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WATER BIRD AND SHOREBIRD COUNTS IN THE PROVINCE OF MATANZAS, CUBA

J. Paul Goossen

Pedro Blanco¹

Jacques Sirois

Hiram González Alonso¹

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¹ Instituto de Ecología y Sistemática, Academia de Ciencias de Cuba, Carretera de Varona Km 3½, Capdevila, Boyeros, Apartado postal 8010, Código postal 10800, La Habana 8, Cuba

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ABSTRACT

Counts of water birds and shorebirds were made in the province of Matanzas in Cuba during 14-21 February 1990. Forty-three species and at least 2246 individuals were recorded. The relatively few individuals seen suggest that, at least in February, narrow shores, which are subject to small tidal fluctuations, and drying inland conditions, contribute to unfavourable habitat for shorebirds and water birds. Extensive surveys of coastal and wetland habitats at different times of the year are needed to identify the archipelago's critical staging, wintering and breeding sites.

RÉSUMÉ

Nous avons effectué un inventaire d'oiseaux aquatiques et d'oiseaux de rivage dans la province de Matanzas, Cuba, entre le 14 et le 21 février 1990. Nous avons dénombré 43 espèces et au moins 2 246 individus, ce qui représente relativement peu d'oiseaux. Cela semble être dû au fait que, du moins en février, le littoral, qui est baigné par des marées de faible amplitude, soit étroit et que les zones marécageuses de l'intérieur soient

desséchées. Seuls des inventaires exhaustifs des milieux côtiers et humides durant différentes époques de l'année permettront d'identifier les sites d'hivernage et de nidification et les haltes migratoires critiques de l'archipel.

RESUMEN

Hemos realizado un censo de aves acuáticas y de aves playeras en la provincia de Matanzas, Cuba, desde el 14 al 21 de febrero de 1990. Registramos cuarenta y tres especies y al menos 2 246 individuos. En nuestro recorrido, hemos visto en total relativamente pocas aves. Puede ser que se deba a que durante el mes de febrero el litoral, bañado por mareas de escasa amplitud, es estrecho, y las zonas pantanosas del interior se encontraban notablemente secas. Sólo censos exhaustivos de los hábitats costeros y húmedos durante distintas épocas del año permitirán identificar las areas críticas del archipiélago durante las migraciones, el invierno y la época de cría.

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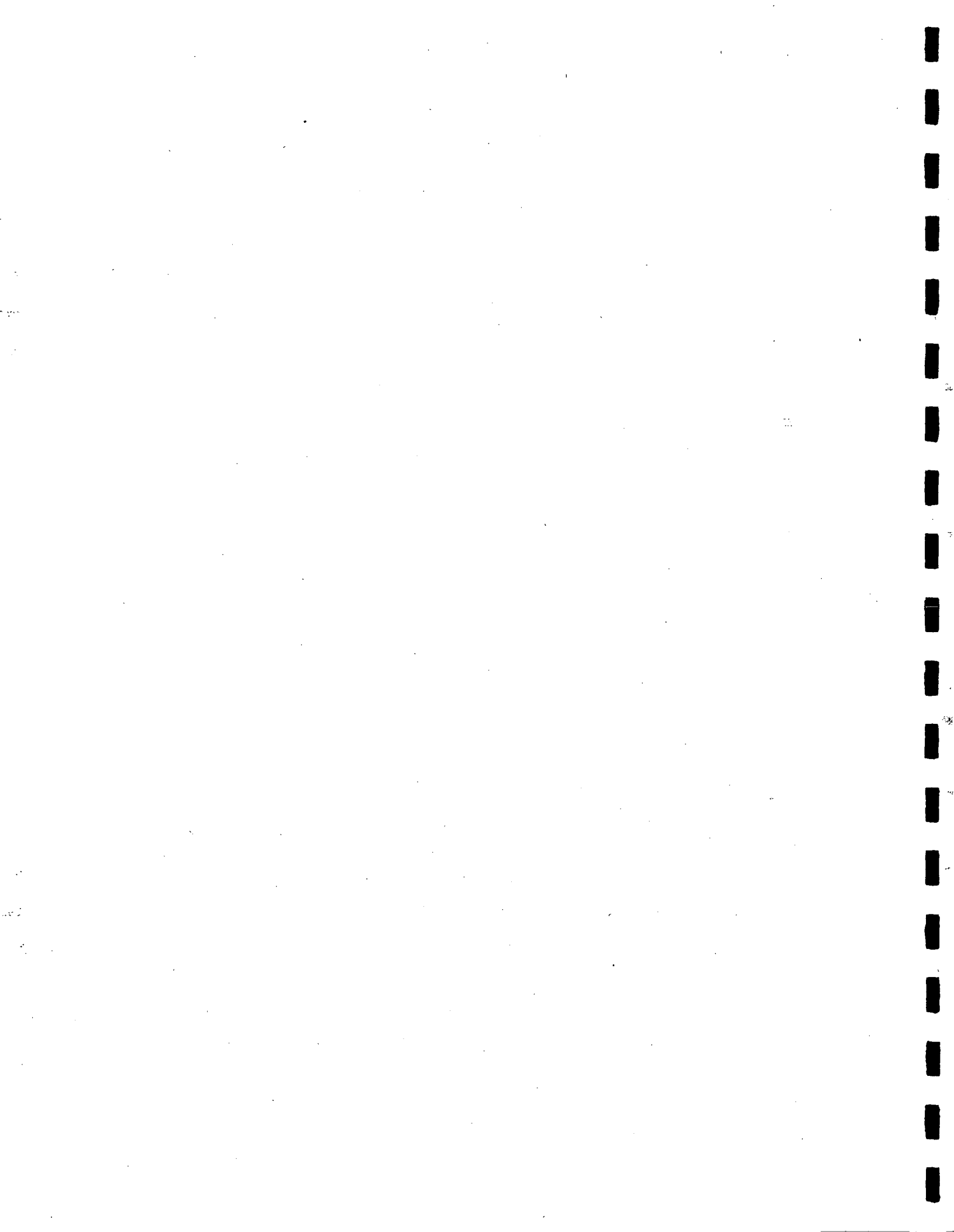
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INTRODUCTION

