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BOLIVIA

Oswaldo Maillard Z., Susan E. Davis & A. Bennett Hennessey





Country facts at a glance

Area:	1,098,581 km ²
Population (2001):	8,274,325
Capital:	Sucre (constitutional) La Paz (government headquarters)
Altitude:	80–6542 m
Number of IBAs:	50
Total IBA area:	22,886,484 ha
IBA coverage of land area:	21%
Total number of birds:	1414
Globally threatened birds:	31
Globally threatened birds in IBAs:	28
Country endemics:	15

General introduction

Bolivia is located in the center of South America and is a unitary, free, independent and sovereign republic. The country is governed by a democratically elected president, heading up the executive branch of the government. Legislative and judicial branches complete the government structure. Bolivia is bounded by Brazil to the east and north, by Peru to the northwest, Chile to the southwest, Argentina to the south and Paraguay to the southeast. The country is divided into nine political and administrative regions or *departamentos* (Beni, Chuquisaca, Cochabamba, La Paz, Oruro, Pando, Potosí, Santa Cruz and Tarija), each governed by a democratically elected prefect. Departments are divided into 112 provinces, which in turn are divided into 327 municipalities, the latter administered by a mayor and a local council.

Bolivia is a multiethnic and multicultural country, with four officially recognized languages: Spanish, Quechua, Aymará and Tupi Guaraní. However, a further 29 languages (made up of 127 dialects), including Tacana and Chiquitano, among others, are spoken by an equal number of ethnic groups. Most indigenous communities live in 29 Community Territories (TCO, in Spanish). The indigenous population numbers 4,133,138 people (2001 figure), that is, half the total number of Bolivia's inhabitants. The rest of the population is made up of people of mixed race, whites and other less numerous groups such as Afro-Americans.

In terms of climate, Bolivia has a dry and a wet season, although physical barriers, altitudinal and latitudinal gradients, trade winds and El Niño phenomenon also influence variations in rainfall and temperature, giving rise to a range of climates, including very cold, dry temperate, humid temperate, subtropical temperate, humid tropical and dry tropical.

In the west of the country, two branches of the Andes, the Western and Eastern Cordillera run north-south, forming a central depression or highland plateau between them, known as the Altiplano. Towards the east of the country are mainly lowlands with some hills, preceded by a series of sub-Andean serranias or foothills, known as the *faja subandina*. The following formations are important in this region: Llanura del Chaco, Llanura del Beni, Madre de Dios watershed, Plataforma Mojeño-Chiquitana and Cratón del Guaporé (Suarez-Soruco 2000).

Bolivia has three important catchment areas: Northern or Amazon basin (e.g. Madre de Dios and Mamoré rivers), Endor-reica or lakes region (e.g. Lake Titicaca, Lake Poopó) and Southern or Plata River basin (e.g. Pilcomayo river).

Due to climatic and geomorphological variety, Bolivia has nine biogeographic regions or provinces: Acre-Madre de Dios (Amazon), Beni (Llanos de Moxos), Cerrado, Pantanal, Chaco Boreal, Peruvian-Bolivan Yungas, Peruvian Puna, Boliviano-Tucumano (including dry inter-Andean valleys) and the high plateaus (Altiplanica). Each region is characterized by its own singular set of ecosystems (Navarro & Maldonado 2002).

The combined effect of the above regions is that Bolivia has an extraordinary biological diversity and is one of the most biodiverse nations on Earth. To give just one example, Bolivia occupies 10th or 11th place in the world in terms of vascular plant diversity, and sixth place in South America (Ibisch & Mérida 2003). Despite this high biodiversity, Bolivia is one of the least known countries in the region in terms of flora and fauna.

Bolivia is a developing country with one of the highest rates of poverty in South America. The majority of the rural population is poor (77% in 2001) and must make use of natural resources in order to survive. However, most uses of natural resources are inappropriate and lack sustainable management. With the aim of reducing poverty levels, initiatives have been implemented in recent years to encourage the development and growth of the national economy (Killeen 2007). This development has meant opening up roads in order to colonize remote areas as well as to establish communication between already populated areas, stimulating human migration and accelerating changes in land use. This has led to significant increases in fragmentation, deforestation and degradation of natural habitats (Laurance *et al.* 2001) resulting in biodiversity loss. These activities have also put at risk the most biodiverse regions with the highest concentrations of

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endemic species. Furthermore, these regions, the Amazon forest, and the Tropical Andes and Cerrado Hotspots have not been sufficiently explored to date.

