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BirdLife International is a UK-registered charity No. 1042125
ISBN: 978-9942-9959-0-2

Recommended citation: DEVENISH, C., DÍAZ FERNÁNDEZ, D. F., CLAY, R. P., DAVIDSON, I. & YÉPEZ ZABALA, I. Eds. (2009) *Important Bird Areas Americas - Priority sites for biodiversity conservation*. Quito, Ecuador: BirdLife International (BirdLife Conservation Series No. 16).

To cite this chapter: CARTES, J. L. & CLAY, R. P. (2009) Paraguay. Pp 297 – 306 in C. Devenish, D. F. Díaz Fernández, R. P. Clay, I. Davidson & I. Yépez Zabala Eds. *Important Bird Areas Americas - Priority sites for biodiversity conservation*. Quito, Ecuador: BirdLife International (BirdLife Conservation Series No. 16).

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Edition of Spanish language country chapters: Ítala Yépez Zabala, Carlos Huertas Sánchez & David F. Díaz Fernández
Graphic design volunteer (Spanish language country chapters): Adriana Valencia Tapia
Printed in Ecuador by Poligráfica C.A.

This publication and all country/territory chapters in their native languages are available for download at www.birdlife.org/

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PARAGUAY

José L. Cartes & Rob P. Clay





Country facts at a glance

Area:	406,752 km ²
Population (2006):	6,009,143
Capital:	Asunción
Altitude:	0–842 m
Number of IBAs:	57
Total IBA area:	3,326,874 ha
IBA coverage of land area:	8.4%
Total number of birds:	710
Globally threatened birds:	27
Globally threatened birds in IBAs:	22
Country endemics:	1

General introduction

The Republic of Paraguay is a landlocked country, located in the center of South America, bordering Argentina, Brazil and Bolivia. According to a 2006 census, 6 million people inhabit the country, giving an average population density of 10.2 people/km² (DGEEC 2006). The River Paraguay divides the country into two natural regions: the eastern (*Oriente*) and western (*Chaco*) region. The eastern region, where Paraguay's capital, Asunción, is located, represents 39% of the country but contains 97% of the population.

Paraguay is an independent and unitarian republic with democratic elections held every five years. The country is divided into 17 administrative *departamentos* (departments) and 218 districts. The population principally consists of mixed race or *mestizo* descendants of Spanish and indigenous inhabitants as well as 17 different indigenous groups living in 414 communities. There are also immigrants from several countries, the majority coming from Brazil, Argentina, Germany and Italy, among others. Paraguay is one of the few countries in the region maintaining the use of its native tongue (Guarani) as an official language (and the only officially bilingual country), spoken by both indigenous and non-indigenous inhabitants.

Paraguay's social context has been profoundly marked by two devastating wars and a subsequent maintenance of social structures that lead to significant poverty and underdevelopment. The most serious indicator of this situation is the inequality in land distribution, with more than 95% of land privately owned and therefore dependent on free market laws which has led to large areas coming under the control of foreign investors. Paraguay remains a impoverished country in terms of equal opportunities for social development in addition to having serious deficiencies in issues such as education, health and security, all of which present significant challenges for the conservation of natural resources.

Paraguay has a subtropical to tropical climate, with average temperatures oscillating between 22 °C in the south and 26 °C in the north. Rainfall is generally concentrated in the austral summer and reaches an annual maximum



More than 260 species have been recorded at Bahía de Asunción (PY024), located within the city limits of Paraguay's capital. The IBA protects globally important populations of the Near Threatened Buff-breasted Sandpiper (*Tryngites subruficollis*) during its migration.
Photo: Regis Nosset

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of 1800 mm in the southeast, descending gradually to 700 mm in the northwest.

