

Birds of Reserva Natural Laguna Blanca, departamento San Pedro, Paraguay and the imminent threats to their conservation

Las aves de la Reserva Natural Laguna Blanca, departamento San Pedro, Paraguay y las amenazas inminentes para su conservación

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Abstract

Objective: The results of several years of inventory work at Reserva Natural Laguna Blanca, departamento San Pedro, Paraguay are presented. **Results:** A total of 301 species are recorded from the reserve, with an additional 18 species known to occur in the catchment area, already declared an Important Bird Area. Thirty four species are reported for the first time in the reserve. **Conclusions:** The presence of breeding populations of a number of threatened Cerrado birds makes the long term conservation of this site a priority for conservation in Paraguay. However the protected status of the reserve officially ended in January 2015 and the imminent threats that this vitally important bird area faces are detailed.

Keywords: Cerrado, *Eleothreptus candicans*, IBA, Inventory, Grasslands.

Resumen

Objetivo: Se presentan los resultados de varios años de trabajos de inventario en la Reserva Natural Laguna Blanca, departamento San Pedro, Paraguay. **Resultados:** Un total de 301 especies de aves han sido registradas en la reserva, han sido comprobadas 18 más en la zona de amortiguamiento (oficialmente declarado un AICA). Treinta y cuatro especies se reportan por primera vez en la zona. **Conclusiones:** La presencia de poblaciones reproductivas de aves amenazadas del Cerrado indica que la conservación a largo plazo de esta reserva debe ser una prioridad para la conservación en Paraguay. Lamentablemente la protección legal de la reserva venció en enero 2015; detallamos las amenazas inminentes que enfrenta esta área única en el país para la conservación de las aves de la región.

Palabras clave: AICA, Cerrado, *Eleothreptus candicans*, Inventario, Pastizales.

Introduction

The vast Cerrado savannas of South America stretch from central Brazil into eastern Bolivia, reaching their southern extent in northern Paraguay. However despite an original coverage of approximately 1.5-1.8 million km², habitat alteration due to conversion to agriculture has been severe. More than two-thirds of the Brazilian Cerrado has been converted to agriculture (Cavalcanti and Joly 2002) and some estimates suggest that at the current rate of alteration the total destruction of Cerrado will occur by 2030 (Machado *et al.* 2004).

The Cerrado is a varied habitat consisting of open,

semi-open and forested physiognomies, resulting in a rich and complex avian community dynamic in which multiple species depend on different microhabitat types for different ecological functions (Pirattelli and Blake 2006). Broadly speaking the Cerrado habitat can be split into four categories or "ecotopes": *campo limpio* (grassy field), *campo sucio* (grassy and bushy fields with scattered trees), *sensu stricto* (bushy fields without grass) and *cerradón* (Cerrado dry forest). These ecotopes represent observable trends in habitat types and are not associated with any specific floral communities, which may vary greatly in any given ecotope from one area to another (Eiten 1972, 1978). Floral and faunal diversity within any given

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patch of the Cerrado is associated with the diversity of ecotopes rather than the total area of habitat (Colli *et al.* 2002, Nogueira *et al.* 2005). Retaining of habitat variability in this mosaic environment is thus crucial to the maintenance of a healthy ecosystem and its loss, or simplification, leads to a decrease in bird community functionality and ultimately local extinction (Batalha *et al.* 2010).

The southern limits of the Cerrado zone are in Paraguay (approximately 17,000 km²) and are marked by a mosaic of transition to Atlantic Forest in the south and east, and to Chaco in the west. Patches of Paraguayan Cerrado occur in Amambay, Canindeyú, Concepción and San Pedro Departments in the Oriental region and in Alto Paraguay Department in the Chaco region (Mereles 2013). The conservation situation in Paraguay is only slightly better than Brazil, with Cerrado areas in three national parks (Cerro Corrá, Paso Bravo and Serranía de San Luis) and two major private reserves (Mbaracayú Forest Reserve, Reserva Natural Laguna Blanca). However deficiencies in the national protected areas network, insufficient government funds for conservation and the financial burdens faced by landowners within the private reserve system mean that in practice such reserves receive only nominal protection.

The importance of the private Cerrado reserve Reserva Natural Laguna Blanca (RNLB) in Departamento San Pedro to Paraguayan biodiversity was recognized with its declaration as the focal point of an Important Bird Area (IBA PY021- Guyra Paraguay 2008) inspired by the high numbers of globally and nationally threatened bird species that it harbors (Table 1). It has also been proposed as the country's first Important Area for amphibians and reptiles on account of the extraordinary diversity present (Smith *et al.* in prep.). However, despite this the long term conservation of this unique area has never been consolidated and its official protected status ended in January 2015. Whether the area will continue to receive legal protection is now in doubt.

RNLB was last inventoried in November 2005, reporting 282 species (Smith *et al.* 2005), and thereafter morphometrics for 61 species captured in the reserve were provided by Smith *et al.* (2012) which included two further new records (Planalto Hermit and Band-tailed Manakin). Here we provide an updated list for the reserve with details on the current local

status of globally threatened species, document significant new records, and discuss the imminent threats that this small, but important reserve now faces.

Methodology

Reserva Natural de Laguna Blanca (S 23° 48', W 56° 17') in northern eastern Paraguay (Figure 1) is an 804 ha private reserve consisting of over 400 hectares of near pristine Cerrado, a patch of degraded Atlantic Forest and areas of transitional semi-deciduous, semi-humid gallery forest. The four main Cerrado ecotopes are present at RNLB and grow on a predominately sandy substrate (Eiten 1972, 1978) based around an eponymously-named freshwater lake of 157 ha which, geologically-speaking, is possibly the only true lake in Paraguay (Guyra Paraguay 2008). The lake is low-nutrient with a sandy bed, and bordered by tall, wet grassy vegetation, sandy beaches and gallery forest. The IBA includes the catchment area of the reserve, which encompasses a total of 2449 ha and the courses of several rivers and streams including Río Aguaray Guasu, Río Verde and Arroyo Clementina (Guyra Paraguay 2008). These waterways flood regularly in some areas to form extensive grassy marshes reminiscent of the vegetation of the Humid Chaco region. Agricultural areas on the outskirts of the reserve include Eucalyptus and soybean plantations, and cattle ranches.

Results are based on a compilation of records from published sources and the Para La Tierra and Guyra Paraguay Biodiversity databases, which contain data on field observations since the mid-1990s (when the site was first systematically visited by ornithologists). These records are supplemented by unsystematic observations from staff and volunteers at the Para La Tierra biological station, located permanently at the reserve since 2010.

