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americas@birdlife.org www.birdlife.org

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URUGUAY Joaquín Aldabe, Pablo Rocca & Santiago Claramunt

The Vulnerable Chestnut Seedeater (*Sporophila cinnamomea*) is one of three threatened and restricted-range seedeaters present in Uruguay. The species triggers IBA criteria at seven sites. Photo: Joaquín Aldabe



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Country	/ tacts a	t a g	lance	-

Area:	176,215 km²
Population (2004):	3,241,003
Capital:	Montevideo
Altitude:	0–513 m
Number of IBAs:	22
Total IBA area:	3,152,350 ha
IBA coverage of land area:	18%
Total number of birds:	435
Globally threatened birds:	11
Globally threatened birds in IBAs	:10
Country endemics:	0



Uruguay, as its official name indicates (*República Oriental del Uruguay*), is located in the east of South America's Southern Cone between latitudes 30° and 35° south and longitudes 53° to 58° west. To the northeast, Uruguay is bounded by Brazil, to the west, by Argentina and to the south and southeast lie the River Plate and the Atlantic Ocean. The country has a terrestrial area of 176,215 km<sup>2</sup> and 142,093 km<sup>2</sup> of territorial waters, including Lake Merín, River Plate, River Uruguay and marine area. The country has 486 km of coast along the River Plate and 232 km on the Atlantic Ocean.

Uruguay is a democratic republic, with the state divided into three independent branches: legislative, executive and judicial. Members of the former two, as well as the president, are elected by vote every five years which is universal and obligatory for over 18s. The country is divided into 19 administrative divisions, known as *departamentos* (departments) presided over by departmental governments whose members are chosen at local elections.

Uruguay has 3,241,003 inhabitants, of which 92% live in urban areas, and 41% live in the capital, Montevideo (Instituto Nacional de Estadística 2004). This implies a very low population density, clearly reflected in important areas of natural landscapes (i.e. not urbanized). No indigenous groups have survived in Uruguay although the country's original inhabitants played an important role in achieving independence in 1825, alongside other minority ethnic groups such as African slaves. The subsequent blend between this group and European immigrants, mainly Italians and Spanish, created a unique culture, most visible in the figure of the Gaucho, or Pampas cowboy, in the River Plate area. Literacy rates in Uruguay are of the order of 99%, one of the highest in the Americas.



The IBA Quebradas de Treinta y Tres (UY014) was the first protected area to be included in the new system of protected areas. A management plan is currently in preparation. Photo: Joaquín Aldabe

Uruguay is located in a temperate climate zone, although the country also has subtropical and sub-humid climates, marked by four distinct seasons. Average annual temperature is 17.5 °C and average annual rainfall is 1300 mm (DNM 2009). Rainfall pattern is irregular and varies from year to year, reflected in spells of drought and flooding throughout the country's history.

In terms of vegetation, the country is generally included in the Pampas phytogeographic province (Cabrera & Willink 1973), although other authors recognize a Uruguayan province due to physical and biotic differences with the plains of the Pampas (Chebataroff 1979). Furthermore, the country is strongly influenced by the biogeographical provinces of Chaco and Parana, well represented in the northwest and northeast of the country, respectively (Grela 2004). Several authors describe Uruguaya as a transitional zone, with respect to both continental and marine ecosys-

tems, a fact that is reflected by the country's high biodiversity. In general terms, the following ecosystems have been identified: plains, forests, wetlands, coastal and marine. Landscapes in Uruguay are dominated by rolling plains, with the highest point being Cerro Catedral at 513 m, in the department of Lavalleja. Many rivers cross these plains, with the principal catchment areas consisting of the Rivers Plate, Uruguay, Negro, Santa Lucía and Lake Merín.

