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Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 17 September 2002

2. Country: Cuba

3. Name of wetland: Cauto Delta Wetland

4. Geographical coordinates:

20° 20' 41" – 20° 45' 57" North latitude
76° 58' 25" – 77° 23' 03" West longitude

5. Altitude: less than one metre

6. Area: 47,836.2 hectares

7. Overview:

This is the most extensive and complex delta system in Cuba and is one of the most important in the Caribbean. This wetland is formed by a complex of estuaries, lagoons, tidal areas and swamps that are at the end of the largest river system in Cuba (Río Cauto). They form the second most important wetland in Cuba. In general, its swamps, lagoons and open areas form landscapes of singular beauty, which together with its relative inaccessibility and the difficulty of travelling through the area have allowed this area to remain unaffected by humans. Mangroves with a relevant high degree of conservation status dominate, growing up to 30 metres in height. These populations are considered by several specialists as the most vigorous and best conserved in Cuba. The largest group of fauna represented is that of birds with 105 species. This is one of the largest reservoirs of aquatic birds in Cuba, especially the pink flamingo, which uses the area for breeding at three nesting sites, with a population of more than 35,000 specimens. There are about 16 species of reptiles, including the local endemic *lagartija de Birama*, limited to the edges of the lower part of Río Cauto. Other reptiles of importance for conservation are the iguana, *jicotea* and American crocodile. In the pre-Colombian period, the Cauto Delta was the site of many Indian settlements.

8. Wetland type:

Marine-coastal: I, K, H, G, J, A, B, E and F

Inland: M, O, P, Q, R, Ss, Tp, Ts, U, Xf and Xp

Artificial: 1, 3 and 9

9. Ramsar criteria: 1, 2, 3, 4, 5, 7 and 8

10. Map of site included? Please tick yes -or- no

11. Name and address of the compiler of this form:

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12. Justification of the criteria selected under point 9, on previous page:

Criterion 1: This is an example of an especially representative natural wetland characteristic of the biogeographic region where it is found, forming the largest delta system in Cuba and one of the most important in the Caribbean. It is one of the most important elements in the balance of material and energy that makes the Gulf of Guacanayabo our richest and most productive fishery. It is the second largest area mangroves and other ecosystems of wetland in Cuba. It plays an important hydrological role because it is the final result of the largest river system in Cuba (Río Cauto).

Criterion 2: The Cauto Delta Wetland sustains populations of resident endangered species that find refuge, food and nesting sites here, such as the *catey* (*Aratinga euops*), which is endemic and vulnerable; Cuban tree duck (*yaguasa*) (*Dendrocygna arborea*), endemic to the Caribbean and vulnerable; *lagartija de Birama* (*Anolis birama*), local endangered endemic; American crocodile (*Crocodylus acutus*), a vulnerable species with the largest populations in Cuba in this wetland; Cuban amazon (*cotorra cubana*) (*Amazonas leucocephala*), considered almost endangered; the manatee (*Trichechus manatus*), a vulnerable mammal; the Cuban ground iguana (*Cyclura nubila*), classified as vulnerable (IUCN, 2000). There are also important populations of *Catesbea gamboana*, a species of local endangered endemic flora.

Criterion 3: This is a site of high biological diversity and endemism. There are 143 species of fauna represented, with that of birds the best-represented group, with 105 species, distributed in 18 orders, 43 families and 112 genera. Eight species of endemic birds live in this area, two species of amphibians, and some 17 species of reptiles, including the endemic local *lagartija de Birama* (*Anolis birama*), restricted to the edges of the lower Río Cauto. Other reptiles of importance for the conservation are the Cuban ground iguana (*Cyclura nubila nubila*), *jicotea* (*Trachemis decussata*),

Cuban tree boa (*majá de Santa María*) (*Epicrates angulifer*) and American crocodile (*Crocodylus acutus*).

Criterion 4: This wetland is of special importance as habitat for animals during critical periods, especially during the reproductive stage. Its large area and ecological diversity provide a wide variety of fertile and well conserved biotypes that fully satisfy the requirements of all types of a wide range of zoological species, especially those of the aquatic habitat whose fullest expression is the flamingo, a migratory bird with a large nesting area in this wetland. There are about 35,000 specimens of flamingo living here.

Criterion 5: This wetland regularly sustains a population of more than 20,000 aquatic birds, among which the most important are the flamingo (*Phoenicopterus ruber*), pelican (*Pelicanus occidentalis*), Cuban tree duck (*yaguasa*) (*Dendrocygna arborea*) and several species of herons. This wetland regularly sustains significant numbers of specimens of several groups of aquatic birds that are indicator species of the importance and productivity or the diversity of the wetlands. The most significant example is the case of the American flamingo, up to 35,000 specimens.

