Waterbirds around the world

A global overview of the conservation, management and research of the world's waterbird flyways

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Cover photography: Whooper Swans *Cygnus cygnus* arriving at Martin Mere, England. Photo: Paul Marshall. (www.paulmarshallphotography.com)

Biodiversity and conservation in the Bañados del Este, southeastern Uruguay

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Uruguay, in south-eastern South America, lies within a biogeographical crossroad (*sensu* Spector 2002), where several typical South American biomes meet: the Pampas, the Chaco and the Paranaense forests. The south-eastern part of the country, known as Bañados del Este (BDE), is characterized by extensive freshwater and coastal ecosystems of very significant regional importance. Aquatic habitats include a long strip of Atlantic seashore, coastal sand dunes, coastal lagoons (both freshwater and brackish), mudflats, numerous rivers and streams, inland marshes, and palm swamps. Additionally, the landscape supports extensive areas of grasslands and forests, the latter developing along fast flowing water courses (gallery forests) and on hilly sierras ("bosque serrano"). These form a complex mosaic providing a large variety of habitats for both resident and migratory species, supporting approximately 75% of the country's bird species (Azpiroz 2001).

Although BDE harbours a diverse array of migratory animals, including cetaceans, birds, turtles, fish, and crustaceans (PROBIDES 1999), birds are by far the best studied group, with at least 170 taxa identified. Migratory birds include: 1) Austral migrants breeding in Patagonia and Southern Atlantic islands during the austral summer, moving northwards for the winter. These include several Patagonian passerines and many marine birds (e.g. penguins, albatrosses, petrels) that make extensive use of wet grasslands, and costal waters. 2) Nearctic species, most of which breed in northern North America during the boreal summer and migrate to South America during the austral summer. Most are shorebirds using mudflats surrounding coastal brackish lagoons, seashores and grasslands as feeding grounds. Some species stay in BDE for the whole wintering season, others also use higher latitude destinations. 3) Neotropical migrants

The White-rumped Sandpiper *Calidris fuscicollis* is probably the most common Nearctic shorebird species in the Bañados del Este. Photo: Adrian Azpiroz.

The Band-tailed or Olrog's Gull *Larus atlanticus*, a globally threatened species, is one of many austral migrants that use the Bañados del Este coastal habitats during the austral winter. Photo: Adrian Azpiroz.

breeding in this region during the austral summer and flying northwards for the winter. Most species are insectivorous passerines using diverse terrestrial habitats (Azpiroz 2001). In addition to these "latitudinal" migrants, several other species of waterfowl (e.g. swans and ducks) make regular "horizontal" movements between the large wetland habitats of South America's southern cone (Argentina, Brazil, Chile and Uruguay) (Belton 1984, Arballo & Cravino 1999). The brackish lagoons located along the coast are South America's most important coastal site for American Golden Plover *Pluvialis dominica* (Morrison & Ross 1989). Upland and wet grasslands provide breeding habitat for several threatened capuchino seedeaters *Sporophila palustris*, *S. cinnamomea*, *S. zelichi* (Stattersfield *et al*. 1998, Azpiroz 2003). The large water bodies, scattered throughout the region, offer feeding, resting and breeding habitat for many regional migratory waterfowl, such as Coscoroba Swan *Coscoroba coscoroba* and Black-necked Swan *Cygnus melanocoryphus* (Vaz-Ferreira & Rilla 1991).

The importance of the region has been nationally and internationally recognized. It has a Biosphere Reserve (UNESCO), a Wetland of International Importance (Ramsar Convention) and is being considered for addition to the Western Hemisphere Shorebird Reserve Network (WHSRN), which would recognize BDE as a crucial link within the set of key sites of continental importance for migratory shorebirds (Rilla 1993, Blanco & Carbonell 2001).

Although relatively large expanses of pristine habitats still remain, the region is threatened by human activities that have already caused considerable habitat loss and fragmentation. Wetlands have been drained for large-scale development of rice

The Marsh Seedeater *Sporophila palustris* is one of the many globally threatened species that inhabit the region. This species breeds in the Bañados del Este during the austral summer and moves to lower latitudes afterwards. Photo: Adrian Azpiroz.

fields, and cattle ranching has resulted in the replacement of tall grass by short grass species (Bucher & Nores 1988). Agricultural activities and their associated infrastructures (irrigation channels, mini-dams, road networks, etc.) have altered the hydrology (PROBIDES 1999). Forestry activity has increased substantially in recent years, mostly for pulp production, and problems at the coast include tourism encroachment and urban development (Canevari *et al*. 2001) resulting in many illegal settlements. Marine life, in particular sea turtles, is threatened by artisanal and recreational fisheries (López-Mendilaharsu *et al*. 2003).

Although most of Uruguay's effectively protected areas are located within BDE, these are still too few and too small to adequately protect the region's biodiversity. Moreover, the possibility of expanding the current protected area network is particularly limited as most of the land (c. 95%) is privately owned. Thus, the development of conservation activities targeting land-use changes must necessarily involve the active participation of landowners and the private sector.

Substantial additional research is necessary to characterize the processes that maintain the biodiversity values of BDE, and long-term studies are required to establish trends in population sizes and to understand the ecological processes behind species' declines. Finally, the lack of a clear environmental regulatory framework has resulted in contradictory government land-use policies and limited law enforcement. The implementation of effective conservation measures will largely depend on the ability to address these political issues.

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