Results

A total of 319 species have been recorded in the Laguna Blanca IBA, 34 of which are new records documented here. Of these 301 species are known to occur within the RNLB itself (Table 1).

Ten (plus 5 near-threatened) of the species inhabiting the reserve and its catchment area are of global conservation concern and 24 (plus 43 near-threate-

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca

Common name	Scientific name	Hab	Abun	Stat	End	Cons
Rheidae (1)						
Greater Rhea	<i>Rhea americana</i>	CL	U	R		NT/ NT
Tinamidae (6)						
Undulated Tinamou	<i>Crypturellus undulatus</i>	CD, GF	C	R		
Small-billed Tinamou	<i>Crypturellus parvirostris</i>	CD, GF	U	R		
Tataupa Tinamou	<i>Crypturellus tataupa</i>	CD, GF, AT	C	R		
Red-winged Tinamou	<i>Rhynchotus rufescens</i>	CL, CS, SS	C	R		
Lesser Nothura	<i>Nothura minor*</i>	CS	R	R	CE	VU/CR
Spotted Nothura	<i>Nothura maculosa</i>	CL, CS, SS	C	R		
Anatidae (5)						
White-faced Whistling-duck	<i>Dendrocygna viduata</i>	AQ	R	O		
Ringed Teal	<i>Callonetta leucophrys</i>	AQ	1	O		
Brazilian Duck	<i>Amazonetta brasiliensis</i>	AQ	U	R		
Rosy-billed Pochard	<i>Netta peposaca</i>	AQ	R	O		
Masked Duck	<i>Nomonyx dominicus</i>	AQ, MA	1	O		
Cracidae (1)						
Rusty-margined Guan	<i>Penelope superciliaris</i>	GF, AT	U	R		LC/NT
Odontophoridae (1)						
Spot-winged Wood-quail	<i>Odontophorus capueira*</i>	AT	R	R	AF	LC/VU
Podicipedidae (3)						
Least Grebe	<i>Tachybaptus dominicus</i>	AQ, MA	U	R		
Pied-billed Grebe	<i>Podilymbus podiceps</i>	AQ, MA	U	R		
Great Grebe	<i>Podiceps major</i>	AQ	1	V		
Ciconiidae (2)						
Maguari Stork	<i>Ciconia maguari</i>	AQ	R	O		
Wood Stork	<i>Mycteria americana</i>	AQ	R	O		
Phalacrocoracidae (1)						
Neotropical Cormorant	<i>Phalacrocorax brasilianus</i>	AQ	C	R		
Anhingidae (1)						
Anhinga	<i>Anhinga anhinga</i>	AQ	R	O		
Ardeidae (7)						
Rufescent Tiger-heron	<i>Tigrisoma lineatum</i>	AQ, MA	U	R		
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	AQ	R	R		
Striated Heron	<i>Butorides striata</i>	AQ, MA	U	R		
Cattle Egret	<i>Bubulcus ibis</i>	AG	U	R		
Great Egret	<i>Ardea alba</i>	AQ, MA	U	R		
Whistling Heron	<i>Syrigma sibilatrix</i>	AQ, AG	C	R		
Snowy Egret	<i>Egretta thula</i>	AQ, MA	U	R		
Threskiornithidae (4)						
White-faced Ibis	<i>Plegadis chihi</i>	AQ	1	O		
Bare-faced Ibis	<i>Phimosus infuscatus</i>	AQ, MA	R	O		
Buff-necked Ibis	<i>Theristicus caudatus</i>	AG	R	O		
Roseate Spoonbill	<i>Platalea ajaja</i>	AQ, MA	R	O		
Cathartidae (4)						
Turkey Vulture	<i>Cathartes aura</i>	AE	C	R		
Lesser Yellow-headed Vulture	<i>Cathartes burrovianus</i>	AQ, MA	U	R		
Black Vulture	<i>Coragyps atratus</i>	AE	C	R		
King Vulture	<i>Sarcoramphus papa</i>	AE	R	R		LC/NT
Pandionidae (1)						
Osprey	<i>Pandion haliaetus</i>	AQ	R	O		
Accipitridae (17)						
White-tailed Kite	<i>Elanus leucurus</i>	AG	R	O		
Pearl Kite	<i>Gampsonyx swainsonii</i>	CS	R	R		
Hook-billed Kite	<i>Chondrohierax uncinatus</i>	GF, AF	R	R		