The convergence of five ecoregions in Paraguay gives rise to a wealth of biodiversity. The five ecoregions are, from north to south, Gran Chaco, Pantanal, Cerrado, Atlantic Forest and Mesopotamian Grasslands. It is difficult to find a region in Paraguay which is not a complex of at least two different ecoregions, providing the country with large ecotones (Hayes 1995, Guyra Paraguay 2008). All five ecoregions are considered of great conservation value (Olson & Dinerstein 2002, Mittermeier *et al.* 1999, Dinerstein *et al.* 1995) and hold many globally threatened species. The Atlantic Forest and Cerrado are both considered “Hotspots” for biodiversity conservation, due to their outstanding concentrations of endemic species combined with an exceptional loss of habitat (Myers *et al.* 2000), while the Gran Chaco and Pantanal have been defined as two of the last Wilderness Areas due to their relatively intact state, rich biodiversity and low human population density (Mittermeier *et al.* 2002). Sanderson *et al.* (2002) also identified the north of the Paraguayan Chaco and Bolivia as one of the greatest conservation units for the jaguar (*Panthera onca*).



Jaguars (*Panthera onca*) thrive in the north of the Paraguayan Chaco. Photo: Emily Y. Horton

Conservation and protected area system



The establishment of protected areas in Paraguay began in 1948 with the creation of the small reserve of Cerro Lambaré under the concept of protected landscapes associated with roads. In 1966, the first national park was created at Tinfunqué with the pretext of protecting historic sites. The subsequent creation of parks under a strict protectionist concept continued until 1990 with the designation of 13 parks covering an area of 11,800 km². After 1990, the National System of Protected Wilderness Areas (SINASIP) was structured and consolidated by means of Law 352/94. As part of this process, two main limitations of the national park system were identified: a lack of implementation of many parks and shortcomings in ecoregional representation at a national level (DPNVS-FMB 1993, DPNVS 1998). These shortcomings were corrected to a certain extent with SINASIP, including an analysis of potential protected areas and the establishment of technical criteria for implementation of protected areas and their conservation categories. The new system included three sub-systems for protected area administration: state areas, areas belonging to binational hydroelectric companies and private areas. However, several difficulties remain in the implementation of this system, including a conflict of interest between indigenous communities and SINASIP regarding the relationship between protected areas and indigenous territories, incorporating conservation categories into regional planning processes, effective implementation

of protected areas and their monitoring, and inadequate management processes for protected areas.

Paraguay has signed the majority of international environmental agreements established for conservation and sustainable development, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Convention on Biological Diversity, Convention on Migratory Species, Ramsar Convention on Wetlands, UN Framework Convention on Climate Change and the Convention for the Protection of Flora, Fauna and Natural Scenic Beauties of America. All these agreements have been ratified and approved by law. However, in the majority of cases, the degree of compliance and commitment to the agreements is low, reflected in sanctions being imposed on the Paraguayan state.

National laws have also been passed with a view to meeting obligations

“Buff-breasted Sandpiper regularly occurs at the Bahía de Asunción in globally significant numbers.”



Lagunas Saladas - Riacho Yacaré (PY010) includes Chaco Lodge Ramsar site and has been proposed as a national park. The site was recognized as high conservation priority within SINASIP (see text). Photo: Hugo Cabral

in one or more of the above international agreements, such as the law on “Protected Wilderness Areas”. Within this system, international categories such as Biosphere Reserves are included as national categories, comparable to IUCN category VI. For example, three Biosphere Reserves have been declared in Paraguay at national level (Chaco, Bosque Mbaracayú and Cerrado del Río Apa) although just the first two have been recognized by UNESCO. Both these vast areas contain several IBAs (see IBA overview).



Río Negro - Pantanal (PY005) was declared a Ramsar site in 1995 and a biosphere reserve in 2001.
Photo: Silvia Centrón

Other areas under special designation include Ramsar sites and the Western Hemisphere Shorebird Reserve Network (WHRSN). Six Ramsar sites have officially been declared in Paraguay, totaling 785,970 ha. Recently, Bahía de Asunción (PY024) and the Reserva Ecológica del Banco San Miguel were included in WHRSN as a site of “Regional Importance” for Buff-breasted Sandpiper (*Tryngites subruficollis*) which frequents the site in globally significant numbers during its southbound migration.

Ornithological importance



Paraguay’s location at the confluence of five major ecoregions results in a high avian diversity, with just over 700 species recorded (Guyra Paraguay 2004, Smith & Clay 2008). While this is less than many other Neotropical countries, it is considerably more than similar-sized areas in neighboring countries.