Most of Uruguay is given over to agriculture, mainly for cattle raising, although a variety of crops are also grown, albeit to a lesser extent. Other important economic activities are fishing, mining, industry, services and tourism. Almost the whole of the country is privately owned. Due to national policies and changes in global markets, industrial forestry has grown precipitously in recent years (mainly *Pinus* and *Eucalyptus*), as well as agriculture in general.

### Conservation and protected area system



Laguna de Rocha (UY019) has the highest known population of wintering Buff-breasted Sandpipers (*Tryngites subruficollis*) in any IBA in the Americas Photo: Héctor Caymaris

Despite there being a relatively complete legal framework covering environmental and conservation issues in Uruguay, the country is passing through a difficult moment in terms of biodiversity conservation. This is mainly due to the aforementioned intensification of land use, particularly in terms of *Pinus* and *Eucalyptus* plantations and cattle ranching. However, the new protected area system and programs such as "Responsible Production" could lead to more favorable circumstances (see Opportunities below).

Conservation of the environment in Uruguay is backed by article 47 of the constitution and Law 16.466 (1994) declaring environmental protection of general interest with regard to any kind of depredation, destruction or pollution. These negative impacts against the environment include damage to the structure, quality and diversity of natural resources.

Two other pieces of important national legislation are the "National Strategy for conservation and sustainable use of biological diversity in Uruguay" (1999), resulting from a GEF funded project, implemented by UNDP and the Ministry of Housing, Planning and Environment through the National Environmental Authority (DINAMA, in Spanish); and Law 9,418 (1935) establishing protection mechanism for indigenous fauna.

The National Protected Areas System was created by means of Law

17,234 in February 2000. Among the law's principal components are; a) definition of the protected area system, b) definition of management categories for areas within the system; c) conferment of responsibility to formulate, execute, supervise and evaluate national plans for protected areas on the Ministry of Housing, Planning and Environment (through DINAMA); d) creation of a National Protected Areas Assessment Commission; e) creation of a Protected Areas Fund; and f) creation of the Environmental Police (*guardia ambiental*). However, a legislative framework was not developed for this law until February 2005.

DINAMA is currently managing a project to strengthen the implementation of Uruguay's national protected areas system, including the first seven areas to be incorporated into this system (Martino *et al.* 2008). However, current protected areas are not enough to ensure full protection of biodiversity (Martino *et al.* 2008).

Uruguay has signed numerous international environmental agreements, among these are: the Vienna Convention for the Protection of the Ozone Layer (1988), Convention on Biological Diversity (1993), Convention for the Protection of Flora, Fauna and Natural Scenic Beauties of America (1940), Convention on International Trade in Endangered Species of Wild Fauna and Flora (1974), Convention on Migratory Species (1989) and the Ramsar Convention on Wetlands.

#### Uruguay

## Ornithological importance

The beginnings of ornithology in the country can be traced back to 1715, when medical doctor, William Toller, visited what today are Uruguay's coasts. Subsequently, the distinguished naturalists Felix de Azara published Historia Natural de los Páxaros del Paraguay y Río de la Plata (brought out in 1802, but written 24 years earlier) and Dámaso A. Larrañaga, a selftaught Presbyterian naturalist, became the first national author to publish a book on the birds of Uruguay (written between 1813 and 1824). Other well-known scientists to have visited the country include the French naturalist Alcide d'Orbigny in 1827 and the German zoologist G. Burmeister between 1856 and 1857, among others (Arballo & Cravino 1999). However, maybe the most prestigious and best known naturalist to visit Uruguay was Charles Darwin, who at the age of 23 in 1832, travelled through several of the country's provinces (Arballo & Cravino 1999). In the 20th century, several national authors made substantial contributions to ornithological knowledge in the country. Juan Tremoleras, one of the best known Uruguayan ornithologists published the first list of Uruguayan birds in 1920. Additionally, the English ornithologist, G. W. Teague carried out important work on marine and coastal birds in 1955 and the Uruguayan ornithologist, Rodolfo Escalante, published Aves Marinas del Río de la Plata y aguas vecinas del Océano Atlántico in 1970, an essential

"Bird species of conservation priority are currently being selected, with a view to identifying and creating new protected areas."