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
Grey-headed Kite	<i>Leptodon cayanensis</i>	AF	R	R		
Swallow-tailed Kite	<i>Elanoides forficatus</i>	AE	U	P		LC/NT
Black-and-white Hawk-eagle	<i>Spizaetus melanoleucus*</i>	GF	R	O		
Snail Kite	<i>Rostrhamus sociabilis</i>	AQ, MA	U	P		
Rufous-thighed Kite	<i>Harpagus diodon</i>	GF, AT	R	S		LC/NT
Mississippi Kite	<i>Ictinia mississippiensis</i>	AE	R	P		
Plumbeous Kite	<i>Ictinia plumbea</i>	AE	U	S		
Long-winged Harrier	<i>Circus buffoni</i>	AQ, MA	R	R		
Crane Hawk	<i>Geranoospiza caeruleascens</i>	AQ, MA	R	O		
Savanna Hawk	<i>Buteogallus meridionalis</i>	CS	U	R		
Crowned Eagle	<i>Buteogallus coronatus</i>	CS	R	?		EN/VU
Roadside Hawk	<i>Rupornis magnirostris</i>	CD, GF, AT, AG	C	R		
White-tailed Hawk	<i>Geranoaetus albicaudatus</i>	CS, CL	C	R		
Zone-tailed Hawk	<i>Buteo albonotatus</i>	AE	R	O		
Aramidae (1)						
Limpkin	<i>Aramus guarauna</i>	AQ	1	R		
Rallidae (8)						
Giant Wood-rail	<i>Aramides ypecaha</i>	MA, AT	R	R		
Gray-necked Wood-rail	<i>Aramides cajaneus</i>	MA, AT	U	R		
Slaty-breasted Wood-rail	<i>Aramides saracura</i>	AT	U	R	AF	LC/NT
Ash-throated Crake	<i>Porzana albicollis</i>	AQ, MA	C	R		
Plumbeous Rail	<i>Pardirallus sanguinolentus</i>	AQ, MA	R	R		
Common Gallinule	<i>Gallinula galeata</i>	AQ	R	O		
Purple Gallinule	<i>Porphyrio martinicus</i>	AQ, MA	R	S		
Azure Gallinule	<i>Porphyrio flavirostris</i>	AQ, MA	R	S		
Charadriidae (3)						
American Golden-Plover	<i>Pluvialis dominica</i>	AQ	R	P		LC/NT
Southern Lapwing	<i>Vanellus chilensis</i>	AQ, CL, CS, AG	C	R		
Collared Plover	<i>Charadrius collaris</i>	AQ	R	P		
Recurvirostridae (1)						
Black-necked Stilt	<i>Himantopus mexicanus</i>	AQ	U	O		
Scolopacidae (9)						
Upland Sandpiper	<i>Bartramia longicauda</i>	AG	1	P		LC/NT
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	AQ	R	P		
Pectoral Sandpiper	<i>Calidris melanotos</i>	AQ	1	O		
Giant Snipe	<i>Gallinago undulata*</i>	CL, MA	U	R		LC/NT
South American Snipe	<i>Gallinago paraguaiae</i>	AQ, MA	U	R		
Spotted Sandpiper	<i>Actitis macularius</i>	AQ	R	P		
Solitary Sandpiper	<i>Tringa solitaria</i>	AQ	U	P		
Greater Yellowlegs	<i>Tringa melanoleuca</i>	AQ	R	P		
Lesser Yellowlegs	<i>Tringa flavipes</i>	AQ	1	O		
Jacanidae (1)						
Wattled Jacana	<i>Jacana jacana</i>	AQ, MA	U	R		
Laridae (4)						
Grey-headed Gull	<i>Chroiocephalus cirrocephalus</i>	AQ	1	V		
Yellow-billed Tern	<i>Sternula superciliaris</i>	AQ	R	O		
Large-billed Tern	<i>Phaetusa simplex</i>	AQ	R	O		
Common Tern	<i>Sterna hirundo</i>	AQ	1	V		
Rynchopidae (1)						
Black Skimmer	<i>Rynchops niger</i>	AQ	R	O		
Columbidae (9)						
Rock Pigeon	<i>Columba livia*</i>	AG	1	R		
Picazuro Pigeon	<i>Patagioenas picazuro</i>	GF, AT, CD	C	R		
Pale-vented Pigeon	<i>Patagioenas cayennensis</i>	GF, AT	U	R		

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
Eared Dove	<i>Zenaida auriculata</i>	CD, CS, GF, AG	C	R		
White-tipped Dove	<i>Leptotila verreauxi</i>	CD, GF, AT, AG	U	R		
Ruddy Ground Dove	<i>Columbina talpacoti</i>	AG	C	R		
Scaled Dove	<i>Columbina squammata</i>	CD, AG	C	R		
Picui Ground Dove	<i>Columbina picui</i>	AG	C	R		
Blue Ground Dove	<i>Claravis pretiosa</i>	GF, AT	U	R		
Cuculidae (7)						
Squirrel Cuckoo	<i>Piaya cayana</i>	GF, AF	C	R		
Dark-billed Cuckoo	<i>Coccyzus melacoryphus</i>	GF, AF	C	S		
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	GF	R	P		
Greater Ani	<i>Crotophaga major</i>	GF	U	R		
Smooth-billed Ani	<i>Crotophaga ani</i>	AQ, MA, AG	C	R		
Guira Cuckoo	<i>Guira guira</i>	AG	C	R		
Striped Cuckoo	<i>Tapera naevia</i>	CD, CS, SS, AG	U	R		
Tytonidae (1)						
Barn Owl	<i>Tyto alba</i>	CL, AG	R	R		
Strigidae (6)						
Tropical Screech-Owl	<i>Megascops choliba</i>	CD, GF, AT	C	R		
Black-capped Screech-Owl	<i>Megascops atricapilla*</i>	AT	1	R	AF	LC/NT
Ferruginous Pygmy-Owl	<i>Glaucidium brasilianum</i>	CD, GF, AT	C	R		
Burrowing Owl	<i>Athene cunicularia</i>	CS, CL, AG	C	R		
Striped Owl	<i>Pseudoscops clamator</i>	CS	R	R		
Short-eared Owl	<i>Asio flammeus</i>	CS, CL	R	R		
Nyctibiidae (2)						
Long-tailed Potoo	<i>Nyctibius aethereus*</i>	AT	1	R		LC/EN
Common Potoo	<i>Nyctibius griseus</i>	CD, CS	C	R		
Caprimulgidae (8)						
Nacunda Nighthawk	<i>Chordeiles nacunda</i>	CS, CL	U	W		
Short-tailed Nighthawk	<i>Lurocalis semitorquatus</i>	AE	C	S		
Common Pauraque	<i>Nyctidromus albicollis</i>	AT	C	R		
White-winged Nightjar	<i>Eleothreptus candicans*</i>	CS, CL, MA	U	R	CE	EN/EN
Little Nightjar	<i>Setopagis parvula</i>	CS, CD	C	R/S		
Spot-tailed Nightjar	<i>Hydropsalis maculicaudus*</i>	AT	1	R		LC/VU
Scissor-tailed Nightjar	<i>Hydropsalis torquata</i>	CS, CD	C	R/S		
Rufous Nightjar	<i>Anrostomus rufus</i>	CD, GF, AT	U	R		
Apodidae (1)						
Sick's Swift	<i>Chaetura meridionalis</i>	AE	U	S		
Trochilidae (8)						
Planalto Hermit	<i>Phaethornis pretrei</i>	MA	U	R		
Scale-throated Hermit	<i>Phaethornis eurynome</i>	AT	R	R	AF	LC/NT
White-tailed Goldenthrout	<i>Polytmus guainumbi</i>	MA	R	R		LC/NT
Black-throated Mango	<i>Anthracothorax nigricollis</i>	GF, AG	R	R		
Blue-tufted Starthroat	<i>Heliomaster furcifer</i>	AG	R	R		
Glittering-bellied Emerald	<i>Chlorostilbon lucidus</i>	CD, CS, GF, AT, AG	U	R		
White-throated Hummingbird	<i>Leucochloris albicollis</i>	AT	R	O	AF	
Gilded Hummingbird	<i>Hylocharis chrysura</i>	CD, CS, GF, AT, AG	C	R		
Trogonidae (2)						
Surucua Trogon	<i>Trogon surrucura</i>	GF, AT	C	R	AF	
Black-throated Trogon	<i>Trogon rufus</i>	AT	1	R		LC/NT
Alcedinidae (3)						
Ringed Kingfisher	<i>Megaceryle torquata</i>	AQ, MA	U	R		
Amazon Kingfisher	<i>Chloroceryle amazona</i>	AQ, MA	R	R		
Green Kingfisher	<i>Chloroceryle americana</i>	AQ, MA	R	R		
Momotidae (1)						
Rufous-capped Motmot	<i>Baryphthengus ruficapillus</i>	AT	C	R	AF	LC/NT