In total, 27 globally threatened birds have been documented in Paraguay, along with an additional 32 Near Threatened species (BirdLife International 2007). Of these, five are considered as possibly extirpated in the country (Dwarf Tinamou; *Taoniscus nanus* VU, Brazilian Merganser; *Mergus octosetaceus* CR, Mantled Hawk; *Leucopternis polionotus* NT, Eskimo Curlew; *Numenius borealis* CR and Glaucous Macaw; *Anodorhynchus glaucus* CR). Paraguay is particularly important for populations of the Endangered White-winged Nightjar (*Eleothreptus candicans*; two of only three globally-known populations), several threatened Atlantic Forest species (such as Black-fronted Piping-guan; *Pipile jacutinga* EN, Helmeted Woodpecker; *Dryocopus galeatus* VU, Russet-winged Spadebill; *Platyrinchus leucorhynchus* VU and Bare-throated Bellbird; *Procnias nudicollis* VU) and Cerrado and grassland species, including the only population of Lesser Nothura (*Nothura minor* VU) found outside of Brazil. The grasslands of southern Paraguay are a stronghold for populations of Ochre-breasted Pipit (*Anthus nattereri* VU), various “capuchino” or *Sporophila* seedeaters of conservation concern, and Saffron-cowled

Black-fronted Piping-guan
(*Pipile jacutinga*)
Photo: José Luis Cartes

White-winged Nightjar
(*Eleothreptus candicans*)
Photo: Rob Pople

Sharp-tailed Tyrant
(*Callicivora caudacuta*)
Photo: Arne J. Lestehuis



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Blackbird (*Xanthopsar flavus* VU). Paraguay is believed to hold over 50% of the global population of the latter species (Clay *et al.* 2003). Wetlands throughout eastern Paraguay are important stopover sites during the migration of these “capuchino” seedeaters between their breeding areas in northern Argentina and southern Paraguay and their largely unknown wintering areas in central Brazil.

Being a country of ecotones, and with its ecoregions shared with neighboring countries, just one bird species, of somewhat dubious taxonomic validity, is endemic to Paraguay: Chaco Nothura (*Nothura chacoensis*). There are also relatively few restricted-range species; 10 have been documented in the country, corresponding to three Endemic Bird Areas (Stattersfield *et al.* 1998): Atlantic forest lowlands (EBA 075; six species), Atlantic forest mountains (EBA 076; one species, which only occurs as a vagrant), and the Argentine Mesopotamian grasslands (EBA 077; three species). There is, however, a rich diversity of biome-restricted species, with 104 species distributed in four biomes: 73 in Atlantic Forest (ATL), nine in Cerrado (CER), 10 in Pampas (PAM) and 18 in Chaco (CHA). While the first three biomes reach their limits within Paraguay, the country holds some of the best preserved areas of the Chaco (both humid and dry).

“Additional fieldwork will undoubtedly reveal new IBAs for congregatory waterbird species.”

Over 140 migratory species have been recorded in Paraguay, or 20% of the Paraguayan avifauna. Of these, 40 species are Neotropical (North American breeding) migrants, 100 Austral migrants (breeding

in Paraguay or to the south of Paraguay and migrating north during the austral winter) and two species (American Swallow-tailed Kite; *Elanoides forficatus* and Peregrine Falcon; *Falco peregrinus*) have both Nearctic and Austral breeding populations which occur in Paraguay (Guyra Paraguay 2008; A. Lesterhuis & R. Clay unpub. data). The north-south axis of the Paraguay River is an important migration corridor for many species, as is, to a lesser extent, the Parana River. Approximately 30% of the country comprises wetlands, many associated with these major river systems, and the avifauna is correspondingly rich in waterbirds (some 16% of the avifauna; Clay *et al.* 2004), with globally significant numbers of several species. Additional fieldwork will undoubtedly reveal new IBAs for congregatory waterbird species.