# Box 1 Seedeater discovered Entre Rios Seedeater (Sporophila zelichi) is a Critically Endangered grassland species. Its global population size is estimated at just 50 to 249 individuals. There are severe threats to its possibilities of survival, the most serious of which are the loss of natural grasslands due to overgrazing and agriculture, and capture for illegal trafficking. Aves Uruguay, funded by Disney Wildlife Conservation Fund, has worked on reverting the species' situation by generating scientific knowledge and implementing concrete management actions within its habitat. Results obtained to date are highly encouraging, with new records of the species obtained in two different locations. Currently, habitat requirement studies are un-

**New sites for Entre Rios** 

Entre Rios Seedeater (Sporophila zelichi Photo: Joaquín Aldabe

work on this group of birds. Gore & Gepp (1978) published Las Aves del Uruguay, the first modern text for Uruguayan ornithology. More recently, important publications include those by Arballo & Cravino (1999), Azpiroz (2001) and Claramunt & Cuello (2004), among many others.

derway as well as a review of the farming system at one of the sites. Based on these results, a Species Action Plan will be produced.

Uruguay has between 431 and 435 species, depending on the author (Arballo & Cravino 1999, Azpiroz 2003, Claramunt & Cuello 2004). Further species have been recorded in the country, but are still being described at present (Azpiroz & Menéndez 2008). At global level, Uruguay has 40 threatened and Near Threatened birds, including marine species (BirdLife International 2007). The country is important for providing habitat to significant populations of several species of global conservation concern, such as Greater Rhea (Rhea americana), Buffbreasted Sandpiper (Tryngites subruficollis), Straight-billed Reedhaunter (Limnoctites rectirostris), Black-and-white Monjita (Xolmis dominicanus), Chestnut Seedeater (Sporophila cinnamomea), Marsh Seedeater (Sporophila palustris), Dark-throated Seedeater (Sporophila ruficollis), Yellow Cardinal (Gubernatrix cristata), Pampas Meadowlark (Sturnella defilippii) and Saffron-cowled Blackbird (Xanthopsar flavus). The number of records of Entre Rios Seedeater (Sporophila zelichi) implies that Uruguay is of global importance for this species (Azpiroz 2003), although its national status is not well known. However, recent discoveries have increased information on the species (Box 1).

Even though there has been no national evaluation of conservation status of birds in Uruguay, DINAMA is currently selecting species of conservation priority, with a view to identifying and creating new protected areas (Soutullo pers. comm.).

No bird species are restricted to Uruguay's political boundaries, however, four restricted-range species are present, namely, Straight-billed Reedhaunter, Chestnut Seedeater, Marsh Seedeater and Entre Rios Seedeater, all of which are threatened or Near Threatened. Even though Uruguay does not have a complete Endemic Bird Area entirely within its borders (Stattersfield et al. 1998), a significant component of the Argentine Mesopotamian grasslands (EBA 077) lies within Uruguay along the northern shore of the River Uruguay, and at disjunct locations over the extensive eastern wetlands in the Lake Merín basin. Regular populations of all three species defining this EBA exist in Uruguay (Entre Rios, Marsh and Chestnut Seedeater); the latter two are locally common in some areas. Furthermore, Uruguay holds a large component of the Secondary Area, Coastal Uruguay marshes (SA 035), determined by the distribution of Straight-billed Reedhaunter, a species highly associated with the marsh plant Eryngium pandanifolium (Gerzenstein & Achaval 1967). The influence of the biogeographic provinces of Chaco and Paraná are reflected in the bird communities in the northwest and northeast of the country, bestowing a greater biological diversity and wealth on the country. In terms of biome-restricted species, as used for IBA identification, seven species are restricted to the Pampas biome (PAM) in the country.