We took the opportunity to record water birds and shorebirds encountered in wetlands and coastal areas of Cuba while carrying out surveys for Piping Plovers (Charadrius melodus) in 1990 (Blanco et al. 1993b). Information on water bird and shorebird numbers is scarce for Cuba and the contribution of this report will assist in documenting their distribution and abundance. In this paper, we primarily emphasize shorebirds and their habitats.

METHODS AND STUDY AREA

We counted birds in the province of Matanzas (Figure 1) during 14-21 February 1990 (Table 1). Birds were recorded from a vehicle or as we walked. Binoculars and a spotting scope were used to aid identification and counting. Bird numbers which were recorded as a range, were averaged and the rounded off number was then taken as the count value. The lowest count per species was used for counts at Salinas de Bidos on 17 February as birds were counted on the outgoing and return trip in that area.

As much of the shoreline between Havana and Varadero as possible was viewed from the vehicle as we traveled to the Península de Hicacos. About 11 km of coastline of the Península de Hicacos were surveyed including observations made at Laguna Mangón and Laguna Mangoncito, both situated near the tip of the

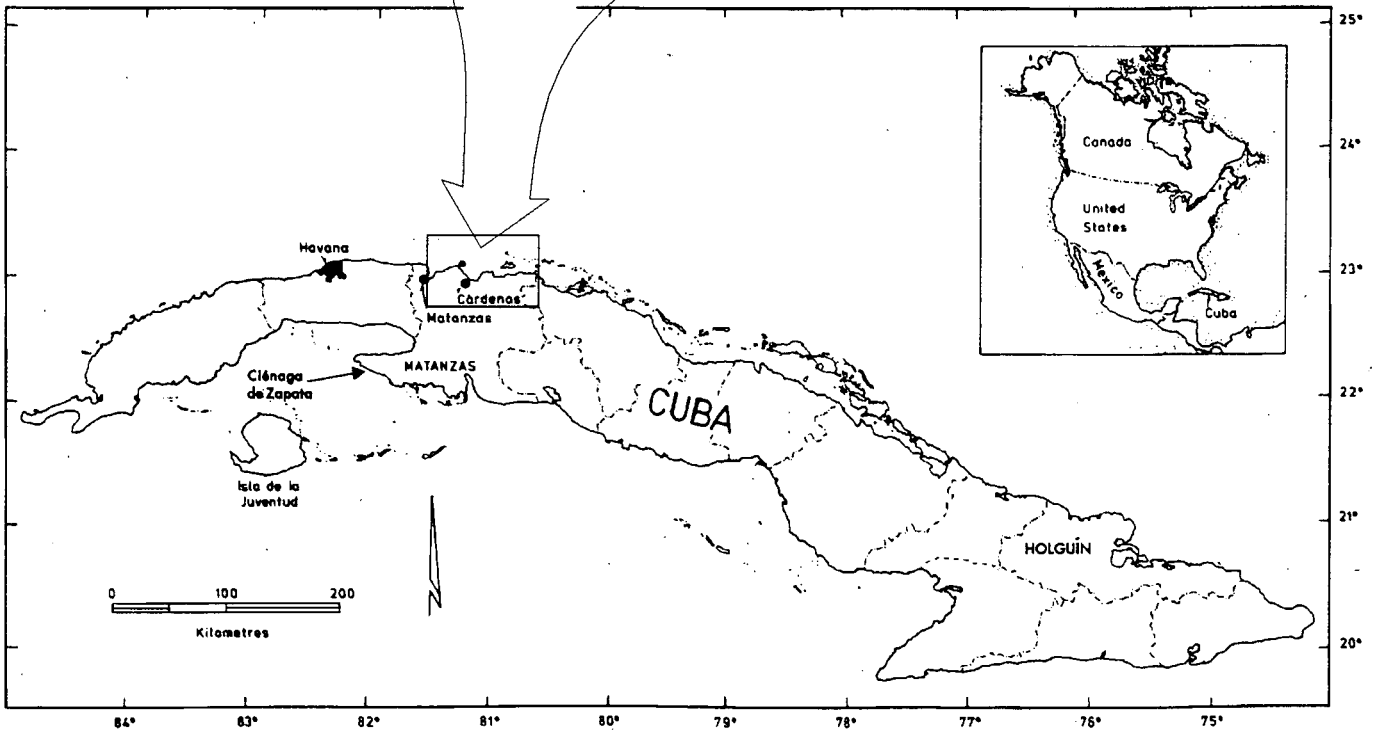


Figure 1. Study area in the province of Matanzas, Cuba.

Table 1. Dates and locations of surveys in the province of
Matanzas, Cuba.

Date	Location
(1990)	
14 February	Península de Hicacos Cárdenas
15 February	Península de Hicacos Ciénaga del Bibanasi Canal de la Manuí
16 February	Salinas de Bidos
17 February	Salinas de Bidos Salinas de Barranea
18 February	Salinas de Bidos
19 February	Cruised by keys northwest of La Teja; one of the Cayos Ingles
20 February	Cruised by keys northwest of La Teja; Cayo Pinimini
21 February	Salinas del Concunil Salinas de Bidos

