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Waterbirds around the world

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

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Potential new Ramsar sites in northwest Mexico: strategic importance for migratory waterbirds and threats to conservation

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Northwest Mexico supports a critical series of coastal wetlands that sustain vast numbers of resident and migratory waterbirds using the Pacific Flyway in their annual migrations. These key habitats therefore qualify for possible designation as Ramsar sites. However, there is a need to further investigate and document these areas in order to protect them. This note presents the locations of potential new Ramsar sites in Northwest Mexico, the species and numbers of birds and the potential threats for their conservation.

Mexico has a coastal shoreline of more than 11 122 km which includes numerous habitats critical for various types of flora and fauna (Riviera-Arriaga & Villalobos, 2001). Northwest Mexico is formed by four States: Baja California Sur, Baja California, Sonora and Sinaloa. It has a shoreline of approximately 5 140 km representing more than 46% of the total coastline of Mexico. Its existence and location along the Pacific Flyway make this region one of the most important and critical areas in the Americas for migratory and neotropical birds (Engilis *et al.* 1998). The coast supports a rich diversity of habitats and high numbers of waterbirds that use the area as a stop over, resting or wintering site during migrations. Additionally, there are non-literal shorelines of lagoons and wetlands that are important parts of these biological corridors but are currently under represented because of a lack of systematic studies and evaluation or documentation to warrant their Ramsar nomination (Pérez-Arteaga & Gaston 2004).

According to CONABIO (1997) there are 32 priority wetlands in Mexico, eleven located in Northwest Mexico (Engilis *et al.* 1998). However, Pérez-Arteaga *et al.* (2002) indicated that there are 34 wetlands in Mexico that qualify under Ramsar site-selection Criteria 5 and 6. These wetlands are: Ensenada de Pabellones; Bahía de Santa María; Bahía de Topolobampo; Bahía de Agiabampo; Bahía Santa Barbara; Isla Tobarí; Estero de Lobos; Laguna San Quintín; Laguna Ojo de Liebre and Bahía de San Ignacio. Recently the Mexican Government designated 34 new Ramsar sites, three of which are in the Pacific Northwest Region. There are additional wetlands that may qualify as Ramsar sites, but either there is not yet sufficient scientific information or the Federal Government is not aware of their potential importance (Table 1 over).

The Northwest Pacific Coast represents key habitats for several resident and migratory waterbirds, but economic development with pressure to develop new urban centers is a serious threat. Some of the pressures leading to a loss in bio-productivity follow.

Aquaculture industry (shrimp farms)

The national production of farmed shrimp reached 16 000 tons in 2000. Of that production, 95% was from the states of Sinaloa and Sonora (Investigación y Desarrollo 1999). The approximate

total surface area for shrimp farming was 35 000 ha. Unfortunately most shrimp farms are under-regulated environmentally and several have been constructed in fragile ecological ecosystems such as mangroves, intertidal areas, and marsh areas. Effluent contaminated with organic matter and chemical runoff has been pouring directly into adjacent bays as well as altering the natural drainage.

Agriculture and livestock

Several areas near to the coast have been opened up for agricultural or cattle ranching, developments utilizing large applications of agrochemicals with runoff draining directly into adjacent bays. Livestock have been known to cause nesting failure in waterbird colonies (Muñoz & Vega 2002).

Tourism

Recreational and vocational activities along coasts are major factors of nesting failure and disturbance among waterbirds. Boats, ATVs and pets use these areas without any regulation. A mega-project is proposed by an agency of the Federal Government (Escalera Náutica) for the Northwest region, and several yacht marinas are planned in some of the most important waterbird areas.

Fishing

The constant influx of new inhabitants into the coastal areas and the development of more “cooperativas” (associations of fishermen) have been the principal cause of overexploitation of the bays and coastal areas.

OTHER ISSUES

In Northwest Mexico, resident and migratory birds are also affected by egg consumption by local people, killing of chicks for bait for crab fishing, building developments and feral animals around breeding colonies and colony disturbance by tourists and fishermen.

CONCLUSIONS

Although the Federal Government recently designated 34 new Ramsar sites in Mexico, there are other potential sites important for resident and migratory waterbird species. There is a need to establish permanent and systematic monitoring programs in these areas to include wintering and reproductive studies and conservation programs.