Many important sites for populations of threatened birds are found in the east of Uruguay (Aldabe *et al.* 2006) along the coastal band of the Atlan-



## "Uruguayan waters are highly productive as well as diverse, reflected in the composition of groups such as albatrosses and petrels."

tic Ocean and the plains of the Lake Merín basin. Coastal lagoons, which periodically connect to the sea, are of great importance to congregations of migratory species (Alfaro & Clara 2007), for example at the lakes of Garzón, Rocha and Castillos (Lanctot *et al.* 2002). Also, sandy beaches to the east are used as stopover sites for migratory species such as Red Knot (*Calidris canutus rufa*; Cuello & Gerzenstein 1962, Azpiroz & Rodríguez-Ferraro 2006, Arballo & Cravino in press, Aldabe *et al.* in prep.).

The eastern wetlands on the plains of the Lake Merín basin, are an extensive region made up of a mosaic of different landscapes, including natural grasslands and wetland vegetation. Noteworthy birds include populations of Saffron-cowled Blackbird (Azpiroz 2000), Black-and-white Monjita and Marsh Seedeater. Several records have also been obtained of Entre Rios Seedeater from this region (Box 1; Azpiroz 2003; Calimares pers. comm.). In northern and northeast Uruguay important sites exist for the conservation of species of *Sporophila* seedeaters and Pampas Meadowlark (*Sturnella defilippii*; Azpiroz 2005).

Uruguay's marine territory is influenced by the confluence of two important marine currents, the warm Brazilian current and the cold Falklands current, as well as the marine front from the River Plate. This means that Uruguayan waters are highly productive as well as highly diverse, reflected in the composition of groups such as albatrosses and petrels (Escalante 1970), many of which have serious conservation issues (Jiménez & Domingo 2007).

Straight-billed Reedhaunter (*Limnoctites rectirostris*) defines a Secondary Area of endemism, comprising the marshes of southeast Brazil, coastal Uruguay and Buenos Aires in Argentina. Photo: Joaquín Aldabe

## **IBA overview**

To date, 22 IBAs have been identified in Uruguay (Table 1, Figure 1) and an additional marine IBA has also been proposed. Terrestrial IBAs cover a total of 31,523.5 km<sup>2</sup>, representing 18% of the country's land

area. Of the 40 globally threatened and Near Threatened birds present in Uruguay, 21 are present in the IBA network, however, only 17 have been recorded in sufficient numbers to meet IBA criteria (Table 2).

#### Table 1. Important Bird Areas in Uruguay

IBA code	IBA name	Adm unit	Area (ha)		A1		A1 A2		A2	A3		A4
				CR	EN	VU	NT			A4i	A4ii A4iii A4iv	
UY001	Campos de Bella Unión	Artigas	225,000		2		1	Х				
UY002	Arapey	Artigas, Salto	80,000		2		1	Х				
UY003	Quebradas y Pastizales del Norte	Rivera, Tacuarembó	300,000			2	2	Х				
UY004	San Antonio	Salto	31,200			2	1					
UY005	Corralitos	Salto	11,200			1	1	Х				
UY006	Meseta de Artigas	Paysandu	32,000	1		1	1	Х				
UY007	Campos de El Tapado	Salto	446,600		1	2	1					
UY008	Pastizales de Lorenzo Geyres y Quebracho	Paysandu	33,600			1	1					
UY009	Guichón	Paysandu	120,000			1		Х				
UY010	Pastizales de Young	Río Negro	42,500			1	1					
UY011	Pastizales y esteros del bajo Río Negro	Río Negro	62,000		1	2	1	Х	X			
UY012	Playa Penino y Humedales de Santa Lucía	Montevideo, San José	23,400			1	2	Х				
UY013	Sierra de los Ríos	Cerro Largo	112,500			2	2	Х				
UY014	Quebradas de Treinta y Tres	Treinta y Tres	160,000			2	1	Х				
UY015	Serranías del Este	Lavalleja, Maldonado, Rocha	640,000	1	1	2	1	Х				
UY016	Estero del Arroyo Maldonado	Maldonado	4,600			1						
UY017	Laguna José Ignacio	Maldonado	3,250			2	2			X		
UY018	Laguna Garzón	Maldonado, Rocha	3,500				1					
UY019	Laguna de Rocha	Rocha	17,000			1	3	Х		X	X	
UY020	Laguna de Castillos	Rocha	27,000			2	4	Х	X	X	X	
UY021	Bañados del Este	Rocha	769,000	1	1	2	1	Х	X		X	
UY022	Barra del Chuy-La Coronilla	Rocha	8,000							X		
		34	<b>N</b>									