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Common name	Scientific name	Hab	Abun	Stat	End	Cons
Bucconidae (3)						
Buff-bellied Puffbird	<i>Notharchus swainsoni</i>	AT	U	R	AF	LC/VU
White-eared Puffbird	<i>Nystalus chacuru</i>	CS, SS	C	R		
Spot-backed Puffbird	<i>Nystalus maculatus</i>	CS, SS	U	R		
Ramphastidae (4)						
Toco Toucan	<i>Ramphastos toco</i>	CD, CS	U	R		
Red-breasted Toucan	<i>Ramphastos dicolorus</i>	AT	R	R	AF	LC/NT
Spot-billed Toucanet	<i>Selenidera maculirostris</i>	AT	R	R	AF	LC/VU
Chestnut-eared Aracari	<i>Pteroglossus castanotis</i>	AT, GF	U	R		
Picidae (10)						
White-barred Piculet	<i>Picumnus cirratus</i>	AT, GF	C	R		
White Woodpecker	<i>Melanerpes candidus</i>	CD, CS	C	R		
Little Woodpecker	<i>Veniliornis passerinus</i>	AT, GF	C	R		
Green-barred Woodpecker	<i>Colaptes melanochloros</i>	CD, GF	U	R		
Campo Flicker	<i>Colaptes campestris</i>	CD, CS, CL	C	R		
Pale-crested Woodpecker	<i>Celeus lugubris</i>	CD, GF	U	R		
Blonde-crested Woodpecker	<i>Celeus flavescens</i>	AT	R	R		LC/NT
Helmeted Woodpecker	<i>Celeus galeatus</i>	AT	1	R	AF	VU/VU
Lineated Woodpecker	<i>Dryocopus lineatus</i>	AT, GF	U	R		
Robust Woodpecker	<i>Campephilus robustus</i>	AT	R	R	AF	LC/VU
Cariamidae (1)						
Red-legged Seriema	<i>Cariama cristata</i>	CD, CS, AG	U	R		
Falconidae (9)						
Laughing Falcon	<i>Herpotheres cachinnans</i>	AT	R	R		
Barred Forest-Falcon	<i>Micrastur ruficollis</i>	AT	1	R		
Collared Forest-Falcon	<i>Micrastur semitorquatus</i>	AT	1	R		
Southern Caracara	<i>Caracara plancus</i>	CS, AG	U	R		
Yellow-headed Caracara	<i>Milvago chimachima</i>	CS, AG	U	R		
Chimango Caracara	<i>Milvago chimango</i>	CS, AG MA	U	R		
American Kestrel	<i>Falco sparverius</i>	CS, CL, SS, AG	C	R		
Bat Falcon	<i>Falco ruficularis</i>	AT	R	R		
Aplomado Falcon	<i>Falco femoralis</i>	CS, CL, SS,	C	R		
Psittacidae (9)						
Monk Parakeet	<i>Myiopsitta monachus</i>	AG	R	R		
Yellow-chevroned Parakeet	<i>Brotogeris chiriri</i>	AT, GF, AG	C	R		
Pileated Parrot	<i>Pionopsitta pileata</i>	AT	U	R	AF	LC/NT
Scaly-headed Parrot	<i>Pionus maximiliani</i>	AT, GF	U	R		
Turquoise-fronted Parrot	<i>Amazona aestiva</i>	AT, GF	U	R		LC/NT
Maroon-bellied Parakeet	<i>Pyrrhura frontalis</i>	AT, GF	C	R	AF	
Peach-fronted Parakeet	<i>Eupsittula aurea</i>	CD, CS	R	R		
Red-and-green Macaw	<i>Ara chloropterus</i>	AT	R	R		LC/EN
White-eyed Parakeet	<i>Psittacara leucophthalmus</i>	AT, GF	C	R		
Thamnophilidae (6)						
Great Antshrike	<i>Taraba major</i>	CD, GF	R	R		
Barred Antshrike	<i>Thamnophilus doliatus*</i>	AG	1	R		
Variable Antshrike	<i>Thamnophilus caerulescens</i>	AT	U	R		
Plain Antwren	<i>Dysithamnus mentalis</i>	AT	U	R		
Black-capped Antwren	<i>Herpsilochmus atricapillus</i>	AT	R	R		
Rusty-backed Antwren	<i>Formicivora rufa</i>	AT, GF	U	R		LC/NT
Conopophagidae (1)						
Rufous Gnateater	<i>Conopophaga lineata</i>	AT	U	R	AF	LC/NT
Furnariidae (11)						
Olivaceous Woodcreeper	<i>Sittasomus griseicapillus</i>	AT, GF	U	R		
Planalto Woodcreeper	<i>Dendrocolaptes platyrostris</i>	AT, GF	U	R		