The greatest threat to the conservation of ecosystems is change in land use, mainly due to expansion of the agricultural frontier (Killeen 2007). Although other factors responsible for biodiversity loss exist (e.g. illegal trafficking of species and hunting), changes in land use have increased greatly in recent years, leading to alarming deforestation rates, mainly in

the central-west region of the department of Santa Cruz and the regions of Yungas de la Paz and Chapare de Cochabamba (Steininger *et al.* 2001). Until the mid 1970s, approximately 1 million ha had been deforested, principally in lowland areas. This figure had risen to 3.6 million ha by 2000 (Pacheco 2006). Although legally protected areas help slow down this accelerated change in land use to some degree, it is necessary to identify unprotected areas with high conservation priority in the country. The IBA network aims to act as such a tool, allowing strategies and actions to be developed for biodiversity conservation.

Conservation and protected area system

Bolivia's first national park, Sajama, was created in 1939 in the department of Oruro, in the east of the country. To date, 22 national protected areas have been declared in Bolivia's nine departments. Two of these areas are Biosphere Reserves: Estación Biológica del Beni and Territorio Indígena Pilón Lajas. National protected areas cover approximately 170,969 km², representing 15% of the country's area. There are at least another 56 protected areas at departmental (30) and municipal (9) level, as well as 17 private areas (Ibisch & Mérida 2003). Management and/or maintenance for these areas comes under the responsibility of regional or municipal authorities and the private sector, respectively. The majority of Bolivia's protected areas have been poorly evaluated in terms of biodiversity, and few have publicly available information on their biological wealth. This, in turn, leads to an underestimation of their biological value which is fundamental for justifying their existence. A greater problem is that many of these areas are being settled within and around the protected area boundaries, giving rise to fragmentation and degradation of ecosystems.

National protected areas are managed wholly or partially (in some cases with the participation of indigenous communities) by the National Protected Areas Service (SERNAP, in Spanish), which is dependent on the Ministry of Rural Development, Agriculture and Environment. Other organizations in Bolivia working to implement biodiversity research and conservation include environmental networks (e.g. Liga de Defensa del Medio Ambiente), state university research centers (e.g. Centro de Biodiversidad y Genética, Colección Boliviana de Fauna, Instituto de Ecología, Museo de Historia Natural Noel Kempff Mercado) as well as national and international NGOs.

Environmental legislation in Bolivia took a significant step forward with the entry into force of the Environment Law (Law 1333) in 1992.

Ornithological importance

Despite not having marine habitats, Bolivia is ranked fifth in the world in terms of ornithological diversity (Soria Auza & Hennessey 2005). Although bird studies began in the country in the first half of the 19th century, some regions are still poorly explored and large information gaps exist on the temporal and spatial distribution of a considerable number of species.

In 2003, 1398 species had been reported for Bolivia (Hennessey *et al.* 2003), although estimates based on this figure put the country's ornithological wealth at between 1420 and 1430 species (Ibisch & Mérida 2003). The latest estimate by Herzog and Maillard (2008) established a total of 1414 species for Bolivia, of which 1378 have been documented and a further 36 are considered hypothetical, given that tangible evidence as to their presence in the country is lacking. The latter list gives 1286 species as breeding in Bolivia, 71 as presumed non-breeders, 19 vagrants and two introduced species.

Bolivia has 15 endemic birds, that is, restricted to the political boundaries of Bolivia (Table 1), of these five are globally threatened, two are Near Threatened and one is Data Deficient. Other subspecies (e.g. *Phibalura flavirostris boliviana*) could be considered endemic if elevated to species status but more studies are needed to determine their taxonomic standing. In total, 5% (75 species) of Bolivia's avifauna is globally threatened or Near Threatened (BirdLife International 2007). The majority of these species have been poorly studied,

The law's main objective is to protect and conserve the environment and natural resources by regulating human activity with regards to nature and promoting sustainable development with the aim of improving the population's livelihoods. National and departmental protected area management is regulated by means of this law and the Protected Areas Statute (1997), also establishing six national park categories.