peninsula. Additional areas on the peninsula were viewed from the vehicle as we travelled between sites. At Cárdenas, we made observations along a 0.3 km stretch of shore along the Bahía de Cárdenas and along 0.3 km of an artificial peninsula by the Cárdenas harbour. About 13 km of coastline and adjacent salt pan habitat were surveyed at the Salinas de Bidos and Salinas de Barranea as were 7 km of inland wetland habitat including Ciénaga del Bibanasi and Salinas del Concunil. We also cruised by boat past an estimated 25 km of habitat in the keys but made limited ground surveys (< 3 km).

Nomenclature used in this report follows that of the American Ornithologists' Union (1983). Species names are listed in Table 3. Tide information was recorded at Cárdenas, courtesy of Seguridad Maritima.

RESULTS

1. General Habitat Characteristics

1.1. Havana to Varadero

Most of the shoreline seen appeared unsuitable for shorebirds and included "dog tooth" limestone rock formation.

1.2. Península de Hicacos

Shore width varied from 0-50 m. Beaches were composed of sand with generally little detritus cover but up to 50% cover was noted near the tip of the peninsula. Laguna Mangón is an old salt pan and appeared to be relatively unsuitable for shorebirds. The shore width ranged from 0 - 20 m with litter, rock, sticks, and foam present. Laguna Mangoncito also provided poor shorebird habitat with a narrow shore (0-6 m) and some rocky shoreline.

Other parts of the peninsula appeared to be unsuitable because of mangroves, riprap, cliffs, and rock. The Varadero beach was sandy with some "dogtooth" rock formation. The beaches are used widely by tourists and sand is raked and churned up with the aid of tractors for beach maintenance purposes. Some cliffs were located to the northeast of this beach. A point to the south of the peninsula's base, Punto Tío Pancho, appeared to be unsuitable as it was lined, at least in part, with mangroves.

1.3. Cárdenas

Good mudflat habitat occurs in the Bahía de Cárdenas, near Cárdenas. Conversely, an artificial spit created to protect the harbour, and which is composed of coarse gravel and cobble with a 2-5 m shore width, provides marginal shorebird habitat. Tidal amplitude was about 0.5 m (Table 2).