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
White-throated Woodcreeper	<i>Xiphocolaptes albicollis</i>	AT, GF	R	R		LC/NT
Narrow-billed Woodcreeper	<i>Lepidocolaptes angustirostris</i>	CD	U	R		
Rufous Hornero	<i>Furnarius rufus</i>	AG	C	R		
Ochre-breasted Foliage-gleaner	<i>Anabacerthia lichtensteini</i>	AT	U	R	AF	
Greater Thornbird	<i>Phacellodomus ruber</i>	MA	R	R		
Yellow-chinned Spinetail	<i>Certhiaxis cinnamomeus</i>	MA	C	R		
Rufous-capped Spinetail	<i>Synallaxis ruficapilla</i>	AT	U	R	AF	LC/NT
Pale-breasted Spinetail	<i>Synallaxis albescens</i>	CS, SS	U	R		
Sooty-fronted Spinetail	<i>Synallaxis frontalis</i>	CD, AT	U	R		
Tyrannidae (51)						
Gray Elaenia	<i>Myiopagis caniceps</i>	AT	U	R		
Greenish Elaenia	<i>Myiopagis viridicata</i>	AT	U	R		
Yellow-bellied Elaenia	<i>Elaenia flavogaster</i>	AG	C	R		
Large Elaenia	<i>Elaenia spectabilis</i>	AT, AG	U	S		
White-crested Elaenia	<i>Elaenia albiceps</i>	CD	U	W		
Small-billed Elaenia	<i>Elaenia parvirostris</i>	CD, GF	U	R		
Lesser Elaenia	<i>Elaenia chiriquensis</i>	CD, CS, SS	U	S		
Highland Elaenia	<i>Elaenia obscura</i>	AT	R	R		
Southern Beardless-Tyrannulet	<i>Camptostoma obsoletum</i>	CD, CS	C	R		
Suiriri Flycatcher	<i>Suiriri suiriri</i>	CD	R	R		
Sooty Tyrannulet	<i>Serpophaga nigricans</i>	MA	R	O/W		
White-crested Tyrannulet	<i>Serpophaga subcristata</i>	AG	R	S		
White-bellied Tyrannulet	<i>Serpophaga munda</i>	AG	R	O/W		
Straneck's Tyrannulet	<i>Serpophaga griseicapilla</i>	AG	1	W		
Mouse-coloured Tyrannulet	<i>Phaeomyias murina</i>	CD	R	O/S		
Yellow Tyrannulet	<i>Capsiempis flaveola</i>	AT	U	R		LC/NT
Bearded Tachuri	<i>Polystictus pectoralis*</i>	CS, CL	R	R		NT/NT
Tawny-crowned Pygmy-tyrant	<i>Euscarthmus meloryphus</i>	CD	U	R		
Southern Bristle-Tyrant	<i>Phylloscartes eximius*</i>	AT	1	R	AF	NT/VU
Sepia-capped Flycatcher	<i>Leptopogon amaurocephalus</i>	AT	U	R		
Sharp-tailed Tyrant	<i>Culicivora caudacuta*</i>	CS, CL	U	R		VU/VU
Eared Pygmy-Tyrant	<i>Myiornis auricularis</i>	AT	U	R	AF	
Pearly-vented Tody-Tyrant	<i>Hemitriccus margaritaceiventer</i>	CD	C	R		
White-throated Spadebill	<i>Platyrinchus mystaceus</i>	AT	U	R		LC/NT
Bran-coloured Flycatcher	<i>Myiophobus fasciatus</i>	CD	U	R		
Euler's Flycatcher	<i>Lathrotriccus euleri</i>	AT	U	S		
Fuscous Flycatcher	<i>Cnemotriccus fuscatus</i>	AT, CD	U	S		
Tropical Pewee	<i>Contopus cinereus</i>	AT	R	S		LC/NT
Vermilion Flycatcher	<i>Pyrocephalus rubinus</i>	AG	U	W		
Spectacled Tyrant	<i>Hymenops perspicillatus*</i>	AQ	1	R		
Yellow-browed Tyrant	<i>Satrapa icterophrys</i>	CS	U	R		
Gray Monjita	<i>Xolmis cinereus</i>	CS	R	R		
White-rumped Monjita	<i>Xolmis velata</i>	CD, CS, CL, AG	C	R		LC/NT
Streamer-tailed Tyrant	<i>Gubernetes yetapa</i>	MA	U	R		
White-headed Marsh-Tyrant	<i>Arundinicola leucocephala</i>	MA	R	O		
Cock-tailed Tyrant	<i>Alectrurus tricolor*</i>	CS, CL	U	R		VU/EN
Long-tailed Tyrant	<i>Colonia colonus</i>	AT	R	R		
Cattle Tyrant	<i>Machetornis rixosa</i>	AG	C	R		
Social Flycatcher	<i>Myiozetetes similis</i>	GF, AG	C	R		
Great Kiskadee	<i>Pitangus sulphuratus</i>	AG	C	R		
Three-striped Flycatcher	<i>Conopias trivirgatus</i>	AT	R	O		LC/NT
Streaked Flycatcher	<i>Myiodynastes maculatus</i>	AT	U	S		
Boat-billed Flycatcher	<i>Megarynchus pitangua</i>	AT, AG	C	R		
Crowned Slaty-Flycatcher	<i>Empidonomus aurantioatrocristatus</i>	AG	R	O		

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
Tropical Kingbird	<i>Tyrannus melancholicus</i>	CS, AG	C	S		
Fork-tailed Flycatcher	<i>Tyrannus savana</i>	CS, AG	C	S		
Sibilant Sirystes	<i>Sirystes sibilator</i>	AT	R	R		
Rufous Casiornis	<i>Casiornis rufus</i>	CD, CS	U	R		
Swainson's Flycatcher	<i>Myiarchus swainsoni</i>	CD, AT	U	S		
Short-crested Flycatcher	<i>Myiarchus ferox</i>	CD, CS	U	R		
Brown-crested Flycatcher	<i>Myiarchus tyrannulus</i>	CD, CS	U	R		
Cotingidae (2)						
Red-ruffed Fruitcrow	<i>Pyroderus scutatus</i>	AT	R	R	AF	LC/VU
Bare-throated Bellbird	<i>Procnias nudicollis*</i>	AT	R	R	AF	VU/EN
Pipridae (1)						
Band-tailed Manakin	<i>Pipra fasciicauda</i>	CD, AT	U	R		
Tityridae (6)						
Black-crowned Tityra	<i>Tityra inquisitor</i>	AT, GF	U	R		
Black-tailed Tityra	<i>Tityra cayana</i>	AT, GF	U	R		
Masked Tityra	<i>Tityra semifasciata</i>	AT, GF	U	R		LC/VU
Greenish Schiffornis	<i>Schiffornis virescens</i>	AT	U	R	AF	LC/VU
Green-backed Becard	<i>Pachyramphus viridis</i>	GF	R	R		
Crested Becard	<i>Pachyramphus validus</i>	AT, GF	U	R		
Vireonidae (2)						
Rufous-browed Peppershrike	<i>Cyclarhis gujanensis</i>	AT, GF	U	R		
Red-eyed Vireo	<i>Vireo olivaceus</i>	AT, GF	C	S		
Corvidae (3)						
Purplish Jay	<i>Cyanocorax cyanomelas</i>	CD, GF	C	R		
Curl-crested Jay	<i>Cyanocorax cristatellus</i>	CD, CS, AG	C	R	CE	LC/VU
Plush-crested Jay	<i>Cyanocorax chrysops</i>	AT, GF	C	R		
Hirundinidae (8)						
Tawny-headed Swallow	<i>Alopochelidon fucata</i>	AE	U	R		
Southern Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>	AE	U	O		
Brown-chested Martin	<i>Progne tapera</i>	AE	U	R		
Grey-breasted Martin	<i>Progne chalybea</i>	AE	C	R		
White-rumped Swallow	<i>Tachycineta leucorrhoa</i>	AE	U	S		
Bank Swallow	<i>Riparia riparia</i>	AE	R	O		
Barn Swallow	<i>Hirundo rustica</i>	AE	U	S		
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	AE	U	O		
Troglodytidae (2)						
House Wren	<i>Troglodytes aedon</i>	AG	C	R		
Thrush-like Wren	<i>Campylorhynchus turdinus</i>	AG	U	R		
Poliptilidae (1)						
Masked Gnatcatcher	<i>Poliptila dumicola</i>	GF	1	R		
Donacobiidae (1)						
Black-capped Donacobius	<i>Donacobius atricapilla</i>	MA	U	R		
Turdidae (3)						
Pale-breasted Thrush	<i>Turdus leucomelas</i>	AT, GF	C	R		
Rufous-bellied Thrush	<i>Turdus rufiventris</i>	AT	R	R		
Creamy-bellied Thrush	<i>Turdus amaurochalinus</i>	AT, GF, AG	R	R		
Mimidae (2)						
Chalk-browed Mockingbird	<i>Mimus saturninus</i>	CS, AG	C	R		
White-banded Mockingbird	<i>Mimus triurus</i>	AG	R	P		
Motacillidae (1)						
Yellowish Pipit	<i>Anthus lutescens</i>	AG	C	R		
Thraupidae (31)						
Black-faced Tanager	<i>Schistochlamys melanopis</i>	CD	1	V		
Magpie Tanager	<i>Cissopis leverianus</i>	AT	R	R		