Criterion 7: In this wetland are found significant populations of fish in more than 15 families. Among the important salt-water fish because of their numbers are the *sábalo* (*Megalops atlanticus*), *mojarra* (*Gerres* sp.) and *cubereta* (*Lutjanus sianopterus*). Among the outstanding freshwater fish because of their abundance are *Claridichytus falcatus*, *Gambusia puncticulata*, *Geraldinus matacillus* and *Limea vitata*. However, there is still a lack of information in this sense and there are no updated inventories and studies of the ecological interactions of these species.

Criterion 8: This wetland constitutes an important source of food for fish and is a hatching and growth area. Río Cauto is the second largest river in Cuba, dividing its bed before emptying into the Gulf of Guacanayabo into two large areas (Cauto Norte and Cauto Sur), forming the main source of fresh water for this wetland, creating many lagoons and marshes interconnected with the sea, which provide the formation of an estuarine system that serves as the basis for the existence of the large diversity of biota. It is the habitat where life begins for most of the fish and aquatic mammals that live in the Gulf of Guacanayabo. This area is considered to be a highly productive fishery.

13. General location:

The Cauto Delta Wetland is an enclave in the Sur Oriental region of the island of Cuba, occupying the western part of the municipio of Río Cauto, province of Granma, bounded on the north with the municipio of Jobabo in the province of Las Tunas, on the south with the western part of the municipio of Yara, on the east with the rest of the municipio of Río Cauto and on the west with the Gulf of Guacanayabo. The closest cities are Bayamo, approximately 1 ½ hours away and Las Tunas 2 hours distant.

14. Physical features:

Geology: The Cauto Delta occupies the emerged part of the lowest part of the Cauto-Guacanayabo tectonic depression (graben), an old geographic structure subjected to subsidence over which the area known as Valle del Cauto has developed in the emerged part.

Geomorphology, hydrology and soils: We group these three elements in a single aspect because of their close association and facilitate description of their interrelations. The Cauto Delta is the most extensive delta system in Cuba. It is made up of a complex of estuaries, tidal areas, lagoons and marshes, created during evolution of the Delta, and is a product of the differentiated accumulation of sediments in the shallow marine areas and the interrelation with the freshwater from inland (surface and subterranean) with age-old hyper-annual fluctuations of sea level. It forms an extensive plain of average elevation of less than one metre. With large depressed flooded areas (lagoons) and others seasonally flooded (tidal areas, marshes, grasslands and forests). As characteristic, these plains are determined mostly by the hydrological functioning of the area, because of their hypsometric position and distance to the coast, as a result their characterization can be divided into three large distinct geographic areas, with different hydrological behaviour: Boca Cauto Norte, Boca Cauto Sur and Brazo La Puente.

The most representative soils are hydromorphic, type marsh, subtype bog with little resistant and unsuited for agriculture.

- Organic soils (swamp): These soils have a high content of organic material of more than 30 per cent. They are found closest to the coast, and in them grow mangroves.
- Poorly differentiated alluvial soil: This lies on carbonated or non-carbonated material, moderately deep, with light humus, slightly alkaline. Their texture is clay, with an effective depth between 32 and 45 centimetres. They are slightly plastic. They have good internal and superficial drainage.

Water quality: The surface water has a high content of total soluble salts (SST), making it unsuitable for human consumption, plus pollution produced by the dumping of untreated wastes from the Centrales Azucareros, domestic and farm waste and fumigation of the rice paddies. The underground water usually has high mineralization of more than 3 grams/litre, sometimes reaching up to 38 grams/litre. North of the wetland is found water of good quality in aquifers under pressure, reaching a piezometric level of up to five metres above the surface with mineralization of 0.8–1.2 grams/litre. Because of its ionic composition, it is classified as bicarbonated sodium. There is pollution from lime intrusion in the rivers and the lagoon system, which is produced by the flow and ebb of the tide.

Fluctuations in the level and permanence of water: The depth of the underground water varies between 1 and 2.5 metres. The depth of the water in the lagoons is approximately 0.5 to 2.5 metres.

There is a natural regime of hydrological interactions between the marine water of the Gulf of Guacanayabo and the water table of the wetland. Saline intrusions advance inland, which along with other adverse processes contributes to desertification.

Climate: Average temperature: 25–28° C; average relative humidity: 80–82. Average annual precipitation: 700–1200 millimetres. The climate is tropical with semi-continental characteristics. Annual precipitation: there are two well-defined periods: one dry from November to April and one rainy from May to October. The wetland is located in an area of dry environment, with annual rainfall of less than 1000 millimetres. The annual average maximal absolute temperature is 36° C and the average annual minimum absolute temperature is 12° C. Average annual evaporation is 2400 millimetres, one of the greatest in the province.