Table 2. Tide fluctuations near Cárdenas, 14-22 February 1990.

Date	Hour	Height (m)
<u>February</u>		
14	1202	+0.36
	1834	-0.03
15	0024	+0.24
	0609	0.00
	1239	+0.35
	1927	-0.01
16	0059	+0.19
	0634	0.00
	1321	0.33
	2028	0.00
17	0043	+0.14
	0704	+0.01
	1411	+0.31
	2138	-0.01
18	0247	+0.11
	0732	+0.02
	1513	+0.29
	2251	-0.02
19	0418	+0.09
	0922	+0.03
	1625	+0.29
	2354	-0.05
20	0545	+0.10
	1054	+0.02
	1734	+0.30
21	0046	-0.04
	0648	+0.14
	1205	0.00
	1835	+0.33
22	0130	-0.10
	0735	+0.19
	1302	-0.02
	1929	+0.37

1.4. Ciénaga del Bibanasi

The lagoon we visited in this wetland had reddish soil, dry mud and was 50% flooded. Blanco noted on an earlier visit that the lagoon had been completely covered with water. Most of the wetland is surrounded by mangroves which may be suitable roost and nest sites for herons and egrets.

1.5. Canal de la Manuí

There was little if no shorebird habitat at this site as it was lined with mangroves, but the area may have served as roosting habitat for herons and egrets.

1.6. Salinas de Concunil

Semi-dry mudflat up to 200 m wide and at least 6 km long (as far as we went). The area has potential use by large numbers of shorebirds and probably serves as a feeding site for water birds as well.

1.7. Salinas de Bidos

Beach width varied from 0.5 - 30 m and was lined in places with mangroves. Much of the coast at this site is adjacent to salt pans. An adjacent lagoon where Snowy Plovers were seen had gravel habitat. Maximum tidal flats seen were about 60-75 m. This area provided a diversity of habitats including coastal,

salt pan, lagoon and mangrove habitats thereby providing a variety of habitats for shorebirds and water birds.

1.8. Keys

The keys we saw generally provide poor shoreline habitat for shorebirds. Beaches ranged from 0-18 m wide and were mostly sandy, with little or no intertidal zone, or were invaded by mangroves. Sandbars with mangroves and grasses were also noted. Sandy beaches were seen only on the north side of keys particularly on the open ocean side. Approximately 40% of one beach on Cayo Pinimini was covered by loose vegetation and garbage while Cayo Galindo also had much loose vegetation litter. There appeared to be limited feeding areas for wading birds on the beaches of these keys but flooded portions of the keys may provide feeding habitat. The presence of mangroves also offers potential roosting and nesting sites.

2. Water bird and shorebird counts

A total of 43 species was recorded (Table 3) representing 14 taxonomic families (Table 4). The Scolopacidae (sandpipers) were represented by 10 species, the most of all families

Table 3. Continued

Species	Location							
	A	B	C	D	E	F	G	H
Greater Flamingo (<u>Phoenicopterus ruber</u>)				2 ⁺ ^c	57	12		1
Northern Shoveler (<u>Anas clypeata</u>)								1
American Wigeon (<u>Anas americana</u>)					70			
Red-breasted Merganser (<u>Mergus serrator</u>)					16			
Unidentified Duck								17
Clapper Rail (<u>Rallus longirostris</u>)					1	2		
Unidentified Rail				1				
Black-bellied Plover (<u>Pluvialis squatarola</u>)	60	135	11	3	12		1	4
Snowy Plover (<u>Charadrius alexandrinus</u>)					18			
Wilson's Plover (<u>Charadrius wilsonia</u>)					1			9
Semipalmated Plover (<u>Charadrius semipalmatus</u>)	2		1	2	7		1	2
Piping Plover (<u>Charadrius melodus</u>)					1 ^d			
Killdeer (<u>Charadrius vociferus</u>)	6	5		3	6			2
American Oystercatcher (<u>Haematopus palliatus</u>)		1						

Continued

Table 3. Continued

Species	Location							
	A	B	C	D	E	F	G	H
Unidentified shorebirds		1					4	
Laughing Gull (<u>Larus atricilla</u>)	2	1		3	11	20 ⁺	16	2
Bonaparte's Gull (<u>Larus philadelphia</u>)		1						
Ring-billed Gull (<u>Larus delawarensis</u>)				1	1	2		
Caspian Tern (<u>Sterna caspia</u>)				1 ^c	2			
Royal Tern (<u>Sterna maxima</u>)	15				4	1		
Sandwich Tern (<u>Sterna sandvicensis</u>)	20							
Forster's Tern (<u>Sterna forsteri</u>)		9						
Black Skimmer (<u>Rynchops niger</u>)		2 ^f						
Gulls/Terns					11		41	
Unidentified Tern		25			3			
Belted Kingfisher (<u>Ceryle alcyon</u>)				2				

^a A= Península de Hicacos

B= Cárdenas area

C= Ciénaga del Bibanasi

D= Salinas de Bidos - west of La Teja.

