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The Central American Waterbird Census



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Final 2012 Report

Including a summary of the 2011 pilot census

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Arne J. Lesterhuis
(BirdLife International)

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Introduction

The Central American Waterbird Census (CAWC) is an initiative of BirdLife International, the Waterbird Conservation Council and Wetlands International, supported in 2012 by the Canadian Wildlife Service, and forms part of the International Waterbird Census (IWC). The IWC is a program of Wetlands International first established in Europe in 1967 which since the 1990s has also covered Africa, Asia and South America. The goals of the IWC are to monitor changes in waterbird numbers and distribution, to improve knowledge of little-known waterbird species and wetland sites, to identify and monitor sites that qualify as Wetlands of International Importance under the Ramsar Convention on Wetlands, to provide information on the conservation status of waterbird species, and to increase awareness of the importance of waterbirds and their wetland habitats at local, national and international levels.

In Latin America and the Caribbean, the IWC has been implemented in South America since 1990, as the Neotropical Waterbird Census (NWC), coordinated by Wetlands International. In 2008, the Society for the Conservation and Study of Caribbean Birds initiated the development of a Caribbean Waterbird Census (CWC), partly based on the NWC, and in February 2011 launched the first region-wide CWC. During 2000 to 2007, Ducks Unlimited organized bi-annual waterfowl surveys in Central America, the Caribbean and northern South America, but there have been no regionally-coordinated waterbird surveys in 2007 since then. Recognizing this significant geographic gap, the Waterbird Conservation Council approached both Wetlands International and BirdLife International to initiate steps towards establishing a waterbird census in Central America. An initial trial was held in July 2011 with support from the National Museum of Costa Rica, Panama Audubon Society and Fundación Natura (Panama).

This report presents a summary of the results of the Central American Waterbird Census carried out in February-March and July 2012, but also the results of the pilot census carried out in July 2011.

CAWC 2012

The main goal of the 2012 census (and the 2011 pilot) is to generate interest in, and raise awareness of the importance of monitoring waterbirds. Both are seen as key components in building a regular, primarily voluntary, waterbird census in Central America.

Methodology

The CAWC has been implemented following the methodology of the NWC. Lead organizations in each Central American country were contracted to coordinate and undertake the census (see Terms of Reference in Annex 1), and were asked to define key sites for the census and encourage census participants to undertake at least one waterbird census at a key wetland site. Key wetland sites are considered to be Ramsar site, wetland Important Bird Areas (IBAs), wetlands Protected Areas or WHSRN.

Data were collected on slightly modified version of the standard two NWC forms (see Annex 2), and three options were provided for submitting the data: via the national coordinating organizations, to the e-mail address censo.avesacuaticas.ca@gmail.com, or via eBird <http://ebird.org/content/ebird> (in which case participants were asked to add “Central American waterbird census” to the note section).

Participating institutions

The following institutions have been participating in the CAWC in 2011 and/ or 2012:

Sociedad Audubon de Panamá – Panama

Natura Panamá – Panama

Wetlands International – Panama

Museo Nacional de Costa Rica – Costa Rica

Unión de Ornitólogos – Costa Rica

Dirección General de Observatorio Ambiental

Ministerio de Medio Ambiente y Recursos Naturales – El Salvador

Salva Natura – El Salvador

Sociedad Hondureña de Ornitología – Honduras

Belize Audubon Society - Belize

Flora & Fauna International - Nicaragua

Of these, Belize only participated in February-March 2012



Nearctic shorebirds at Bahía Jiquilisco - Isla Pajarito (IBA: Jiquilisco - Jaltepeque), El Salvador. (July 2012). ©Alvaro Moisés

Central American Waterbird Census results 2011-2012

Results of the July 2011 census

During the pilot of the CAWC in July 2011, five of the seven Central American countries participated: Costa Rica, El Salvador, Honduras, Nicaragua and Panama (Table 1). Surveys were carried out at 16 sites in these five countries, all being IBAs. A total of 61 waterbird species, comprising 17 families, were recorded and 4.443 individuals counted.