Over the last three decades, Bolivia has signed and ratified several international agreements and conventions for biodiversity conservation, including: Convention on Biological Diversity (1992), World Heritage Convention (1976), Convention on International Trade in Endangered Species of Wild Fauna and Flora (1979), the Ramsar Convention on Wetlands (1990). Other agreements include: Amazon Cooperation Treaty (1978), Convention on Migratory Species (1979), Indigenous and Tribal Peoples Convention (1991), United Nations Framework Convention on Climate Change (1992), International Tropical Timber Agreement (1995) and the United Nations Convention to Combat Desertification (1996).

Ornithological activity at national level has grown considerably in the last 15 years, many organizations participate actively in bird-related research and conservation in the country, including state university research centers (mainly the universities of Cochabamba, La Paz and Santa Cruz) and several Bolivian and international NGOs. A national organization, Asociación Armonía, the BirdLife partner in Bolivia, has been implementing projects and conservation actions aimed at bird conservation in Bolivia for the last 14 years, with special emphasis on threatened species. Currently, Armonía is managing conservation programs for 12 priority species in the country. The association also organizes national ornithological meetings, among other activities.

and consequently much information is still lacking as to their distribution, population size and natural history.

Table 1. Endemic bird species in Bolivia

Biogeographic region	Species	IUCN category
Inter-Andean dry valleys	<i>Ara rubrogenys</i>	EN
	<i>Upucerthia [Tarphonomus] harterti</i>	LC
	<i>Cranioleuca henricae</i>	EN
	<i>Asthenes berlepschi</i>	NT
	<i>Poospiza garleppi</i>	EN
Yungas and transition between	<i>Oreopsar bolivianus</i>	LC
	<i>Aglaeactis pamela</i>	LC
Yungas and Puna	<i>Schizoeaca harterti</i>	LC
	<i>Grallaria erythrotis</i>	LC
	<i>Atlapetes rufinucha</i> ¹	LC
Llanos de Moxos	<i>Diglossa carbonaria</i> ¹	LC
	<i>Ara glaucogularis</i>	CR
Amazon	<i>Turdus haplochrous</i>	NT
	<i>Discosura leucotis</i>	DD
	<i>Hyllopezus auricularis</i>	VU

¹These two species are probably found in Peru although but more evidence is needed.

A total of 69 species are restricted to Endemic Bird Areas (EBAs) and a further five to Secondary Areas (SAs). Two hundred and thirty species are restricted to four biomes within Bolivia: Southern Amazonia (AMS), Central Andes (CAN), Chaco (CHA) and Cerrado (CER).

Some of Bolivia's ecoregions are highly important to birds. The Amazon (741 spp) as well as the Yungas (650 spp) are the most diverse regions of the country (Herzog *et al.* 2005), although the ecotone between both in Madidi National Park appears to provide habitat to more bird species than any other location in Bolivia and more than most other places in the world (Hennessey pers. comm.). It has been estimated that the Alto Madidi region could hold between 600 and 700 species in an area of approximately 10 km². The Llanos de Moxos