Globally important congregations of Jabiru (*Jabiru mycteria*) meet IBA criteria at Río Negro - Pantanal (PY005).
Photo: Silvia Centrón

IBA overview

Identification of IBAs in Paraguay began with the declaration of Latin America's second IBA, San Rafael, in 1997. Nevertheless, the program's subsequent development was gradual and cautious, in the sense that areas were not declared without sufficient institutional backing to be able to initiate a strategic conservation plan for each site. Therefore, it was not until 2003 that a sizeable database had been compiled on sites and associated bird species, which served as the basis for an IBA meeting at the first National Ornithological Workshop in 2004. A year later, with the support of the Ministry of the Environment, the identification and confirmation process culminated with the declaration of 57 IBAs of global importance, later published as a national IBA directory by Guyra Paraguay in 2008 (Table 1, Figure 1).

IBAs in Paraguay cover 3,326,874 ha or 8.2% of the country's area, with good ecoregional representation except in the Humid Chaco (as opposed to Dry Chaco) and the Atlantic Forest (Table 2). Most of the latter ecoregion has been deforested in the country. With regard to meeting IBA criteria, 54 sites meet criterion A1 (birds of conservation

“The IBA program developed gradually, allowing sufficient institutional backing to initiate a strategic conservation plan for each site.”

concern), covering 22 of 27 species of globally threatened birds and 23 species of Near Threatened birds. Three IBAs include Critically Endangered birds, although Purple-winged Ground-dove (*Claravis godefrida*) is represented in just one site. Two Vulnerable species are also covered by just one site in Paraguay, Buffy-fronted Seedeater (*Sporophila frontalis*) and Lesser Nothura (*Nothura minor*). In contrast, 16 sites have been confirmed for the Vulnerable Bare-throated Bellbird (*Procnias nudicollis*), 10 sites hold five or more threatened species and three sites have 10 or more (Parque Nacional San Rafael; PY046, Bosque Mbaracayú; PY030, Tapyta; PY045).

Table 1. Important Bird Areas in Paraguay

IBA code	IBA name	Adm unit	Area (ha)	A1				A2	A3	A4			
				CR	EN	VU	NT			A4i	A4ii	A4iii	A4iv
PY001	Parque Nacional Médanos del Chaco	Boquerón	534,287	1		2		X					
PY002	Parque Nacional Defensores del Chaco	Alto Paraguay	713,250				3	X					
PY003	Parque Nacional Teniente Enciso	Boquerón	41,265	1				X					
PY004	Pozo Hondo	Boquerón	15,396				2	X					
PY005	Río Negro - Pantanal	Alto Paraguay	211,025							X			X
PY006	Estancia Gran Siete	Boquerón	64,847	1		2		X					
PY007	Fortín Toledo	Boquerón	23,811				2	X					
PY008	Pirizal	Boquerón	150,645					X					
PY009	Laguna Ganzo	Presidente Hayes	477	1		2				X			
PY010	Lagunas Saladas - Riacho Yacaré	Presidente Hayes	23,351				1	X	X				X
PY011	Parque Nacional Tinfunqué - Estero Patiño	Presidente Hayes	487,747				5	X	X				X
PY012	Estancia Estrella	Concepción	10,954	1			2						
PY013	Cerrados de Concepción	Concepción	129,805	1	3	4			X				
PY014	Arroyo Tagatiya	Concepción	31,566		2	3			X				