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

## Uruguay





Bird monitoring is one of the objectives of the next stages of the IBA program in Uruguay. Photo: Héctor Caymaris

Species	Common name	IUCN category	IBAs with species presence
Sporophila zelichi	Capuchino de Collar	CR	Bañados del Este, Meseta de Artigas, Serranías del Este
Gubernatrix cristata	Cardenal Amarillo	EN	Arapey, Campos de Bella Unión, Campos del Tapado, Serranía del Este
Sporophila palustris	Capuchino Pecho Blanco	EN	Arapey, Bañados del Este, Campos de Bella Unión, Pastizales y Esteros del Bajo Río Negro
Porzana spiloptera <sup>2</sup>	Burrito Plomizo	VU	Estero del Arroyo Maldonado
Larus atlanticus	Gaviota Cangrejera	VU	Esteros del Arroyo Maldonado, Laguna de José Ignacio, Playa Penino y Humedales de Santa Lucía
Culicivora caudacuta	Tachurí Coludo	VU	Quebradas y Pastizales del Norte
Xolmis dominicanus	Viudita Blanca Grande	VU	Bañados del Este, Laguna de Castillos, Laguna de Rocha, Laguna de José Ignacio, Quebradas de Treinta y Tres, Serranía del Este, Sierra de los Ríos
Anthus nattereri	Cachirla Dorada	VU	Campos del Tapado <sup>3</sup> , San Antonio <sup>3</sup>
Sporophila cinnamomea	Capuchino Corona Gris	VU	Corralitos, Guichón, Meseta de Artigas, Pastizales de Lorenzo Geyres y Quebracho
	·		Pastizales de Young, Pastizales y Esteros del Bajo Río Negro, San Antonio
Sturnella defilippii	Loica Pampeana	VU	Campos del Tapado
Xanthopsar flavus	Dragón	VU	Bañados del Este, Castillos, Pastizales y Esteros del Bajo Río Negro, Quebradas de Treinta y Tres, Quebradas y Pastizales del Norte, Serranía del Este, Sierra de los Ríos
Rhea americana	Ñandú	NT	Laguna de Castillos
Phoenicopterus chilensis	Flamenco Austral	NT	Laguna de Rocha, Laguna de José Ignacio
Tryngites subruficollis	Playerito Canela	NT	Campos del Tapado, Laguna de Castillos, Laguna de Rocha, Laguna Garzón
Picumnus nebulosus	Carpintero Enano	NT	Quebradas y Pastizales del Norte, Sierra de los Ríos
Polystictus pectoralis <sup>2</sup>	Tachurí Canela	NT	Playa Penino y Humedales del Santa Lucía <sup>4</sup> , Pastizales de Lorenzo Geyres y Quebracho <sup>5</sup> , Quebradas y Pastizales del Norte <sup>6</sup>
Spartonoica maluroides	Espartillero Enano	NT	Laguna de Castillos, Laguna de José Ignacio, Playa Penino y Humedales de Santa Lucía
Limnoctites rectirostris	Pajonalera Pico Recto	NT	Bañados del Este, Laguna de Castillos, Laguna de Rocha, Playa Penino y Humedales de Santa Lucía, Quebradas de Treinta y Tres, Quebradas y Pastizales del Norte, Serranía del Este, Sierra de los Ríos
Cyanocorax caeruleus <sup>2</sup>	Urraca Azul	NT	Sierra de los Ríos
Sporophila ruficollis	Capuchino Garganta Café	NT	Arapey, Campos de Bella Unión, Corralitos, Meseta de Artigas, Pastizales de Lorenzo Geyres y Quebracho, Pastizales de Young, Pastizales y Estero del Bajo Río Negro, San Antonio
Sporophila hypochroma <sup>2</sup>	Capuchino Castaño	NT	Campos de Bella Unión <sup>7</sup> , Pastizales de Lorenzo Geyres y Quebracho <sup>7</sup>