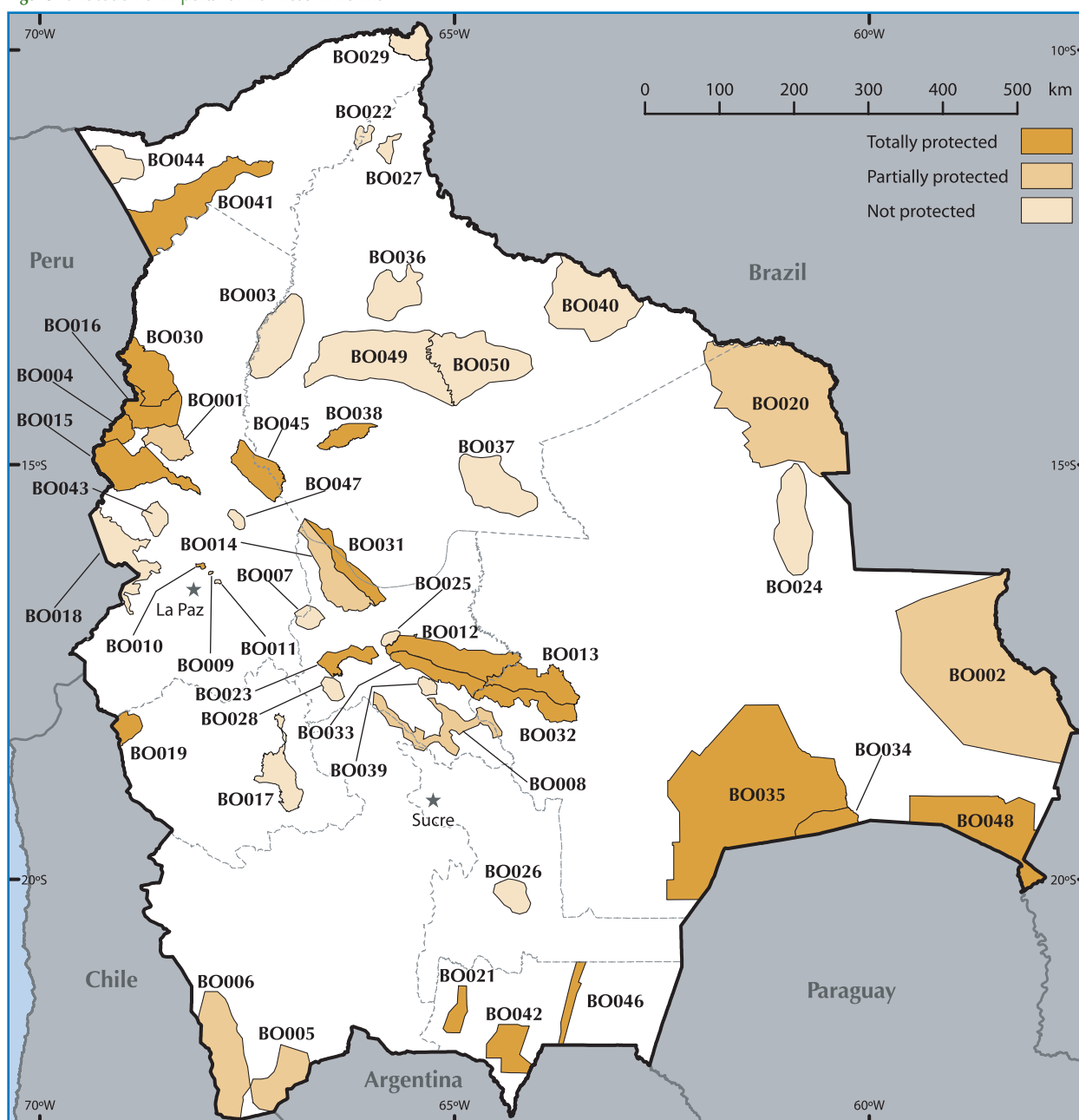
region plays an important role in the survival of austral and boreal migrants which depend on this complex mosaic of habitats as an overwintering site. Despite the low diversity of birds in the inter-Andean dry valleys, this region has several species specially adapted to this environment, with a notable rate of endemism in comparison to other ecoregions. The Cerrado is another important region, although it has suffered from industrial scale agriculture in Brazil where the greater part of its area lies. However, in Bolivia, the region is still in a good state of conservation, with land uses mainly limited to low-impact cattle ranching. It is here where the best opportunities for its long-term protection are to be found.

IBA overview

A total of 50 IBAs have been identified in Bolivia, covering an area of 228,865 km² or 21% of the country's area (Figure 1, Table 2). All sites meet criterion A1, covering 65 of 75 (86.7%) species of conservation interest in Bolivia (28 globally threatened and 37 Near Threatened). Nevertheless, 20 of these species are only trigger IBA criteria at one

site (Table 3). Three sites have 10 or more species of conservation interest, and 14 sites have five or more. Critically Endangered species are present in seven IBAs. A total of 31 and 26 sites have been confirmed under criteria A2 and A3 respectively, and four qualify under criterion A4 (Table 2).

