encontraren. Gaceta Oficial de la República de Venezuela No. 496 Extraordinario del 17 de Agosto de 1.956. Derogados los artículos 1, 2, 3, 4, 5, y 6 por la Ley Orgánica de los Espacios Acuáticos.
- **Law on Forests, Soils and Waters -- Ley Forestal, de Suelos y de Aguas**

Rige la conservación, fomento y aprovechamiento de los recursos naturales que en ella se determinan y los productos que de ella se derivan. Gaceta Oficial de la República de Venezuela No. 997 Extraordinario del 08 de Enero de 1.966. (Véase Gaceta Oficial de la República de Venezuela No. 1.004 Extraordinario del 26 de Enero de 1.966, donde se reimprime por error en el original).
- **Law on Protection of Wildlife -- Ley de Protección a la Fauna Silvestre**

Rige la protección y aprovechamiento racional de la fauna silvestre y de sus productos, y el ejercicio de la caza. Gaceta Oficial de la República de Venezuela No. 29.289 del 11 de Agosto de 1.970.
- **Law of Partial Reform of the Law of the National Parks Institute -- Ley de Reforma Parcial de la Ley del Instituto Nacional de Parques**

Rige todo lo relativo a la planificación, construcción, ampliación, organización, acondicionamiento, conservación y administración de los Parques Nacionales y de Recreación a campo abierto o de uso intensivo. Gaceta Oficial de la República de Venezuela No. 2.290 Extraordinario del 21 de Julio de 1.978. (Quedan derogados los Decretos Nos. 443 y 663 de fechas 20 de enero y 06 de octubre de 1.961, respectivamente, referente a la creación y funcionamiento del Servicio Autónomo Administración del Parque del Este).
- **Law of the Institute for the Control and Conservation of Lake Maracaibo Basin -- Ley del Instituto para el Control y la Conservación de la Cuenca del Lago de Maracaibo**

Se crea el Instituto para el Control y Conservación del Lago de Maracaibo y de su Cuenca Hidrográfica, dotado de personalidad jurídica y patrimonio propio, distinto e independiente del Fisco Nacional. Estará adscrito al Ministerio del Ambiente y de los Recursos Naturales Renovables, y tiene por objeto, entre otros, promover, planificar, programar, coordinar, evaluar y ejecutar las labores inherentes a las investigaciones y asesoramiento necesarios con la conservación del Lago de Maracaibo y su Cuenca. Gaceta Oficial de la República de Venezuela No. 2.890 Extraordinario del 28 de Diciembre de 1.981.
- **Criminal Law of the Environment -- Ley Penal del Ambiente**

Its objective is to typify as criminal the deeds that violate rulings regarding the conservation, defense and improvement of the environment. It establishes the corresponding penalties. Tiene por objeto tipificar como delitos, aquellos hechos que violen las disposiciones relativas a la conservación, defensa y mejoramiento del ambiente y establece las sanciones penales correspondientes. Asimismo, determina las medidas precautelativas de restitución y de reparación a que haya lugar. Gaceta Oficial de la República de Venezuela No. 4.358 Extraordinario del 03 de Enero de 1.992.



## Waterbird Conservation for the Americas

### La Conservación de las Aves Acuáticas para las Américas

- **Law on Biological Diversity -- Ley de Diversidad Biológica**  
Establishes the guiding principles for the conservation of Biological Diversity. -- Tiene por objeto establecer los principios rectores para la conservación de la diversidad biológica. Gaceta Oficial de la República Bolivariana de Venezuela No. 5.468 Extraordinario del 24 de Mayo del 2000.
- **Law of Partial Reform of Law-level Decree No. 1,524 on Fisheries and Aquacultures -- Ley de Reforma Parcial del Decreto N° 1.524 con Fuerza de Ley de Pesca y Acuicultura**  
Gaceta Oficial de la República Bolivariana de Venezuela No. 37.726 de fecha 7 de Julio del 2003.

### 13. List of Threatened Species and Watchlist

The following table lists all the waterbird species found in Venezuela that are included in any of the categories in TBW.

Two species are considered **ENDANGERED**.  
Fourteen species are considered **LOWER RISK**. Of these, nine species are considered of **LEAST CONCERN**, while 5 species are considered **NEAR THREATENED**.