A further three species have not been recorded recently and are not represented in IBAs: the Critically Endangered Eskimo Curlew (*Numenius borealis*) and Glaucous Macaw (*Anodorhynchus glaucus*) and the Vulnerable Strange-tailed Tyrant (*Alectrurus risora*). The remaining 16 species are marine birds for which IBAs have not yet been identified.

IBAs have been identified in Uruguay for all four IBA criteria, as follows: 21 for A1, 14 for A2, three for A3 and five under A4. A total of seven IBAs were identified for just one criterion, of which six were identified for regularly holding a significant number of threatened or Near Threatened species (A1) and one for congregations of waterbirds (A4i; Table 1). IBAs identified for the greatest number of criteria are Bañados del Este (UY021) and Laguna de Castillos (UY021), both of which meet all four criteria.

The IBA network in Uruguay is of great importance to migratory species. Sites in the southeast and northeast of the country act as overwintering sites for shorebirds (both Neartic and Neotropical migrants), as well as for migratory Passeriformes. Sites identified on the shores of the River Uruguay have a strong component of migratory species, especially Passeriformes of the genus *Sporophila* (Rocha & Claramunt 2003).



Workshop at Laguna de Rocha (UY019) promoting natural grassland conservation with local farmers as part of the Grasslands Initiative (www.pastizalesdelconosur.org). Photo: loaguín Aldabe

In general terms, threats to IBAs in Uruguay come from habitat loss due to agricultural expansion (loss of natural grasslands to industrial forestry and soya plantations in recent years), bycatch of seabirds (Jiménez & Domingo 2007) and the caged bird trade.

## **Opportunities**

Conditions in Uruguay are currently favorable to the implementation of the IBA program. The setting up of the National Protected Areas System allows for the effective conservation of certain IBAs. In turn, the fact that this system is in its infancy in the country opens up the possibility for IBAs to be considered potential sites and therefore vital references in the decision-making process regarding the creation of protected areas. This system could also provide a basis for establishing a monitoring framework in IBAs as well as a means to generate information for the identification of new sites for birds as well as threats to biodiversity. Another sign of interest on the part of the Uruguayan State has been the implementation of the "Responsible Production" project, which aims to promote a rational use of natural resources as well as biodiversity conservation in productive landscapes. For most IBAs, Local Conservation Groups, concerned about environmental issues (NGOs, associations or organized groups), have been identified. Work has begun with many of these groups. Recently, a growing number of people have become interested in birding, with whom work has begun to improve the quality of information obtained in the field. Discussion fora have also been created where information and experiences can be exchanged, making this available to supplement decision making on future conservation initiatives in the country.

The increasing awareness on the part of the Uruguayan people with respect to the importance of looking after the environment (in recent years, there has been a 10% in importance given to the environment



"The fact that the protected area system is in its infancy opens up the possibility for IBAs to be considered potential sites and therefore vital references in the creation of protected areas."

by Uruguayans; Martino *et al.* 2008), as well as the high level of education in the country (only 1.5% of the population lack formal education), provides for an encouraging scenario to promote sustained biodiversity conservation and sustainable development initiatives.