Figure 1. Location of Important Bird Areas in Bolivia



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Table 2. Important Bird Areas in Bolivia

IBA code	IBA name	Adm unit	Area (ha)	A1				A2	A3	A4				
				CR	EN	VU	NT			A4i	A4ii	A4iii	A4iv	
BO001	Apolo	La Paz	193,304			1	2							
BO002	Área Natural de Manejo Integrado San Matías	Santa Cruz	3,290,309	1			2		X					
BO003	Bajo Río Beni, Región Tacana	Beni	485,245			1	1							
BO004	Bosque de Polylepis de Madidi	La Paz	103,327	1	1		4	X						
BO005	Lagunas de Agua Dulce del Sureste de Potosí	Potosí	346,152			1	6							
BO006	Lagunas Salinas del Suroeste de Potosí	Potosí	682,370			1	4				X		X	
BO007	Cuenca Cotacajes	Cochabamba, La Paz	83,894	1			1	X	X					
BO008*	Cuencas de Ríos Caine y Mizque	Chuquisaca, Cochabamba, Potosí, Santa Cruz	373,528	1			2	X	X					
BO009	Bosque de Polylepis de Sanja Pampa	La Paz	2,061	1	1		1	X						
BO010	Bosque de Polylepis de Mina Elba	La Paz	6,344	1	1		1	X	X					
BO011	Bosque de Polylepis de Taquesi	La Paz	3,795			1		X						
BO012	Yungas Inferiores de Carrasco	Cochabamba	467,095			1	4	X						
BO013	Yungas Inferiores de Amboró	Santa Cruz	329,446			1	3	X						
BO014	Yungas Superiores de Mosestenes y Cocapata	Cochabamba	369,272				2	3	X	X				
BO015	Yungas Superiores de Apolobamba	La Paz	474,164	1	2	5	6	X	X	X				
BO016	Yungas Superiores de Madidi	La Paz	261,926				2	3	X	X				
BO017*	Lago Poopó y Río Laka Jahuira	Oruro	264,522	1	1	4	4	X	X	X			X	
BO018	Lago Titicaca (Sector Boliviano)	La Paz	421,128	1	1	2	X	X			X			
BO019	Parque Nacional Sajama	Oruro	107,852				7							
BO020	Noel Kempff Mercado	Santa Cruz	2,251,080	1	2	10	X	X						
BO021	Reserva Biológica Cordillera de Sama	Tarija	108,500			2	8	X	X					
BO022*	Cercanías de Riberalta	Beni, Pando	49,736			1	1	X						
BO023	Vertiente Sur del Parque Nacional Tunari	Cochabamba	140,873	1			7	X	X					
BO024	Reserva Forestal Alto Paraguá	Santa Cruz	517,402	1	1			X						
BO025	Cristal Mayu y Alrededores	Cochabamba	32,310	1	1			X						
BO026	Azurduy	Chuquisaca	147,622				2							
BO027*	Cerrado de Riberalta	Beni	55,092				1							
BO028	Cerro Q'ueñwa Sandora	Cochabamba	63,730				1							
BO029	Federico Román	Pando	173,672	1					X					
BO030	Yungas Inferiores de Madidi	La Paz	405,296	1	3	3	X	X						
BO031	Yungas Inferiores de Isiboro-Sécure/Altamachi	Beni, Cochabamba	212,041	1	1			X	X					
BO032	Yungas Superiores de Amboró	Santa Cruz	269,787				1							
BO033	Yungas Superiores de Carrasco	Cochabamba	226,037			1	1	X						
BO034	Palmar de las Islas	Santa Cruz	185,809	1		1		X						
BO035	KAA-IYA del Gran Chaco	Santa Cruz	3,236,230	1		2		X	X					
BO036*	Lagunas Rogaguado y Ginebra	Beni	341,720				3	X	X					
BO037*	Loreto	Beni	512,646	1		3	4	X	X					
BO038**	Estación Biológica del Beni	Beni	135,211	1	1	3		X						
BO039	Quebrada Mojón	Cochabamba	44,446	1		1								
BO040	Reserva de Inmovilización Iténez	Beni	910,164	1	1	4		X						
BO041	Reserva Nacional Amazónica Manuripi Heath	Pando	765,599	1		3	X	X						
BO042	Reserva Nacional de Flora y Fauna Tariquíá	Tarija	254,974			1	6	X	X					
BO043	Tacacoma-Quiabaya y Valle de Sorata	La Paz	95,775	1		1	X	X						
BO044	Tahuamanu	Pando	223,790	1		2	X	X						
BO045	Yungas Inferiores de Pílon Lajas	Beni, La Paz	272,387			2		X						
BO046**	Serranía de Aguarguay	Tarija	108,307	1	1	2	X	X						
BO047**	Serranía Bella Vista	La Paz	36,529	1	2									
BO048**	Área Natural de Manejo Integrado Otuquis	Santa Cruz	974,735	1		1								
BO049**	Oeste de Río Mamoré	Beni	1,103,018	1		2	3	X	X					
BO050**	Este de Río Mamoré	Beni	766,232	1		2	3	X						