IBA code	IBA name	Adm unit	Area (ha)	A1				A2	A3	A4				
				CR	EN	VU	NT			A4i	A4ii	A4iii	A4iv	
PY015	Estancia Santa Asunción	Presidente Hayes	4,535	1										
PY016	Río Negro - Bajo Chaco	Presidente Hayes	18,923											X
PY017	Arroyo Blanco	Amambay	7,672			2	3			X				
PY018	Cerro Guazú	Amambay	8,668	1	1	2				X				
PY019	Ypané Medio	San Pedro	37,042			2	4			X				
PY020	Estancias Golondrina - El Trébol	Presidente Hayes	18,007	2	1	4								
PY021	Cerrado de Laguna Blanca	San Pedro	2,449	3	5					X				
PY022	Estancia La Rafaela	Presidente Hayes	36,160			2								
PY023	Paso Curuzú	San Pedro	54,976	1	3	6								
PY024	Bahía de Asunción	Asunción	522				1							X
PY025	Arroyos y Esteros	Cordillera	166,775	1	2									
PY026	Estancia Felicidad	Canindeyú	3,649			2								
PY027	Estancia Sombrero	Cordillera	7,809	1	4									
PY028	Lago Ypoa	Paraguarí	122,426			3								
PY029	Estancia Redondo	Ñeembucú	5,959			1								
PY030	Bosque Mbaracayú	Canindeyú	64,634	3	9	9		X	X					
PY031	Ka'aguy Rory	Caaguazú	14,961		2	7				X				
PY032	Morombi	Caaguazú	32,398	1	5	6		X	X					
PY033	Serranías de San Joaquín	Caaguazú	12,242		3	7				X				
PY034	Campo Llano	Misiones	33,105	1	2			X	X					
PY035	Ybyturuzú	Guairá	25,571	1	2	6		X	X					
PY036	Estancia Itabó	Canindeyú	4,810	1	1	3	10	X	X					
PY037	Estancia La Graciela	Misiones	11,531			3								
PY038	Refugio Carapá	Canindeyú	3,658		1	2				X				
PY039	Ypetí	Caazapá	13,594				8	X	X					
PY040	Limoy	Alto Paraná	13,392	1	3	5				X				
PY041	Reserva Itabó - Itaipú	Alto Paraná	11,310	1	3	6				X				
PY042	Parque Nacional Caazapá	Caazapá	13,323	1	3	12		X	X					
PY043	Arrozal Codas	Caazapá	1,235			1								X
PY044	Yabebyry	Misiones	31,865			3								
PY045	Tapyta	Caazapá	6,032	2	9	8		X	X					X
PY046	Parque Nacional San Rafael	Itapúa	71,192	2	10	13		X	X					X
PY047	Esteros Cabacúa	Caazapá	681			1								X
PY048	La Yegreña	Itapúa	6,864			1								
PY049	Esteros Ñu Guazú - General Artigas	Itapúa	3,983	1		4		X	X					
PY050	Esteros Kuruñai	Itapúa	1,461			1								X
PY051	Isla Yacyretá	Misiones	4,983	1	3									
PY052	Estancia Don Oscar	Alto Paraná	7,736			1	6			X				
PY053	Esteros San José	Itapúa	650			2								X
PY054	San Miguel Potrero	Itapúa	498	1	3									X
PY055	Esteros Ypyta	Itapúa	643			2								X
PY056	Arroyo Tymaca	Itapúa	254			1								X
PY057	Esteros de San Mauricio	Itapúa	270			1								X



For information on trigger species at each IBA, see individual site accounts at BirdLife's Data Zone: www.birdlife.org/datazone/sites/



Careful management of rice fields and other crops could turn threats associated with agriculture into opportunities for species such as the Vulnerable Safron-cowled Blackbird (*Xanthopsar flavus*), for example at Estancia La Graciela (PY037). Photo: Silvia Centrón

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Table 2. Ecoregion representation in IBAs

Ecoregion	IBA area (km ²)	Total ecoregion area in Paraguay (km ²) ¹	% Coverage
Atlantic Forest	4,177.98	83,642.91	5.0
Cerrado	1,723.25	15,574.35	11.1
Humid Chaco	8,610.53	99,928.99	8.6
Dry Chaco	15,673.31	175,515.21	8.9
Pantanal	2,110.25	3,172.21	66.5
Mesopotamian Grasslands	973.41	20,353.93	4.8

¹Figures represent original habitat cover.

Ten sites meet criterion A2 for restricted range species. Only nine restricted-range species have a regular presence in Paraguay (see Ornithological importance), all of which are represented in one or more IBA. The small number of sites meeting A2 criteria reflects the ecotonal nature of the country; it also means that only two IBAs meet all four criteria. A further ten meet three criteria simultaneously.