<i>Rallus wetmorei</i>	Plain-flanked Rail	<b>EN</b>
<i>Laterallus levraudi</i>	Rusty-flanked Crake	<b>EN</b>
<i>Puffinus gravis</i>	Greater Shearwater	<b>LR / LC</b>
<i>Agamia agami</i>	Agami Heron	<b>LR / LC</b>
<i>Tigrisoma fasciatum</i>	Fasciated Tiger-Heron	<b>LR / LC</b>
<i>Zebrilus undulatus</i>	Zigzag Heron	<b>LR / LC</b>
<i>Coturnicops notatus</i>	Speckled Crake	<b>LR / LC</b>
<i>Micropygia schomburgkii</i>	Ocellated Crake	<b>LR / LC</b>
<i>Gallinago undulata</i>	Giant Snipe	<b>LR / LC</b>
<i>Limosa haemastica</i>	Hudsonian Godwit	<b>LR / LC</b>
<i>Sterna dougallii</i>	Roseate Tern	<b>LR / LC</b>
<i>Chauna chavaria</i>	Northern Screamer	<b>LR / NT</b>
<i>Neochen jubata</i>	Orinoco Goose	<b>LR / NT</b>
<i>Gallinago stricklandii</i>	Andean Snipe	<b>LR / NT</b>
<i>Numenius americanus</i>	Long-billed Curlew	<b>LR / NT</b>
<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	<b>LR / NT</b>



## Waterbird Conservation for the Americas

La Conservación de las Aves Acuáticas para las Américas

### 14. List of Wetlands of Importance to Waterbirds and their Geographic Coordinates

IBA	Legal Status	IBA #	EBA	COORDINATES
Isla de Aves	Refugio de Fauna Silvestre	VE001		15° 40' N - 63° 37' O
Isla La Blanquilla		VE002		11° 50' N - 64° 35' O
Archipiélago Los Roques	Parque Nacional	VE003		11° 52' N - 66° 47' O
Laguna de las Marites	Monumento Natural	VE005	035	10° 55' N - 63° 55' O
Laguna de La Restinga	Parque Nacional	VE006	035	10° 59' N - 64° 07' O
Morrocoy	Parque Nacional	VE007	033 035	10° 49' N - 68° 13' O
Cuare	Refugio de Fauna Silvestre	VE008	035	10° 56' N - 68° 20' O
Tucurere	Reserva de Fauna Silvestre	VE009		11° 05' N - 68° 22' O
Humedales de la Laguna de Sauca y la Boca del Río Hueque		VE010	035	11° 24' N - 68° 55' O
Laguna de Boca de Caño	Refugio de Fauna Silvestre Reserva de Pesca	VE013		11° 58' N - 69° 50' O
Ciénaga de Los Olivitos	Refugio de Fauna Silvestre y Reserva de Pesca	VE014	035	10° 54' N - 71° 23' O
Ciénagas de Juan Manuel	Parque Nacional	VE015		09° 26' N - 72° 08' O
Ciénagas de Juan Manuel	Reserva de Fauna Silvestre	VE016		09° 22' N - 72° 02' O
Turuépano	Parque Nacional	VE020		10° 24' N - 62° 55' O
Humedal de Chacopata		VE023		10° 39' N - 63° 50' O
Mochima	Parque Nacional	VE024	035	10° 18' N - 64° 29' O



**Waterbird Conservation for the Americas**  
La Conservación de las Aves Acuáticas para las Américas

Lagunas de la Boca del Río Unare (Píritu y Unare)		VE025		10° 05' N - 65° 11' O
Laguna de Tacarigua	Parque Nacional	VE026		10° 17' N - 65° 47' O
Macarao	Parque Nacional	VE029	033	10° 22' N - 67° 07' O
Pedernales-Capure		VE044		09° 58' N - 62° 16' O
Mariusa-Delta del Orinoco	Parque Nacional	VE045		09° 28' N - 61° 27' O
Gran Morichal	Reserva de Fauna Silvestre	VE047		09° 25' N - 62° 36' O
Aguaro-Guariquito	Parque Nacional	VE049		08° 20' N - 66° 38' O
Esteros de Camaguán	Reserva de Fauna Silvestre	VE050		08° 14' N - 67° 39' O
Hato Masaguaral	Reserva Privada	VE051		08° 34' N - 67° 35' O
Hato El Piñero	Reserva Privada	VE052		08° 56' N - 68° 05' O
Hato El Frío	Reserva Privada	VE053		07° 46' N - 68° 57' O
Hato El Cedral	Reserva Privada	VE054		07° 26' N - 69° 19' O
Cinaruco-Capanaparo	Parque Nacional	VE056		06° 48' N - 67° 40' O
Canaima	Parque Nacional	VE061	064	05° 31' N - 61° 56' O
Campamento Junglaven (Río Ventuari)		VE065		05° 05' N - 66° 15' O
Río Sipapo	Reserva Forestal	VE066	064 065	04° 50' N - 67° 14' O



**Waterbird Conservation for the Americas**  
La Conservación de las Aves Acuáticas para las Américas

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**Waterbird Conservation for the Americas**  
La Conservación de las Aves Acuáticas para las Américas

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