15. Hydrological values:

For a better understanding, the explication of this aspect will be described for each of the geographical areas that make up the wetland.

Boca de Cauto Norte: This is considered the area of greatest importance in the Delta de Cauto because of its size and diversity. It is very influenced by the drainage underground freshwater from the North and Northwest and by several rivers, including the Jobabo and basically El Cauto. Towards the interior, there is a system of large freshwater and brackish lagoons (sometimes salt water) (Birama, Hoja de Maíz and Leonero). These lagoons, with the exception of Leonero, are large and have freshwater in the rainy season and are reduced and brackish in the dry season, because of the influence of the sea. Leonero is an exception because it is regulated by dikes and is permanently fresh water; only its depth varies seasonally in accordance with the rainfall. Further towards the coast, there are large salt pans, shallow lagoons in a saline-hyper saline state, seasonally fresh, or brackish in the rainy season. In the dry season, the flooded part of these tidal areas and salt pans is decreased, especially towards the banks of El Cauto, where they remain dry, forming large sandy, dusty, saline deserts, without vegetation.

Boca de Cauto Sur: This is characterized by the little influence of the freshwater underground flows and a marked marine influence that has formed the largest system of coastal lagoons in the area, interconnected by large swamps. It is the most marine area of the region and has great importance as an area for raising commercial species in pens.

Brazo La Puente: This is strongly influenced by the underground and combined fluvial contributions of the Buey and Hicotea rivers. It forms a relatively small strip of seasonally flooded marsh grasslands (with freshwater) followed towards the coast by a mosaic of mangroves and marsh woodlands.

16. Ecological features:

The dominant habitats, which cover large areas, are mangroves, marsh grasslands and savannahs.

Mangroves as typical ecosystems: *guanales* (savannahs), freshwater aquatic vegetation, marsh grasslands and swamp forest.

Description:

- (a) Mangroves: This is the most extensive habitat in the area. It contains four species: *Rhizophora mangle* (red mangrove), *Avicennia germinans* (black mangrove), *Conocarpus erectus* (*yana*) (buttonwood) and *Laguncularia racemosa* (*pataban*) (white mangrove), with clear dominance of black mangrove. It is little modified, reaching heights of up to 30 metres in several places.
- (b) *Guanal*: This is represented by *Copernicia gigas*, which is very high and abundant sometimes intertwining with semi-deciduous forest. It is the habitat of several species, especially the *catey* (*Aratinga euops*).
- (c) Aquatic freshwater vegetation: This dominates mainly in the lagoons near Leonero. This semi-natural dam of 0.5 to 1.0 metres in depth forms an overflow reservoir of fresh water on which large areas of aquatic grasses develop, which sometimes form real floating islands. It is also very rich in sub-aquatic communities. The most frequent species are *Azolia caroliniana*, *Eichornia* sp. and *Lenna minima*;
- (d) Swamp grassland: This develops mainly in the most inland parts of the areas of Cauto Norte and Brazo de la Puente where it covers large areas. These are permanent and seasonally flooded areas, with different salinity, although they remain as fresh water and sometimes brackish. The herbaceous vegetation has a complex of species dominating the Gramineae, Ciperaceae and many sub-aquatic species;
- (e) Swamp forest: This is represented by the Atejitos forest and a large part of the area of Brazo La Puente. Dominant are *Buxida espinosa*, *Dischoristes bayatensis*, *Gimnantas lucida* and *Zuelania guidania*. These woodlands form an important refuge for the wildlife associated with the trees.

17. Noteworthy flora:

A total of 114 species, of which 13 are endemic, have been reported for the area. Among the main species for which the wetland is particularly important are the following:

<i>Belairia mucronata</i>
<i>Copernicia baileyana</i>
<i>Copernicia gigas</i>
<i>Copernicia rígida</i>
<i>Copernicia vespertilionun</i>
<i>Harrisia eriophara</i>
<i>Rhodocactus cubensis</i>
<i>Sabal parviflora</i>
<i>Tabebuina augustata</i>

In addition, there is *Catesbea gamboana*, which is a local endemic endangered species (see annex I with a list of species).