Thirty-one sites meet the A3 (biome-restricted species) criterion, applying to four biomes, with a total of 101 biome-restricted species

represented in IBAs. There are 16 sites for Atlantic Forest biome, five for Cerrado, nine for Chaco (here a significant component of 50% was employed due to many of these species being common and widely distributed in Paraguay - see Methods) and four for Pampas (which is the same as for EBA 077).

Sixteen IBAs meet A4 criteria for congregatory birds (six for A4i, 10 for A4ii and three for A4iii), of which only two IBAs were exclusively identified under these criteria. Half of the IBAs identified for A4i have more than one trigger species, with Lagunas Saladas (PY010) identified for seven congregatory species of waterbird.

Among the 57 IBAs, 25 sites are protected areas and 27 are unprotected. Some IBAs include several properties, including both protected and unprotected areas. In summary, 67% of the total IBA area (22,551 km²) is officially protected under a protected area category while the remaining 33% is without protection. However, this does not imply that areas are effectively protected due to the lack of implementation of the SINASIP and the serious difficulties confronting many protected areas (see Conservation and protected area system).

The 25 protected areas identified as IBAs (either wholly or in part)

Figure 1. Location of Important Bird Areas in Paraguay



include 10 of 16 national parks, four of seven independent reserves belonging to binational hydroelectric companies and nine of eleven private reserves. In terms of international conservation areas, seven IBAs are included in two biosphere reserves, El Gran Chaco (four IBAs) and El Bosque Mbaracayú (three IBAs). Furthermore, four of the six Ramsar sites in Paraguay are also IBAs (Lago Ypoa; PY028, Río Negro; PY005, Tinfunqué; PY011, and Chaco Lodge; PY010).

A total of 42 species of Neotropical migrants have been documented in Paraguay, of which Solitary Sandpiper (*Tringa solitaria*), Barn Swallow (*Hirundo rustica*) and Upland Sandpiper (*Bartramia longicauda*) are well represented in IBAs although they do not meet population thresholds as IBA trigger species. Other species meeting criteria and making use of IBAs as stopover sites include the Near Threatened Buff-breasted Sandpiper (*Tryngites subruficollis*) at Bahía de Asunción (PY024) and Wilson's Phalarope (*Steganopus*

[*Phalaropus*] *tricolor*) at Laguna Salada – Riacho Yacaré (PY010). The greatest numbers of Neotropical migrants have been recorded from Bahía de Asunción (PY024) and Laguna Salada – Riacho Yacaré (PY010) with 28 species from each. In terms of Austral migrants, 102 species have been identified, many of which are also present at sites.

An *a priori* exercise on threats faced by IBAs was carried out to provide baseline information for a later planning process. Eight active threats were identified at IBAs, of which the four principal, or first order, threats (current pressures or sources of pressure affecting sites in the short and medium term, in a sustained manner) were: deforestation (clear cutting) or changes in land use; squatting on private property or insecurity in land holdings; large-scale pollution (agrochemicals); and hunting (or over exploitation). In general terms, each IBA is affected by an average of three simultaneous threats.

Opportunities



Several positive experiences have resulted from recent conservation work within Paraguayan IBAs. These experiences are mainly related to awareness-raising (pride campaigns and strengthening of Local Conservation Groups), and rural development and GIS monitoring, in conjunction with national sustainable development policies.

“The IBA concept is not widely assimilated unless a practical form is found to relate the site’s conservation to local people’s wellbeing.”

Projects involving awareness raising have been implemented principally in three IBAs (Río Negro; PY005, San Rafael; PY046 and Reserva del Bosque Mbaracayú; PY030). Results show that the IBA concept is not widely assimilated unless a practical form is found to relate the site’s conservation to local people’s wellbeing. The most effective ways of achieving this were to identify local leaders (institutions and people), provide constant support and guidance and integrate educational activities as part of the projects. However, this process requires a relatively long period of time, with the proviso that voluntary work is available (Guyra Paraguay 2008).