Having finished the first stage of identifying IBAs in Uruguay, the ensuing challenge is to promote their conservation. This process should encompass the following points:

- Characterize bird populations (size and habitat use) in IBAs.
- Monitor birds to obtain further knowledge on species and understand population dynamics, thus facilitating an evaluation of their state of conservation.

- Promote research on the relationships between species' ecology and land use.
- Draw up management guidelines for ecosystems and agro-ecosystems favoring the conservation of threatened birds.
- Identify, strengthen and share experiences between local conservation groups.
- Create strategic alliances with governmental and non-governmental institutions.
- · Provide assistance to the National System of Protected Areas.
- Promote awareness raising and coordinated actions with rural farmers.
- Promote knowledge sharing with regard to birds and biodiversity in general within society.
- Promote the creation of participative databases.
- Promote opportunities to share information on biology and conservation of birds and other biodiversity.
- Promote activities to encourage economic development in harmony with biodiversity conservation (e.g. ecotourism).
- Evaluate impact of climate change on biodiversity loss and propose management measures which lessen these impacts.
- Propose land use planning strategies taking into account biodiversity distributions, among other decision making variables.
- Implement a priority setting exercise among IBAs, identifying those which require immediate action.
- · Create a national IBA conservation strategy.

# Guidelines for management and conservation of cattle ranching landscapes

Box 2 Alliance for the GRASSLANDS To conserve biodiversity

Wetlands International and Aves Uruguay recently implemented a small scale study of the relationships between land use at La Rinconada Estancia and Laguna de Rocha. The study aimed to understand how cattle raising influences habitat, distribution and abundance of two shorebirds, American Golden Plover (*Pluvialis dominica*) and Buff-breasted Sandpiper (*Tryngites subruficollis*). Guidelines for the management and conservation of their habitat were drawn up as a result of the study. Subsequently, Aves Uruguay (within BirdLife's wider Grasslands Alliance) and Wetlands International encouraged the participation of two rural farmers in government sponsored conservation projects, as part of the Responsible Production program. These projects aim to conserve the above shorebirds' habitat, at the same time as meeting the production needs of landowners



Laguna de Rocha (UY019). Photo: Joaquín Aldabe

#### Box 3

Rice paddies in the Southern Cone of South America are of great value as alternative habitat for shorebirds and migratory species (Blanco *et al.* 2006). In Uruguay, three rice-growing areas exist, albeit with topographical differences between them. In the east of the country, rice-growing areas are generally flat, whereas in the center and north, slopes are more pronounced, except on stream and river banks. These differences determine the area of each field and the continuity between them, for example, fields are continuous and considerably larger in the east, whereas in the north and center fields are discontinuous and relatively small (Aldabe *et al.* 2008). In Uruguay, assessments of

# Research aims to improve habitat for shorebirds in rice-growing regions

birds in rice paddies have already been carried out in the east, therefore Aves Uruguay is implementing a research and conservation project on Neartic migratory shorebirds in the north of the country. The objective of this study is to determine how these birds use rice fields as well as creating awareness among the rice industry on the importance of these birds. Aves Uruguay has strategic alliances with several institutions, such as Grupo para la Protección Ambiental Activa de Bella Unión, Wetlands International, Asociación de Cultivadores de Arroz, Museo Nacional de Historia Natural y Antropología, Vida Silvestre Uruguay, PROBIDES and Ministry's Responsible Production project.



Campos de Bella Unión (UY001). Photo: Pablo Rocca

#### **Further information**

#### **Contact information**

Lic. Joaquín Aldabe (joaquin@aldabe.org) IBA Program Coordinator - Uruguay Lic. Pablo Rocca (roccallosa@gmail.com) Lic. Santiago Claramunt (sclara1@lsu.edu) Asesores Científicos Aves Uruguay (gupeca@adinet.com.uy) Canelones 1164, Montevideo, Uruguay Tel. +598 2 9028642 www.avesuruguay.org.uy



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