18. Outstanding fauna

Preliminary inventories and field observations are sufficient to show the great importance that all the region has as a refuge, for reproduction of the fauna and as a reservoir for a wide and varied gene pool. The best-represented group is that of the birds with 103 species, among which the Cuban parakeet (*catey*) (*Aratinga euops*),

tocororo (*Priotelus temnurus*) and the American flamingo (*Phoenicopterus ruber*) stand out. There are populations of Cuban tree duck (*yaguasa*) (*Dendrocygna arborea*), a species restricted to the Caribbean and considered endangered. There are eight families of reptiles, with 16 species, with the presence of the local endemic, the *lagartija de Birama* (*Anolis birama*), restricted to the edges of the inland branch of Río Cauto. Other important reptiles are the Iguana (*Cyclura nubila*), American crocodile (*Crocodylus acutus*), *jicotea* (*Trachemys decussata*) and the Cuban tree boa (*majá de Santa María*) (*Epicrates angulifer*). Mammals are represented by seven species. Among them are the *jutía conga* (*Capromys pilorides*), *murciélago pescador* (*Noctilio leporinus*) and the American manatee (*Trichechus manatus*). Four are introduced species (cats, cows, wild dogs and rats). Among the freshwater fish important because of their abundance are *Claridichytus falcatus*, *Gambusia puncticulata*, *Geraldinus matacillus* and *Limea vitata*. The heaviest diversity corresponds to the marine fish species specific to the estuarine areas (see annex II: preliminary list of species).

19. Social and cultural values:

The Cauto Delta Wetland forms an area rich in both freshwater and brackish water fish. As a result, fishing constitutes an important activity on which local inhabitants depend and where there are two fishing cooperatives (lagoons of Leonero and Guamo). The ranching of freshwater fish allows sustainable intensive exploitation of fish. The main species of flora used economically is *yarey* (the leaf of the *Copernicia giga*), which is used as roofing material. The area also has a high archaeological potential. So far, 17 sites of pre-Colombian inhabitants, pre-agro-goldsmiths, have been reported, including the outstanding site “El Mango” in the municipio of Río Cauto, which was discovered in the 1940s and later excavated in 1986 under the direction of Dr. Jorge Febles Arias, a scientist with the Centro de Antropología. The archaeology of this area has not been well studied and offers vast prospects for research. Also in this area, important events took place during the fighting during the revolution in the first half of the past century.

20. Land tenure/ownership of:

This wetland has a total area of 47,836.2 hectares. Of that, the State owns 47 348.7 hectares and private interests 487 hectares. About 99 per cent of the wetland is government property and 1 per cent is private property. Government property is represented by the CAI Arrocero Fernando Echenique, the Unidad Silvícola de la Empresa Forestal Integral and the Establecimiento de la Empresa para la Protección de la Flora y la Fauna y Empresa PESCAGRAN, which exploits the lagoons of Leonero and Birama. Private property is represented by a credit and service cooperative and independent small farmers.

21. Current land use:

The people living in the wetland farm the land, and there are large rice and sugarcane fields. Conservation activities involve the fauna and flora, primarily the forest. There is also large-scale and intensive shrimp farming. Water is supplied to the local population through the river network, through a *patana*, because in the area where there are inhabitants, there is no good-quality underground water. Within the

wetland, there is no irrigation. Livestock raising is extensive, and water is taken from the rivers and the freshwater lake. There are two human settlements in the area: Managuanas and Cabezadas with a population of 108 inhabitants and approximately 30 houses dispersed with a population of 70 inhabitants. The road network is made up of a main access road, which is now in poor conditions that joins tourist centres with the Tunas-Bayamo highway and a road in very bad conditions, which is no longer useable during the rainy season, which links the municipio and the municipal seat of Río Cauto with the two human settlements and the dispersed population.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects:

This wetland has a marked dependence on the surface streams that flow into the Cauto basin, which is its main supply of water. They can negatively affect conservation of the natural value of the wetland. The main adverse factors affecting the ecology are related to the processes of salinization, erosion and loss of water quality. The following are the main problems and impacts:

- Mad-made modifications
- Forest fires
- Deforestation by indiscriminate cutting
- Extraction of construction materials
- Farming of crops
- Illegal hunting of wildlife
- Uncontrolled grazing
- Deviation of Río Cauto through Lake Los Tablones
- Construction of the dam on Lake Leonero
- Canal for a shrimp farms that empties into the lagoon of Las Playas and another that empties into Río Cauto
- Construction of tourist accommodations and fishing camps
- Construction of numerous canals that empty into the swamp
- Introduction of species
- Construction of roads in the area
- Use of chemicals in the rice and sugarcane industries
- Dumping of industrial waste into the environment
- Dissemination of *marabú* seeds for uncontrolled grazing
- Effects produced by coastal action (dumping of oil, use of boats, noise, etc., which affect the fauna)
- Fishing in swamps and inland lagoons
- Construction of the Cauto del Paso dam, which by storing large volumes of water affects the normal bed of the river. Together with other factors, this has affected salinization of the areas closest to the mouth

23. Conservation measures taken:

Within the area of the wetland, there are the protected wildlife areas of the Cauto Delta and Monte Cabaniguan. These areas are included in the National System of Protected Areas and as such they are governed by the guidelines and legal dispositions established by that centre. This area functioned as a protected area

from the 1980s, but it was not until 22 July 1991 that it was legally established by resolution 372-91 of the Ministry for Agriculture and more recently by Agreement 4262 of the Council of Ministers. In 1999, a draft management plan was adopted, which was prepared over five years. Under the plan, 13 conservation projects are being implemented in the following proportions: fauna 8, flora 1, forestry 3 and environmental education 1. Financing has been obtained for these projects. These projects aim to protect, conserve and permit reproduction and rescue of species of fauna and flora, some of which are endangered. Among these are (fauna) *Catey* (*Aratinga euops*) and manatee (*Trichechus manatus*) and (flora) *Catesbea gamboana*. The projects call for constant monitoring of conservation activities.