As part of some of these projects, Local Conservation Groups were formed, including Eco Club Pantanal Paraguayo, the Aché indigenous

GIS training for Local Conservation Groups promotes IBA conservation

Box 1

One of the most innovating approaches to IBA conservation in Paraguay has been the use of Geographic Information Systems to monitor deforestation. Taking this approach a step further, Local Conservation Groups have been trained to use this technology, allowing Guyra Paraguay to develop regional, national and local projects, such as those outlined below.

In collaboration with other projects (e.g. GEF/UNDP funded project “Paraguay Silvestre”), training was provided for municipalities in the use and interpretation of GIS technology applied to basic landscape planning and control of forest fires. This proved very successful in San Rafael (PY046), where the Local Conservation Group (Promotores Ambientales de San Rafael) led an ambitious early warning program to prevent forest fires in this important IBA (Guyra Paraguay 2008).

As part of regional projects, an ecosystem GAP analysis was implemented using criteria developed by the US Geological Survey, NatureServe and The Nature Conservancy. IBAs were found to have a better coverage of ecosystems than protected areas. This information was used in Paraguay’s national report to the Convention on Biological Diversity, presented by the government at the eighth meeting of the Conference of the Parties in Curitiba, Brazil.

This capacity, as well as low cost technology (e.g. MODIS and CBERS images), has generated important opportunities to work at a national level, for example, monitoring deforestation in Paraguay’s Atlantic Forest (supported by WWF and the Paraguay Environment Department).



San Rafael National Park (PY046). Photo: Emily Y. Horton

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group “Koe Tuwy” and “Promotores Ambientales de San Rafael”. All groups share a common interest and a strong understanding of IBAs as areas representing more than just biodiversity conservation. In general, these groups began voluntarily (or in the case of Koe Tuwy, requesting Guyra Paraguay’s help) and gradually became involved in biological monitoring and other site management activities. Income generation has also become an important issue in terms of the self-sufficiency of these groups. This has led to the implementation of different strategies, including a community radio station to broadcast programs of social relevance (e.g. Eco Club and FM Bahía Negra Poty; Box 2), organic agricultural projects (e.g. Koe Tuwy) and nature tourism projects (e.g. in Río Negro and San Rafael). However, as can be expected, much time has to be invested before groups such as these can reach adequate levels of institutional maturity and efficiency, especially taking into account the serious educational shortcomings in the country.

IBAs have provided strong incentives to generate rural development projects within their buffer zones. Thus, several projects have begun in areas surrounding the IBAs of San Rafael, Reserva del Bosque Mbaracayú, Río Negro and several additional IBAs in the Atlantic Forest, funded by the Canadian International Development Agency, the Dutch Ministry of Foreign Affairs and DOEN Foundation. Projects in San Rafael and Mbaracayú acted as models to create joint ventures with Nature Canada (BirdLife co-partner in Canada), funded by the Canadian government. High levels of social investment, as part of

these projects, resulted in a more favorable opinion towards IBAs on the part of local people.

Three important areas for future work in Paraguay’s IBA program are outlined below, related to integrating an environmental agenda into productive landscapes and improving biological knowledge (Guyra Paraguay 2008):

- Improving or maintaining the state of conservation of the majority of IBAs in Paraguay necessarily entails working with the private sector, for example, with private conservation initiatives. However, pilot projects need to be developed with different types of agriculture (e.g. organic produce) to be able to provide monetary incentives to landowners.
- Local Conservation Groups have a great unexplored potential to further IBA conservation (Box 2). However, community conservation projects must be integrated with poverty reduction initiatives as well as cleaner production techniques and sustainable use or low impact activities (e.g. in tourism).
- Although there has been a notable increase in knowledge of flora and fauna in the country, there are still information gaps with respect to birds. These fall into three areas: population studies, popular science (improving knowledge of birds among the general public) and systematic monitoring of the state and condition of IBAs in Paraguay.

Box 2

Eco Club Pantanal’s local radio initiative provides income and raises awareness

Eco Club, a Local Conservation Group in Paraguay’s Pantanal, grew out of a volunteer based organization (many of whom are still of school age), working closely with Guyra Paraguay’s environmental education program.