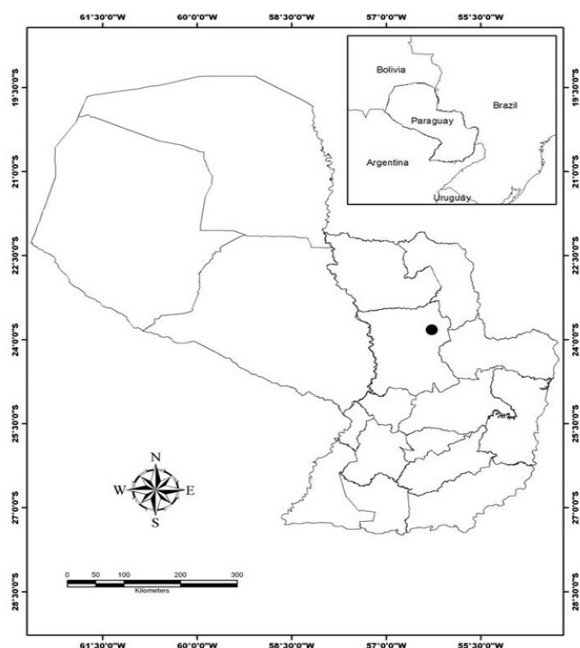
Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
White-banded Tanager	<i>Neothraupis fasciata</i>	CS, SS	C	R		NT/VU
Hooded Tanager	<i>Nemosia pileata</i>	CD, AT, GF	U	R		
Chestnut-headed Tanager	<i>Pyrrhocomma ruficeps</i>	AT	U	R	AF	LC/NT
White-rumped Tanager	<i>Cypsnagra hirundinacea</i>	CS, SS	C	R		LC/VU
Ruby-crowned Tanager	<i>Tachyphonus coronatus</i>	AT	U	R	AF	
Fawn-breasted Tanager	<i>Pipraeidea melanonota</i>	CD, AT, GF	U	W		
Sayaca Tanager	<i>Thraupis sayaca</i>	AT, GF, AG	C	R		
Burnished-buff Tanager	<i>Tangara cayana</i>	CS	R	O		
Swallow Tanager	<i>Tersina viridis</i>	AT	1	P		
Blue Dacnis	<i>Dacnis cayana</i>	AT, GF	C	R		
Guira Tanager	<i>Hemithraupis guira</i>	AT	U	R		
Chestnut-vented Conebill	<i>Conirostrum speciosum</i>	AT, GF	C	R		
Saffron Finch	<i>Sicalis flaveola</i>	AG	R	R		
Grassland Yellowfinch	<i>Sicalis luteola</i>	CL	1	O		
Wedge-tailed Grass-Finch	<i>Emberizoides herbicola</i>	CS, CL, SS	C	R		
Great Pampa-Finch	<i>Embernagra platensis*</i>	MA	U	R		
Blue-black Grassquit	<i>Volatinia jacarina</i>	CS, SS, CL, AG	C	R		
White-bellied Seedeater	<i>Sporophila leucoptera</i>	MA	R	R		
Pearly-breasted Seedeater	<i>Sporophila pileata</i>	CS	R	P		
Tawny-bellied Seedeater	<i>Sporophila hypoxantha</i>	MA	U	P		
Dark-throated Seedeater	<i>Sporophila ruficollis</i>	MA	R	P		NT/NT
Marsh Seedeater	<i>Sporophila palustris</i>	MA	1	P	MG	EN/EN
Chestnut Seedeater	<i>Sporophila cinnamomea</i>	CS, CL, MA	U	R	MG	VU/VU
Chestnut-bellied Seed-Finch	<i>Sporophila angolensis</i>	AT	U	R		
Double-collared Seedeater	<i>Sporophila caeruleascens</i>	CS, SS, CL, AG	C	R		
Plumbeous Seedeater	<i>Sporophila plumbea</i>	CS, SS, CL	U	R		LC/NT
Rusty-collared Seedeater	<i>Sporophila collaris</i>	MA	R	O		
Black-masked Finch	<i>Coryphaspiza melanotis*</i>	CS, CL, SS	R	R		VU/EN
Pileated Finch	<i>Coryphospingus cucullatus</i>	CS, SS, AG	C	R		
Incertae sedis (1)						
Black-throated Saltator	<i>Saltator atricollis</i>	CD, CS, CL, SS	C	R	CE	
Emberizidae (2)						
Rufous-collared Sparrow	<i>Zonotrichia capensis</i>	CS, SS, AG	U	R		
Grassland Sparrow	<i>Ammodramus humeralis</i>	CS, CL, SS	C	R		
Parulidae (4)						
Masked Yellowthroat	<i>Geothlypis aequinoctialis</i>	MA	U	R		
Tropical Parula	<i>Setophaga pitaiayumi</i>	AT, GF	U	R		
Flavescent Warbler	<i>Myiothlypis flaveola</i>	AT, GF	C	R		
Golden-crowned Warbler	<i>Basileuterus culicivorus</i>	AT, GF	C	R		
Icteridae (10)						
Red-rumped Cacique	<i>Cacicus haemorrhous</i>	AT	U	R		
Variable Oriole	<i>Icterus pyrrhopterus</i>	AT, GF	U	R		
Chopi Blackbird	<i>Gnorimopsar chopi</i>	CS, AG	C	R		
Unicoloured Blackbird	<i>Agelasticus cyanopus</i>	MA	R	O		
Chestnut-capped Blackbird	<i>Chrysomus ruficapillus</i>	MA	R	O		
Yellow-rumped Marshbird	<i>Pseudoleistes guirahuro</i>	MA	C	R		
Screaming Cowbird	<i>Molothrus rufoaxillaris</i>	AG	C	R		
Giant Cowbird	<i>Molothrus oryzivorus</i>	AG	U	R		
Shiny Cowbird	<i>Molothrus bonariensis</i>	AG	U	R		
White-browed Blackbird	<i>Sturnella supercilialis</i>	MA	U	R		
Fringillidae (4)						
Hooded Siskin	<i>Sporagra magellanica</i>	AG	R	R		
Purple-throated Euphonia	<i>Euphonia chlorotica</i>	AT, GF	C	R		
Violaceous Euphonia	<i>Euphonia violacea</i>	AT	R	R		LC/NT