24. Conservation measures proposed but not yet implemented:

The area has a protection programme aimed at providing protection of the marine and terrestrial areas that are inaccessible by land or accessible only by dirt roads. There is specialized personal prepared for carrying out protection activities, but they lack the means and resources necessary for that, above all, to construct and equip control posts on the access roads, maintain boats for regular patrols and to operate radio-communication equipment.

25. Current scientific research and facilities:

A project called "Flamenco", is being carried out that has made incorporation of an average of 7000 specimens every year possible, increasing the population annually to more than 40,000 specimens. An important project is "Cocodrilo Vida Libre", which has the largest population of American crocodile in the Americas and is the best structured. Other successful projects are those involving the *jutía*, manatee and *lagartija de Birama*.

26. Current conservation education:

Four environmental education projects are being carried out in the area with the participation of schools located throughout the wetland. These projects have the main objectives of reviving traditions, training and forming habits among the local inhabitants that make it local community participation in the solution of environmental problems and conservation and management of the natural resources of the area. One of these projects had regional importance because it is being carried out jointly with several other islands in the Caribbean. The main institutions behind these projects are the ministries of education, culture, flora and fauna, and fishing and the Empresa Forestal. Despite the effort made by the promoters and full community participation, these have been limited by lack of resources and adequate installations.

27. Current recreation and tourism:

There is an installation for specialized tourism exploited at the international level. It is formed by two blocks of accommodations and four double cabins in the form of *caneyes*. There is interest in developing ecotourism here for observation of birds and hiking as well as fishing.

28. Jurisdiction:

Republic of Cuba, provinces of Granma and Las Tunas
Administrator: Ministry for Agriculture.

Management of the area is the responsibility of the Empresa Nacional para la Protección de la Flora y la Fauna (MINAGRI), Unidad Granma and Unidad Las Tunas.

29. Management authority:

Empresa Nacional para la Protección de la Flora y la Fauna
Ministerio de la Agricultura
Unidad Territorial de Granma
Calle Augusto Márquez 10 / Prolongación y General García
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30. References:

Annex I

Flora of the Río Cauto Delta

Species

Species	Common name
<i>Adelia ricinella</i>	Jía, Jía blanca
<i>Amaranthus crassipes</i>	Bledo manso
<i>Avicennia germinans</i>	Mangle prieto
<i>Blechum pyramidatum</i>	
<i>Bromelia pinguin</i>	Piña de ratón
<i>Brya ebenus</i>	Granadillo
<i>Bucida buceras</i>	Júcaro
<i>Bucida spinosa</i>	Júcaro espinoso
<i>Bucida subinermis</i>	
<i>Bursera simaruba</i>	Almácigo colorado
<i>Cabomba piauhiensis</i>	Ayún
<i>Capparis cynophallophora</i>	Mostacilla
<i>Capparis flexuosa</i>	
<i>Cassia alata</i>	Guacamaya francesa
<i>Cedrela mexicana</i>	
<i>Chamaesyce serpens</i>	
<i>Chloris arenaria</i>	
<i>Cissus sicyoides</i>	Bejuco ubí
<i>Conocarpus erecta</i>	Yana
<i>Copernicia baileyana</i>	Yarey hembra
<i>Copernicia gigas</i>	Yareyón
<i>Copernicia rigida</i>	
<i>Copernicia vespertilionum</i>	Jata de los murciélagos
<i>Cordia collococca</i>	Ateje
<i>Cordia oblique</i>	Ateje amarillo
<i>Crescentia cujete</i>	Guira
<i>Cyanthillium cinereum</i>	
<i>Cyperus articulatus</i>	Junco
<i>Cyperus giganteus</i>	
<i>Desmanthus virgatus</i>	Adormidera
<i>Desmodium canum</i>	Amor seco
<i>Dichanthium caricosum</i>	Jiribilla
<i>Dichrostachys cinerea</i>	Marabú
<i>Diospyros crassinervis</i>	Ebano carbonero
<i>Diospyros halesioides</i>	Ebano negro
<i>Dyschoriste bayatensis</i>	
<i>Chloris sagraeana</i> ssp.	Sagraeana
<i>Echinochloa colona</i>	Zancaraña
<i>Eleocharis interstincta</i>	Junco de ciénaga
<i>Eleusine indica</i>	Pata de gallina
<i>Elodea densa</i>	