* IBA redefined, ** New IBAs



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

The IBA program began in 1999 under the responsibility of Asociación Armonía. Potential sites were initially identified at the First National IBA Workshop the same year. In 2003, a directory of potentially important sites was compiled, which was then reviewed at the Second National IBA Workshop. Based on this information, a general overview of IBAs in the country as well as a detailed description of each site was presented in the Bolivian chapter of the Tropical Andes IBA Directory (Soria Auza & Hennessey 2005).

In September 2007, Asociación Armonía began a detailed review of the sites designated in Soria Auza & Hennessey (2005) as well as updating much of this information. As a result, the boundaries of six IBAs were modified and six new sites were identified as IBAs, two of which are national protected areas. These changes were implemented using

information in Armonía's database, through consultation with experts, unpublished reports, recent research and analysis of satellite images.

Almost half (44%) of Bolivia's IBAs are wholly within a nationally protected area and eight (16%) overlap with a protected area (Figure 1). Conversely, the IBA network covers 83% (142,390 km²) of national protected areas. The great majority (20 of 22) of these protected areas overlap with at least one IBA (Table 4). Furthermore, the greater part of the eight Ramsar sites in Bolivia (65,180 km²) have also been designated as IBAs, two of these, Lago Poopó y Río Laka Jahuira (BO017) and Lago Titicaca (Sector Boliviano; BO018) hold an important concentration of Andean waterbirds, including the globally threatened Titicaca Grebe (*Rollandia microptera*). Some priority IBAs are not legally protected, in particular, IBAs covering a considerable part of

Table 3. Globally threatened or Near Threatened species confirmed for only one IBA

Species	English name	Threat category	IBA code	IBA name
<i>Nothoprocta taczanowskii</i>	Taczanowski's Tinamou	VU	BO015	Yungas Superiores de Apolobamba
<i>Crax globulosa</i>	Wattled Curassow	VU	BO003	Bajo Río Beni, Región Tacana
<i>Laterallus xenopterus</i>	Rufous-faced Crane	VU	BO038	Estación Biológica del Beni
<i>Ara rubrogenys</i>	Red-fronted Macaw	EN	BO008	Cuencas de Ríos Caine y Mizque
<i>Nannopsittaca dachilleae</i>	Amazonian Parrotlet	NT	BO030	Yungas Inferiores de Madidi
<i>Eleothreptus candicans</i>	White-winged Nightjar	EN	BO038	Estación Biológica del Beni
<i>Picumnus fuscus</i>	Rusty-necked Piculet	NT	BO020	Noel Kempff Mercado
<i>Asthenes berlepschi</i>	Berlepsch's Canastero	NT	BO043	Tacacoma-Quiabaya y Valle de Sorata
<i>Formicarius rufifrons</i>	Rufous-fronted Anthrush	NT	BO044	Tahuamanu
<i>Hylopezus auricularis</i>	Masked Antpitta	VU	BO022	Cercañas de Riberalta
<i>Geositta poeciloptera</i>	Campo Miner	NT	BO020	Noel Kempff Mercado
<i>Polystictus pectoralis</i>	Bearded Tachuri	NT	BO002	Área Natural de Manejo Integrado San Matías
<i>Phibalura flavirostris</i>	Swallow-tailed Cotinga	NT	BO001	Apolo
<i>Porphyrospiza caerulescens</i>	Blue Finch	NT	BO020	Noel Kempff Mercado
<i>Charitospiza eucosma</i>	Coal-crested Finch	NT	BO020	Noel Kempff Mercado
<i>Neothraupis fasciata</i>	White-banded Tanager	NT	BO020	Noel Kempff Mercado
<i>Tangara meyerdeschauensei</i>	Green-capped Tanager	VU	BO016	Yungas Superiores de Madidi
<i>Coryphaspiza melanotis</i>	Black-masked Finch	VU	BO037	Loreto
<i>Amazona xanthops</i>	Yellow-faced Amazon	NT	BO036	Lagunas Rogaguado y Ginebra
<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	NT	BO034	Palmar de las Islas