Unfortunately, there is a lack of technical and economic resources to undertake such activities. Mexico has partial financial support from the North American Wetland Conservation Act

Table 1. Sites qualifying as potential Ramsar sites in northwest Mexico.

Map number	Site	Species	Population	Source
1	Delta del Río Colorado	Shorebirds	100 000	Harrington 1994
2	Laguna Ojo de Liebre	<i>Phalaropus lobatus</i>	60 000	Carmona pers. comm.
		<i>Podiceps nigricolis</i>	60 000	Carmona pers. comm.
		<i>Calidris mauri</i>	70 000	Garcia pers. comm.
		<i>Limosa fedoa</i>	120 000	Vega (own data)
		<i>Branta bernicla</i>	25 000	Garcia pers. comm.
3	Laguna San Ignacio	Whale reproduction		
4	Parque Nacional Loreto	High biodiversity and endemism		
5	Bahía de Santa María	<i>Calidris mauri</i>	550 000	Vega (own data)
		<i>Fregata magnificens</i>	35 000	
		<i>Limnodromus</i> sp.	24 000	
		<i>Phalaropus tricolor</i>	60 000	
		<i>Phalacrocorax penicillatus</i>	85 000	
6	Verde Camacho	Sea turtle nesting site		
7	Bahía de San Quintín	<i>Branta bernicla</i>	60 000	Garcia pers. comm.
8	Estero Lobos	Shorebirds	31 000	Harrington 1994
9	Isla Tobarí	Shorebirds	55 000	Harrington 1994
10	Bahía de Santa Barbara	Shorebirds	60 000	Harrington 1994
11	Bahía de Topolombapo	Shorebirds	47 000	Harrington 1994
12	Ensenada de Pabellones	<i>Calidris mauri</i>	350 000	Guevara pers. comm.
		<i>Calidris minutilla</i>	150 000	
		<i>Recurvirostra americana</i>	42 500	
		<i>Limnodromus</i> sp.	37 000	
13	Bahía de Caimanero	Shorebirds	110 000	Vega (own data)
		<i>Recurvirostra americana</i>	25 000	
		<i>Calidris mauri</i>	35 000	
14	Bahía de La Paz	<i>Calidris mauri</i>	25 000	Carmona pers. comm.
15	Bahía de Magdalena	<i>Pelecanus occidentalis</i>	46 700	Palacios unpubl. data
		<i>Fregata magnificens</i>	33 500	
		<i>Limosa fedoa</i>	21 146	
		<i>Larus occidentalis</i>	9 467	
		<i>Larus delawerensis</i>	4 950	
16	Puerto Peñascos	Shorebirds	30 000	Harrington 1994
17	Bahía de Kino	Shorebirds	22 000	Harrington 1994
18	Bahía de Guaymas	Shorebirds	24 000	Harrington 1994
19	Agiabampo	<i>Branta bernicla</i>	50 944	Pérez-Arteaga <i>et al.</i> 2002
20	Isla del Farallon	<i>Sula nebouxii</i>	14 000	González pers. comm.
		<i>Sula leucogaster</i>	10 000	
		<i>Larus hermannii</i>	6 000	
21	Bahía de Navachiste	<i>Fregata magnificens</i>	25 000	González pers. comm.
		<i>Sterna maxima</i>	10 000	
		<i>Branta bernicla</i>	5 000	
22	Bahía Guadalupe	Shorebirds	55 000	Harrington 1994
23	Bahía de Ceuta	<i>Calidris mauri</i>	20 000	Vega (own data)
		<i>Phalaropus tricolor</i>	15 000	
		<i>Recurvirostra americana</i>	15 000	
		<i>Charadrius alexandrinus</i>	650	
		<i>Sterna maxima</i>	2 500	

(NAWCA) by the Government of the United States of America for non-governmental organizations and institutions to work on wetland conservation projects. However, the funds are inadequate to support much needed additional scientific research.

The potential Ramsar sites included in this presentation represent the efforts of ornithologists monitoring a diverse array of conservation activities in the Pacific Northwest but whose information has unfortunately not been published or used by the Mexican Government for conservation purposes. There is need to plan, conserve and manage the coastal areas that can help to protect important and crucial waterbird areas; otherwise, the coastal wetlands and waterbirds are going to be further imperiled.

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Internationally important numbers of Marbled Godwit *Limosa fedoa* occur at the Bahía de Magdalena, Mexico. Photo: Rob Robinson.