<i>Eugenia aeruginea</i>	Comecará
<i>Eugenia axillaries</i>	
<i>Eugenia ligustroides</i>	
<i>Eugenia maleolens</i>	
<i>Eugenia procera</i>	
<i>Fimbristylis castanea</i>	Rabo de burro
<i>Fimbristylis ferruginea</i>	
<i>Galactia parvifolia</i>	
<i>Gaya occidentalis</i>	Botón de oro
<i>Ginoria macrophylla</i>	
<i>Guapira longifolia</i>	
<i>Guazuma ulmifolia</i>	Guásima
<i>Gymnanthes lucida</i>	Yaití
<i>Heliotropium curassavicum</i>	Alacrancillo de playa
<i>Heliotropium procumbens</i>	Alacrancillo
<i>Hibiscus elatus</i>	Majagua azul
<i>Hydrocotyle umbellata</i>	Quitasolillo
<i>Inga vera</i> ssp. <i>Vera</i>	Tamarindo de Puerto Rico
<i>Ipomoea setifera</i>	
<i>Isocarpha atriplicifolia</i> var. <i>wrightii</i>	Manzanilla
<i>Jacquinia aculeate</i>	
<i>Kosteletzkya pentasperma</i>	
<i>Laguncularia racemosa</i>	Patabán
<i>Leersia hexandra</i>	
<i>Leptochloa fascicularis</i>	
<i>Leptochloa nealleyi</i>	
<i>Leucaena leucocephala</i>	Aroma blanca
<i>Lonchocarpus sericeus</i> var. <i>glabrescens</i>	Guamá
<i>Lysiloma sabicu sabicú</i>	
<i>Mangifera indica</i>	Mango
<i>Maytenus buxifolia</i>	Sangre de toro
<i>Melicoccus bijugatus</i>	Mamoncillo
<i>Melochia nodiflora</i>	Malva colorada
<i>Mesechites rosea</i>	Rosa de sabana
<i>Najas marina</i>	
<i>Neea shaferi</i>	
<i>Nelumbo lutea</i>	
<i>Neptunia pubescens</i>	
<i>Paspalum lividum</i>	Pata de guanajo
<i>Paspalum millegrana</i>	Caguazo
<i>Phyllostylon brasiliensis</i>	Jatía
<i>Psidium guajava</i>	
<i>Rauvolfia nitida</i>	Huevo de gallo
<i>Rauvolfia tetraphylla</i>	Palo boniato
<i>Rhynchosia minima</i>	Bejuco culebra
<i>Roystonea regia</i>	Palma real
<i>Ruellia tuberosa</i>	Saltaperico
<i>Sabal parviflora</i>	Palma cana
<i>Sagittaria intermedia</i>	Flecha de agua

<i>Samanea saman</i>	Algarrobo
<i>Sapindus saponaria</i>	
<i>Scirpus olneyi</i>	Junco de tres filos
<i>Scoparia dulcis</i>	
<i>Sesuvium portulacastrum</i>	Verdolaga de playa
<i>Sida acuminata</i>	
<i>Sporobolus indicus</i>	Espartillo
<i>Sporobolus virginicus</i>	Gramma de costa
<i>Stigmaphyllon periplocifolium</i>	
<i>Stigmaphyllon sagraeanum</i>	
<i>Strychnos grayi</i>	
<i>Swietenia mahagoni</i>	
<i>Tabebuia angustata</i>	Roble blanco
<i>Tamarindus indica</i>	Tamarindo
<i>Tectona grandis</i>	Teca
<i>Thalassia testudinum</i>	
<i>Thespesia populnea</i>	
<i>Tillandsia recurvata</i>	
<i>Tillandsia setacea</i>	
<i>Tillandsia usneoides</i>	Guajaca
<i>Trichilia hirta</i>	
<i>Typha domingensis</i>	
<i>Urechites lutea</i>	Bejuco marrullero
<i>Utricularia foliosa</i>	

Endemic Species

Species	Common name
<i>Chamaesyce serpens</i>	
<i>Chloris arenaria</i>	
<i>Copernicia baileyana</i>	Yarey hembra
<i>Copernicia gigas</i>	Yareyón
<i>Copernicia rigida</i>	
<i>Copernicia vespertilionum</i>	Jata de los murciélagos
<i>Diospyros halesioides</i>	Ebano negro
<i>Eugenia ligustroides</i>	
<i>Ginoria macrophylla</i>	
<i>Jacquinia aculeate</i>	
<i>Mesechites rosea</i>	Rosa de sabana
<i>Neea shaferi</i>	
<i>Sabal parviflora</i>	Palma cana