Table 1. Species and status of the birds of Reserva Natural Laguna Blanca (continuation)

Common name	Scientific name	Hab	Abun	Stat	End	Cons
Chestnut-bellied Euphonia	<i>Euphonia pectoralis</i>	AT	R	R	AF	LC/NT

Habitat (Hab): CS=Campo sucio; CL=Campo limpio; CD=Cerradón; SS=Sensu Strictu; AQ=Aquatic Habitats; MA=Marshy Areas; AE=Aerial; GF=Gallery Forest; AT=Atlantic Forest; AG=Peridomestic areas and agriculture (Eucalyptus, soybean). Abundance (Abun): C=Common (several encountered daily in correct habitat); U=Uncommon (encountered almost daily in correct habitat); R=Rare (encountered infrequently); 1=Single record. Status (Stat): R=Resident; S=Summer visitor; W=Winter visitor; P=Passage migrant; O=Occasional; V=Vagrant. Endemism (End): AF=Atlantic Forest Endemic; CE=Cerrado Endemic; MG=Mesopotamian Grasslands Endemic. Conservation status (Cons): Given as global/national following IUCN and BirdLife International (2003)/Secretaria del Ambiente (2006). CR=Critically endangered; EN=Endangered; VU=Vulnerable; NT=Near threatened; LC=Least concern. Status is not listed when the species is least concern both nationally and globally. Species marked with * occur in the IBA but have not yet been reported from the RNLB.

**Figure 1.** Location of Reserva Natural Laguna Blanca, departamento San Pedro, Paraguay.

ned) of national conservation concern (Table 1). Two species, Lesser Nuthura *Nothura minor* and Common Tern *Sterna hirundo* Smith *et al.* (2006a) are known only from this locality in Paraguay. Four are considered endemic to the Cerrado (33% of Paraguayan Cerrado endemics), 25 endemic to the Atlantic Forest (32.9% of Paraguayan Atlantic Forest endemics) and 2 endemic to the Mesopotamian Grasslands (100% of Paraguayan MG endemics) (Guyra Paraguay 2005). Taxonomy follows SACC (2014).

The following species represent new records for the Laguna Blanca IBA since Smith *et al.* (2005). Records are from within the RNLB unless otherwise stated:

Ringed Teal *Callonetta leucophrys* A pair on the lake, 7 March 2013 (KG, Becca Smith, Victoria Pinion)

Great Grebe *Podiceps major* One observed on the lake by HDC, 25 July 2009.

Wood Stork *Mycteria americana* First record was of two birds, 22 October 2008 (PS, HDC, Paul and Michelle Martin). Flocks observed within the reserve on 29 March 2014 (5), 4 April 2014 (13) and 5 April 2014 (6) (KG).

White-faced Ibis *Plegadis chihi* Two over-flying the lake 26 March 2013, (KG).

Grey-headed Kite *Leptodon cayanensis* One photographed 27 March 2013 (KG, Sjouke Schouten). Another seen 31 March 2013.

Mississippi Kite *Ictinia mississippiensis* Small flocks observed during 2013 24 February (12), 25 February (5), 3 March (3) and 8 March (20) (KG). Larger flocks observed during 2014 9 March (1), 15 March (91) and 16 March (50). Most movements came after storms. Five birds including juveniles on thermals 14 November 2015 (KG).

Limpkin *Aramus guarauna* One observed at a seasonal pond near the lake 14 November 2015 (KG).

Spot-winged Wood-Quail *Odontophorus capueira* Heard singing from forest on the neighbouring Peña property, 17 September 2006 (HDC, PS) and again in the same area 31 March 2009 (HDC).

Laughing Gallinule *Gallinula galeata* One on the lake 14 September 2009 (HDC, Raúl Demangel, Juan Aguirre and Mónica Rubio)

Lesser Yellowlegs *Tringa flavipes* Four on the lake 19 October 2008 (HDC, PS, Paul and Michelle Martin)

Pectoral Sandpiper *Calidris melanotos* First re-

cord 14 September 2010 (HDC, PS, Robert Wynands and Ulrike Bechsler)

Giant Snipe *Gallinago undulata* Vocalizations heard regularly in wet Cerrado on Agroforestral Río Verde property adjacent to the reserve with first record 21 October 2010 (PS and HDC).

Grey-headed Gull *Chroicocephalus cirrocephalus* One seen at the lake 26 March 2013 after several days of storms (Sjouke Schouten and Sean Gee).

Large-billed Tern *Phaetusa simplex* One flying south over the lake 17 September 2006 (HDC) and another photographed 10 April 2014 (KG).

Common Tern *Sterna hirundo* Only Paraguayan record was an adult in winter plumage documented by Smith *et al.* (2006a), 17 September 2006.

Rock Dove *Columba livia* Four almost white individuals at the bridge over Arroyo Clementina near the entrance to Agroforestral Río Verde during April 2008 (HDC and Mónica Montiel).