the range of two endemic macaws, the Critically Endangered Blue-throated Macaw (*Ara glaucogularis*) and the Endangered Red-fronted Macaw (*Ara rubrogenys*).

The IBA network in Bolivia covers the majority of ecosystems present in the country, from the Andean Cordillera to the eastern lowlands. Forests are the major habitat covered by IBAs (approximately 60%), followed by wetlands, grasslands, scrub and other habitats to a lesser

degree. These habitats maintain a diverse group of resident species, as well as migrants. The IBA network is also of importance to both boreal and austral migrants with 155 species recorded within the network. The greatest diversity of migrants is found in lowland IBAs in the south and east of the country, of which the following are highlighted: Kaa-iyá del Gran Chaco BO035 (89 migrant species), Noel Kempff Mercado BO020 (89), Palmar de las Islas BO034 (78), Loreto BO037 (74), and Área Natural de Manejo Integrado San Matías BO002 (70).



The Endangered Titicaca Grebe (*Rollandia microptera*) has an estimated global population of just 1600 mature individuals. Photo: Roland Seitre

Table 4. Summary of protected areas which wholly or partially cover IBAs in Bolivia

Protected areas	Area (ha)	IBA code
Parque Nacional y Área Natural de Manejo Integrado Madidi	1,895,750	BO001, BO004, BO016, BO030
Parque Nacional y Área Natural de Manejo Integrado Kaa-iyá del Gran Chaco	3,441,115	BO034, BO035
Parque Nacional y Área Natural de Manejo Integrado Amboró	637,600	BO013, BO032
Parque Nacional Noel Kempff Mercado	1,523,446	BO020
Parque Nacional Carrasco y Refugio de Vida Silvestre Carvernas de Repechón	622,600	BO012, BO033
Reserva de la Biosfera Estación Biológica del Beni	c.135,000	BO038
Área Natural de Manejo Integrado Apolobamba	483,743	BO015
Reserva Nacional de Fauna Andina Eduardo Avaroa	714,745	BO005, BO006
Parque Nacional Sajama	100,230	BO019
Parque Nacional y Área Natural de Manejo Integrado Cotapata	c.40,000	BO009, BO010
Parque Nacional y Territorio Indígena Isiboró-Sécure	c.200,000	BO031
Reserva de la Biosfera y Territorio Indígena Pilon Lajas	c.400,000	BO045
Reserva Nacional de Flora y Fauna Tariquíá	246,870	BO042
Reserva Biológica Cordillera de Sama	108,500	BO021
Parque Nacional y Área Natural de Manejo Integrado Serranía del Aguargüe	108,307	BO046
Parque Nacional Toro Toro	16,570	BO008
Reserva Nacional Amazónica del Manuripi	c.850,000	BO041
Área Natural de Manejo Integrado San Matías	2,918,500	BO002
Parque Nacional y Área Natural de Manejo Integrado Serranía del Ñaño	2,630	-
Área Natural de Manejo Integrado El Palmar	59,484	-
Parque Nacional Tunari	c.300,000	BO023
Parque Nacional y Área Natural de Manejo Integrado Otuquis	1,005,950	BO048

Opportunities



Many distinct conservation actions are being implemented in Bolivian IBAs at present, including research and monitoring of key species, education and outreach, training for fundraising and implementation of development alternatives compatible with biodiversity conservation. Among the key organizations participating in projects, are public entities, such as SERNAP, regional environmental authorities, municipal governments and educational bodies. Other key actors include grass-roots organizations, national and international NGOs as well as the scientific and academic community.