Annex II

Fauna of the Cauto Delta

Species	Common name	Endangered	Endemic
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Amphibians

<i>Bufo peltocephala</i>	Sapo de muesca oriental	yes	
<i>Rana catesbeiana</i>	Rana toro	no	

Reptiles

<i>Alsophis cantherigerus</i> ssp.	Jubo	yes	
<i>Anolis allisoni</i>	Lagartija verde-azul	no	
<i>Anolis argenteolus</i>	Lagartija argentado	yes	
<i>Anolis birama</i>	Lagartija de Birama	yes	x
<i>Anolis equestris</i> ssp.	Chipojo verde	yes	
<i>Anolis homolechis</i> ssp.	Lagartija de cresta	yes	
<i>Anolis porcatius</i>	Lagartija verde	yes	
<i>Anolis sagrei</i> ssp.	Lagartija común	no	
<i>Antillophis andreae</i> ssp.	Jubito Magdalena	yes	
<i>Chamaeleolis chamaeleonides</i>	Chipojo ceniciento	yes	
<i>Crocodylus acutus</i>	Cocodrilo americano	no	
<i>Cyclura nubila nubila</i>	Iguana	yes	x
<i>Diploglossus nigropunctatus</i>	Culebrita de cuatro patas	yes	
<i>Epicrates angulifer</i>	Majá de Santa-María	Yes	x
<i>Leiocephalus</i> sp.	Perrito de costa	no	
<i>Trachemys decussata</i> ssp.	Jicotea	no	

Total: 16

Birds

<i>Accipiter gundlachi</i> ssp.	Gavilán colilargo	yes	x
<i>Agelaius assimilis</i>	Mayito de ciénaga	yes	
<i>Agelaius humeralis humeralis</i>	Mayito	no	
<i>Aix sponsa</i>	Huyuyo	no	
<i>Ajaia ajaja</i>	Sevilla	no	
<i>Amazona leucocephala leucocephala</i>	Cotorra	Yes	x
<i>Anas acuta</i>	Pato pescuecilargo	no	
<i>Anas bahamensis bahamensis</i>	Pato de Bahamas	no	
<i>Anas clypeata</i>	Pato cuchareta	no	
<i>Anas crecca carolinensis</i>	Cerceta	no	
<i>Anas discors</i>	Pato de Florida	no	
<i>Anas platyrhynchos platyrhynchos</i>	Pato Inglés	no	
<i>Anhinga anhinga leucogaster</i>	Marbella	no	
<i>Aramus guarauna pictus</i>	Guareao	no	
<i>Aratinga euops</i>	Catey	Yes	x
<i>Ardea herodias repens</i>	Garcilote	no	
<i>Asio stygius siguapa</i>	Siguapa	yes	
<i>Aythya affinis</i>	Pato morisco	no	
<i>Aythya americana</i>	Pato cabecirrojo	no	
<i>Bubulcus ibis ibis</i>	Garcita bueyera	no	
<i>Buteo jamaicensis solitudinis</i>	Gavilán de monte	no	
<i>Buteogallus gundlachii</i>	Gavilán Batista	yes	