Yellow-billed Cuckoo *Coccyzus americanus* One photographed 15 December 2009 (PS) with subsequent sight records 31 March 2013 and 4 April 2014 (KG).

Barn Owl *Tyto alba* First record was a vocalization, 25 July 2009 (HDC). One observed 17 October 2012 (PS) and another photographed 8 March 2014 (KG).

Black-capped Screech-Owl *Megascops atricapilla* One in Estancia Señorita, 28 May 2003 (HDC).

Striped Owl *Pseudoscops clamator* One observed by Jean-Paul Brouard during July 2013 and another seen 26 March 2014 (KG).

Spot-tailed Nightjar *Hydropsalis maculicaudus* One in Estancia Señorita, 28 May 2003 (HDC).

Long-tailed Potoo *Nyctibius aethereus* One photographed in Atlantic Forest, 20 March 2008 (HDC and Bernard Oosterbarn).

Black-throated Mango *Anthracothorax nigricollis* A female feeding at a flowering bush 5 April 2013 is the first record (KG, Sjouke Schouten and Sean Gee). A second female photographed 4 April 2014 (KG).

Spot-billed Toucanet *Selenidera maculirostris* A female photographed 23 March 2013 is the first record, and the species was subsequently seen again 28 March 2013 (KG).

Barred Forest Falcon *Micrastur ruficollis* One seen 31 March 2009 (HDC). A juvenile photographed

25 March 2014 (KG).

Collared Forest Falcon *Micrastur semitorquatus* An adult captured on a camera trap set at a salt lick 15 and 16 April 2013.

Barred Antshrike *Thamnophilus doliatus* On the road to Colonia Pedro Giménez, 30 March 2009 (HDC, Jerry and Sheila Cooper).

Southern Bristle Tyrant *Phylloscartes eximius* One in Estancia Señorita, 29 May 2003 (HDC).

Straneck's Tyrannulet *Serpophaga griseicapilla* One photographed 19 March 2013 (KG).

Spectacled Tyrant *Hymenops perspicillatus* A male at the bridge over Arroyo Clementina near the entrance to Agroforestral Río Verde 17 September 2006 (HDC, PS, Kirti Chaudhury and Richard Smith).

Masked Gnatcatcher *Polioptila dumicola* One seen, 31 March 2009 (HDC).

Black-faced Tanager *Schistochlamys melanopis* One photographed 11 April 2013 is only the fifth record for Paraguay (KG and Sjouke Schouten).

Swallow Tanager *Tersina viridis* First record in the reserve 31 July 2013 (HDC). Six birds in Atlantic Forest 16 March 2014, a pair photographed (KG).

Saffron Finch *Sicalis flaveola* First observed in the reserve 20 March 2008 (HDC, Mónica Montiel and Bernard Oosterbarn). One photographed on the outskirts of the reserve on 18 March 2013 (KG).

Grassland Yellowfinch *Sicalis luteola* Large flock of hundreds of individuals at Agroforestral Río Verde grasslands, 29 September 2011 (HDC).

Discussion

The presence of one of only three known global breeding populations of White-winged Nightjar (Smith *et al.* 2006b), as well as healthy breeding populations of other threatened grassland species such as Giant Snipe, Cock-tailed Tyrant, Black-masked Finch, Lesser Nothura and Sharp-tailed Tyrant, plus the suspected breeding of Chestnut Seedeater (inferred from resident adult males) make this locality of the utmost importance for the conservation of grassland birds in Paraguay. Though the lake itself is low nutrient and thus unable to hold large resident populations of water birds, it is a vital touchdown site for moving waterbirds, and evidence is beginning to emerge of its role as a landmark in the migrations of other declining species such as Mississippi Kite and

Yellow-billed Cuckoo.

Though the importance of RNLB for the conservation of Paraguayan biodiversity has long been understood, efforts to ensure its long term conservation have so far been unsuccessful. Though the Rancho Laguna Blanca property was declared a Reserva Natural on 3 February 2010 (Decreto 3893 under Artículo 26 of Protected Areas Law 352/94) this designation is in force for a period of just five years from its declaration. The lake was separately declared a Monumento Natural on 12 November 2009 (Decreto 3998 under Protected Areas Law 352/94). Both these categories theoretically provide some degree of legal protection, but as the former falls under the subsystem of private reserves (and hence is the responsibility of the proprietors) and the latter under that of public reserves (under government jurisdiction) there is little consistency or cooperation in the approach to the conservation of the area. Furthermore no management plan has ever been approved for the RNLB, despite this being a legal requirement for all private reserves in the country.

In the period since the legal protection of RNLB was announced, the catchment area has seen a dramatic increase in the local resident population and, with the lake establishing itself as a major destination for beach tourism, it receives huge numbers of tourists during the high season (December to February and Easter week). This influx of visitors has predictably resulted in a marked increase in development around the lake shore. Developmental and usage restrictions applicable under the protected area category of Monumento Natural refer not only to the lake itself but also to the properties which border it, which are regarded as a buffer zone. Despite this these regulations have been openly flouted, and the recreational use of the lake is actively promoted throughout the country even though such usage is supposedly prohibited under environmental law.

RNLB is privately owned by the Duarte family and the economic burdens of maintenance and vigilance of the reserve are the sole responsibility of the owners. The establishment of the self-sustaining Para La Tierra Ecological Station at RNLB has offered some logistical support to them by providing a permanent scientific presence and training and employing a small team of forest guards, as well as establishing a highly regarded scientific collection at the reserve,

implementing environmental education campaigns for tourists, and performing regular workshops with local communities and schools to highlight the importance of the local environment. This has had a considerable positive impact in regards to public perceptions and local support for the reserve, however the option to enforce environmental law when necessary is key to the success of these campaigns and the continued cooperation of the Duarte family is vital to the maintenance of this unique ecosystem as a protected area. Given that formal legal protection of RNLB expired in January 2015, consolidating the long term conservation of the reserve should now be considered a national priority.

Acknowledgements

Thanks to all the staff and volunteers at Para La Tierra who have contributed to the bird inventory of RNLB, as well as all the other observers who have added their records to the database for the site. Some of these have been mentioned in the text in reference to specific records, but many others, too numerous to mention, have also assisted through the years in compiling this impressive site list. Particular thanks to co-owner Malvina Duarte for her foresight in declaring her property a reserve and to the Secretaria del Ambiente for making it happen. PS is part-funded by the PRONII program of CONACYT. This paper is produced in the hope that it is not too late to conserve this irreplaceable site for perpetuity.

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