Table 3. Continued

E= Salinas de Bidos - east of La Teja.

Salinas de Barranea

F= Salinas de Bidos - port area.

G= Keys northwest, north and northeast of La Teja.

H= Salinas del Concunil

^b Underestimated - see text. Most possibly Tricolored Herons.

^c Only two individuals seen but numerous individuals heard in background.

^d Blanco et al. 1993b.

^e Metal band on right leg.

^f Remains found.

Table 4. List of families and number of species encountered.

Family	Number of Species
Pelecanidae	1
Phalacrocoracidae	2
Fregatidae	1
Ardeidae	6
Threskiornithidae	1
Phoenicopteridae	1
Anatidae	3
Rallidae	1
Charadriidae	6
Haematopodidae	1
Recurvirostridae	1
Scolopacidae	10 ^a
Laridae	8
Alcedinidae	1

^a Dowitcher spp. counted conservatively as one species.

recorded, while the Laridae (gulls, terns and skimmers), were the next most common family with 8 species. The Ardeidae (herons and egrets) and Charadriidae (plovers) were next most represented, each with six species (Table 4). Of the minimum 2246 individuals recorded, most (61%) were shorebirds followed by cormorants (16%). Ardeidae were more abundant than stated in Table 3 as at Ciénaga del Bibanasi one flock was not recorded but estimated to be less than 100 individuals. Also underestimated were Greater Flamingos, as a colony of flamingoes was heard but not seen, west of La Teja. Although our counts were conservative, it is possible that some duplication occurred.

DISCUSSION

We saw relatively few water birds in the province of Matanzas and most birds seen were shorebirds. Water birds may have been limited by drying conditions inland. Blanco et al. 1993a reported that counts carried out between 1989 and 1992 on the Peninsula de Hicacos showed that "*Charadriiformes* was the most representative Order than others such as *Pelicaniformes* and *Ciconiiformes*." The authors remarked that species noted for their abundance in their counts were Least Sandpipers, Western Sandpipers, Semipalmated Sandpipers and Black-necked Stilts.

Few shorebirds were observed during our surveys in the

province of Matanzas. Numbers for some species were greater in fall of 1989 than in winter of 1990. For example, Blanco (unpubl. data) observed 1500 shorebirds at a site near Cárdenas on 16 October 1989, of which 70% were Wilson's Plovers. In the province of Matanzas, we saw approximately 1370 shorebirds of which less than 1% were Wilson's Plovers for all locations visited in February 1990 (Table 1). The influx of fall migrants may have accounted for the greater numbers in the fall. Also habitat conditions near Cárdenas were apparently more favourable in the fall of 1989 since water levels were lower than in February 1990. This would have exposed more mudflats which would be attractive to shorebirds. The greater water bird and shorebird count of 7388 individuals in October 1990 (Blanco et al. 1993a) over the February 1990 count (this paper) of 2246 (minimum) was believed to be related to the arrival of fall migrants (Blanco et al. 1993a).

Habitat, as determined from our surveys in February 1990 was relatively poor for shorebirds because of narrow shorelines, limited tidal fluctuations (up to about 0.5 m - see Table 2) and apparently sterile sandy shores. Inland lagoons such as the Salinas de Concunil had relatively little water but could be good water bird and shorebird habitat during the wet season.

Shorebirds occur in large numbers elsewhere in Cuba. One of us, Sirois, has seen thousands of shorebirds in the Ciénaga de Zapata (Figure 1) during January 1988 and 1989 and on mudflats of large lagoons at low tide in the province of Holguín during January 1992. More surveys are required to determine the distribution and abundance of shorebirds in Cuba.

There has been significant interest in the importance of shorebird stopover sites in the Western Hemisphere (Morrison and Myers 1989). Wintering ground surveys have also been carried out in South America (Morrison and Ross 1989) and Mexico (Morrison et al. 1993). To facilitate conservation of coastal habitat and resident and migratory water birds and shorebirds it is essential that critical avian staging and overwintering sites be identified in Cuba.

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