In 2003, a project for the young people of Bahía Negra to create a community radio station was funded by the World Bank as part of its Development Fair. The group’s interest in creating a radio station was partly prompted by a lack of airtime for young people on rural stations. At the time, the village was one of the most isolated in the country. With support from Guyra Paraguay, Bahía Negra Poty FM was created,

named after a local Pantanal flower. The focus of initial broadcasts was to educate the community in issues of sustainable development.

Over the last six years, the radio station has arguably had the most important social impact of several conservation initiatives in the region. This is principally due to the fact that the radio has become a vital means of communication, for example, in sending personal messages in such an isolated region. Furthermore, the radio station is managed exclusively by members of Eco Club, creating a strong sense of belonging among local people. Thanks to this, Eco Club has received an income from donations towards its running.



Photo: Emily Y. Horton

Further information

Data sources

National IBA Directory:
Áreas Importantes para la Conservación de las Aves del Paraguay (Guyra Paraguay 2008).

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Acknowledgements

The IBA program in Paraguay would not have been possible without the direct or indirect support of a large number of people and institutions. We are particularly grateful to the following: Luis Amarilla, Cristina Morales (MNHNP), Cirilo Cabrera (MHNIB), Janet Hinshaw (UMMZ), John Bates (FMNH), Mark Robbins, Town Peterson, Kristof Zyskowski (KUNHM) for allowing us to consult collections or providing specimen data. Also to Matthias Scharr who compiled information from German authors. Other ornithologists and friends, national and international, who provided information from their own field observations include: Luis Amarilla, Julian Alonso, Luis Amarilla, Attila Bankovics, Hemme Batjes, Roger Barnes, Eustace Barnes, Rocío Barreto, Lucía Bartrina, John Bates, Marie de Bernard, Adam Betuel, Alejandro Bodrati, Dan Brooks, Thomas Brooks, Geoffrey Bromfield, Ian Burfield, Stuart Butchart, Clive Byers, Guillermo Caballero, Cirilo Cabrera, Hugo Cabral Beconi, Dave Capper, Hernán Casañas, Kristina Cockle, Eugenio Coconier, Mariano Codesido, Andrés Colmán, Colin Crook, Fay Enright, Richard Elsam, Jorge Escobar Argaña, Estela Esquivel, Nubia Etchevery, Rosalía Fariña, Mercedes Foster, Brian Field, Frank Fragano, Rosendo Fraga, Brian Gee, Angel Gómez, Alejandro González, Fernando González, Lars Hansen, Floyd Hayes, Charles Hesse, Janet Hinshaw, Rosalyn Irala, Richard Johnson, Alejandro Jurado, Juan Klavins, Corinne Kennedy, Ernesto Krauczuk, Frank Lambert, Arne Lesterhuis, Nancy López de Kolchalka, Bernabé López Lanús, James Lowen, Alberto Madroño Nieto, Juan Mazar Barnett, Mónica Montiel, Cristina Morales, Regis Nossent, Derek Onley, Duncan Orr-Ewing, Mark Pearman, David Pearson, Marisol Pecci, Carolina Pedrozo, Nelson Pérez, Mirna Perrens, Town Peterson, Rob Pople, Hernán Povedano, Claudio Prieto, Jane Reid, Rosalyn Renfrew, Robert Ridgely, Mark Robbins, Paul Scharf, Paul Smith, Dave Stejskal, Alfredo G. Stroessner, Joe Tobias, Myriam Velázquez, Sergio Villanueva, Jon Vincent, Carmen Vitale, Bryan Wainwright, Sally Wechsler, Alberto Yanosky, Rodrigo Zárate, Rebecca Zarza and Kristof Zyskowski.

As well as the first author, the IBA program in Paraguay includes Oscar Rodas (GIS), Silvia Centrón (information management) as well as support from Hugo del Castillo, Alberto Esquivel, Juana de Egea, Elizabeth Cabrera and Leticia López.

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Southern Screamer (*Chauna torquata*) is present at Parque Nacional Tinfunqué - Estero Patiño (PY011) where waterbirds concentrate in numbers reaching 100,000 individuals.

Photo: Andrea Ferreira

Photo: Silvia Centrón