The IBA program is also evaluating current and potential threats to IBAs. The aim is to use this information to set priorities for each IBA, leading to a strategy for establishing immediate conservation actions and implementing monitoring for the most threatened sites.

Private reserves are currently being designated in three IBAs, each of which is a priority for the conservation of either the Critically Endangered Blue-throated Macaw (*Ara glaucogularis*) or the Endangered Red-fronted Macaw (*Ara rubrogenys*).

Future activities in the IBA program include ensuring continuity to conservation and sustainable development projects with local actors; implementing an IBA monitoring program following BirdLife International guidelines; and staging a national workshop to create greater awareness of the IBA program. The program also aims to encourage the government in office to use the IBA inventory of designated and potential sites as a network of officially protected natural areas, or at least as recognized sites of importance for biodiversity conservation. In this way, the program aims to ensure that the network is taken into account in spatial planning and environmental impact assessments, among other development plans and projects.

The IBA program is also working towards the inclusion of the network at other levels, such as regional and municipal government and within other organizations and indigenous communities. Thus the IBA program aspires to create awareness and conviction on the part of the authorities and the public in general, to protect and conserve these important sites, not only for birds, but also for other flora and fauna found at IBAs.



The Critically Endangered Blue-throated Macaw (*Ara glaucogularis*) is endemic to Bolivia. Mauricio Herrera of Asociación Armonía has been appointed Species Guardian to coordinate conservation actions for this species.
Photo: Mark Stafford

Box 1

Conservation strategy for the lower river Beni

The Local Conservation Group (LCG) strategy developed by BirdLife International has been implemented by Asociación Armonía in the indigenous community of San Marcos, located in the Bajo Río Beni, Región Tacana IBA (BO003). An effective participation of the community has been achieved in the conservation of this important area through awareness raising, education, participative monitoring and research on key species, principally the Vulnerable Wattled Curassow (*Crax globulosa*). A concrete example of strong local commitment to the project was a community decision to ban hunting and timber extraction. The creation of a community ecotourism initiative aims to provide sustainability to San Marcos. LCG's commitment to finding alternative development processes which are compatible with biodiversity conservation.



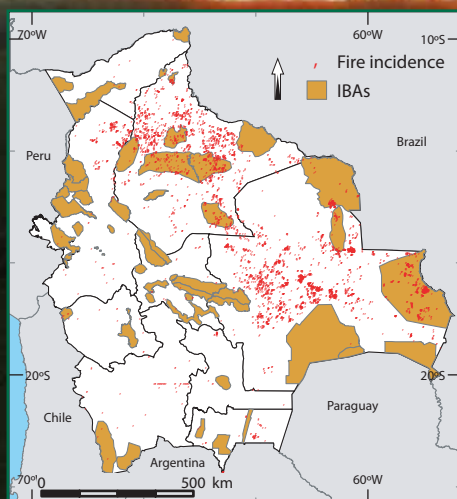
Conservation workshop in San Marcos.
Photo: Hugo Aranibar



Laguna Rogaguado.
Photo: Mauricio Herrera

Fire monitoring in the Bolivian IBA network

Box 2



Forest fires are one of the main causes of biodiversity loss. The aim of this monitoring project is to identify and prioritize regions which are most affected by this type of threat each year. The final aim is to be able to take strategic decisions and implement conservation measures for threatened areas. Based on information of localized heat spots from NOAA-12 satellite images, an evaluation of historic fire incidence between 1999 and 2007 was carried out. Preliminary results show that IBAs with the greatest concentration of fires in this time period correspond to lowlands, mainly in the Area Natural de Manejo Integrado San Matías.

Photo: Douglas Bruckner

Further information

Data sources

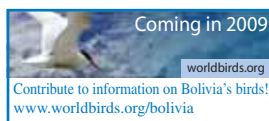
For more details on specific sites, consult the Bolivian chapter of the Tropical Andes IBA Directory (Soria Auza & Hennessey 2005).

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