<i>Butorides striatus</i> ssp.	Aguaitacaimán	no
<i>Calidris fuscicollis</i>	Zarapico de rabadilla blanca	no
<i>Caprimulgus cubanensis cubanensis</i>	Guabairo	yes
<i>Casmerodius albus</i>	Garzón	no
<i>Cathartes aura aura</i>	Aura Tiñosa	no
<i>Ceryle alcyon alcyon</i>	Martín Pescador	no
<i>Charadrius vociferus vociferus</i>	Títere Sabanero	no
<i>Charadrius wilsonia wilsonia</i>	Títere playero	no
<i>Chlorostilbon ricordii ricordii</i>	Zunzún	yes
<i>Chordeiles minor</i> ssp.	Querequeté americano	no
<i>Coccyzus americanus americanus</i>	Primavera	no
<i>Colinus virginianus cubanensis</i>	Codorniz	yes
<i>Columba leucocephala</i>	Torcaza Cabeciblanca	no
<i>Columba squamosa</i>	Torcaza cuellimorada	no
<i>Columbina passerina aflavida</i>	Tojosa	no
<i>Contopus caribaeus caribaeus</i>	Bobito chico	yes
<i>Crotophaga ani</i>	Judío	no
<i>Dendrocygna arborea</i>	Yaguasa	no
<i>Dendrocygna bicolor</i>	Yaguasín	no
<i>Dendroica cerulea</i>	Bijirita azulosa	no
<i>Dendroica discolor discolor</i>	Bijirita	no
<i>Dendroica palmarum palmarum</i>	Bijirita común	no
<i>Dendroica petechia gundlachi</i>	Canario de manglar	no
<i>Dives atrovioleaceus</i>	Totí	yes
<i>Dolichonyx oryzivorus</i>	Chambergo	no
<i>Egretta caerulea</i>	Garza azul	no
<i>Egretta rufescens colorata</i>	Garza morada	no
<i>Egretta thula thula</i>	Garza real	no
<i>Egretta tricolor ruficollis</i>	Garza de vientre blanco	no
<i>Eudocimus albus</i>	Coco blanco	no
<i>Falco peregrinus anatum</i>	Halcón de patos	no
<i>Falco sparverius sparveriodes</i>	Cernícalo	yes
<i>Fregata magnificens</i>	Rabihorcado	no
<i>Fulica americana americana</i>	Gallareta de pico blanco	no
<i>Gallinula chloropus cerceris</i>	Gallareta de pico colorado	no
<i>Glaucidium siju siju</i>	Sijú platanero	yes
<i>Himantopus mexicanus</i>	Cachiporra	no
<i>Icterus dominicensis melanopsis</i>	Solibio	yes
<i>Jacana spinosa spinosa</i>	Gallito de río	no
<i>Larus argentatus smithsonianus</i>	Gallego	no
<i>Larus atricilla</i>	Galleguito	no
<i>Melanerpes superciliaris</i> ssp.	Carpintero jabado	no
<i>Melopyrrha nigra nigra</i>	Negríto	yes
<i>Mimus polyglottos orpheus</i>	Sinsonte	no
<i>Mniotilta varia</i>	Bijirita trepadora	no
<i>Numida meleagris galeata</i>	Guinea	no
<i>Nyctanassa violacea</i>	Guanabá real	no
<i>Nycticorax nycticorax hoactli</i>	Guanabá de la Florida	no
<i>Oxyura dominica</i>	Pato agostero	no

<i>Pandion haliaetus ridgwayi</i>	Guincho	no
<i>Parula americana</i>	Bijirita chica	no
<i>Passer domesticus domesticus</i>	Gorrión	no
<i>Pelecanus occidentalis occidentalis</i>	Alcatraz	no
<i>Phalacrocorax auritus floridanus</i>	Corúa de mar	no
<i>Phalacrocorax brazilianus</i>	Corúa de agua dulce	no
<i>Phoenicopterus ruber ruber</i>	Flamenco	no
<i>Plegadis falcinellus falcinellus</i>	Coco prieto	no
<i>Polyborus plancus audubonii</i>	Caraira	no
<i>Porphyryla martinica</i>	Gallareta azul	no
<i>Priotelus temnurus temnurus</i>	Tocororo	yes
<i>Quiscalus niger gundlachi</i>	Chichinguaco	yes
<i>Rallus elegans ramsdeni</i>	Gallinuela de agua dulce	yes
<i>Rallus longirostris caribaeus</i>	Gallinuela de manglar	no
<i>Rostrhamus sociabilis levis</i>	Gavilán caracolero	yes
<i>Saurothera merlini merlini</i>	Arriero, Guacaica	yes
<i>Seiurus motacilla</i>	Señorita de río	no
<i>Seiurus noveboracensis</i>	Señorita de manglar	no
<i>Setophaga ruticilla ruticilla</i>	Candelita	no
<i>Sphyrapicus varius varius</i>	Carpintero de paso	no
<i>Spindalis zena pretrei</i>	Cabrero	yes
<i>Sturnella magna hippocrepis</i>	Sabanero	yes
<i>Tachybaptus dominicus dominicus</i>	Zaramagullón chico	no
<i>Tiaris canora</i>	Tomeguín del pinar	yes
<i>Tiaris olivacea olivacea</i>	Tomeguín de la tierra	no
<i>Todus multicolor</i>	Cartacuba	yes
<i>Turdus plumbeus schistacea</i>	Zorzal real	yes
<i>Tyrannus dominicensis dominicensis</i>	Pitirre abejero	no
<i>Tyto alba furcata</i>	Lechuza	no
<i>Xiphidiopicus percussus ssp.</i>	Carpintero verde	yes
<i>Zenaida asiatica asiatica</i>	Paloma aliblanca	no
<i>Zenaida aurita zenaida</i>	Guanaro	no
<i>Zenaida macroura macroura</i>	Paloma rabiche	no

Total: 105

Mammals

<i>Capromys pilorides ssp.</i>	Jutía conga	no
<i>Felis catus</i>	Gato jíbaro	no
<i>Canis familiaris</i>	Perro jíbaro	no
<i>Mus musculus brevirostris</i>	Guayabito	no
<i>Trichechus manatus manatus</i>	Manatee, vaca marina	no x
<i>Bos taurus</i>	Bull, cow	no
<i>Noctilio leporinus ssp.</i>	Bat	no