Table 1. Summary of number of species and individuals recorded at each site during the Pilot CAWC in 2011.

Country	Site	Total species	Total count
Costa Rica	Río Tempisque- transecto Bolsón á Isla de Pajaros (IBA Parque Nacional de Palo Verde)	14	521
	Humedal Palo Verde (IBA Parque Nacional de Palo Verde)	7	231
	Laguna La Bocana (IBA Parque Nacional de Palo Verde)	10	21
	La Catalina- Puente La Espuela (IBA Parque Nacional de Palo Verde)	10	70
	Isla de Pajaros (IBA Parque Nacional de Palo Verde)	10	433
	Laguna Varillal (IBA Parque Nacional de Palo Verde)	7	67
Sub-total			1.343
El Salvador	IBA Volcán de San Miguel/ Laguna el Jocotal	13	91
	Bahía Jiquilisco - Arcos del Espino (IBA: Jiquilisco - Jaltepeque)	15	186
	Bahía Jiquilisco - Isla Pajarito (IBA: Jiquilisco - Jaltepeque)	17	146
	Bahía Jiquilisco - Bocana San Juan del Gozo (IBA: Jiquilisco - Jaltepeque)	17	147
	Bahía Jiquilisco - Puerto Parada (IBA: Jiquilisco - Jaltepeque)	21	129
Sub-total			699
Honduras	IBA Refugio de Vida Silvestre Cuero y Salado	21	138
Sub-total			138
Nicaragua	IBA Laguna de Tisma (Reserva Natural)	13	112
Sub-total			112
Panama	Bahía Chorrera, Puesto Caimito (IBA Bahía de Chorrera)	8	109
	Costa del Este (IBA Parte Alta de la Bahía de Panamá)	20	1.797
	Área de Uso Múltiple Ciénaga de Las Macanas (IBA Humedales de Santa María)	18	245
Sub-total			2.151
Final Total			4.443

Comments on sites

Most sites were surveyed in Costa Rica, where six sub-sites of the IBA Parque Nacional de Palo Verde (CR003) were visited for the census. El Salvador surveyed a total of five sites, including four sub-sites of IBA Bahía Jiquilisco (SV014). The country with the highest number of waterbirds counted was Panama where a total of 2.151 waterbirds were recorded. In Costa Rica a total of 1.343 waterbirds were counted, representing the second highest count. The site with the highest count of waterbirds was Costa del Este, Panama, where 1.797 waterbirds were counted. This site lies within the IBA "Parte Alta de la Bahía de Panamá" (PA041). The high number was mainly due to the relatively high number

of the Magnificent Frigatebird *Fregata magnificens* (700 individuals), Neotropical Cormorant *Phalacrocorax brasilianus* (322 individuals) and Semipalmated Plover *Charadrius semipalmatus* (510 individuals).

Sites with a high diversity of species included Refugio de Vida Silvestre Cuero y Salado in Honduras (21 species), Bahía Jiquilisco - Puerto Parada, Usulután in El Salvador (21 species), Costa del Este in Panama (20 species) and Área de Uso Múltiple Ciénaga de Las Macanas also in Panama (18 species).

Comments on species

In 2011, the species most commonly recorded species in terms of abundance were *F. magnificens* (736 individuals), Cattle Egret *Bubulcus ibis* (582 individuals) and *C. semipalmatus* (523 individuals) (Table 2). When looking at most commonly recorded species in terms of observation in number of sites, leading species is Great White Heron *Casmerodius albus* (13 sites), followed by Little Blue Heron *Egretta caerulea* (ten sites) and Green Heron *Butorides virescens* at nine sites. Two species of globally conservation concern were recorded, including an individual of the Near-threatened Elegant Tern *Thalasseus elegans* and seven Semipalmated Sandpipers *Calidris pusilla*, a species recently up-listed to Near-threatened according to the UICN Red list 2012.

Although early, in July the first migratory waterbird species start arriving in Central America and during the waterbird census a total of 23 of these Nearctic migrants were recorded (Table 2). More than half are shorebird species of the families Charadriidae and Scolopacidae. Most numerous was the previously mentioned *C. semipalmatus*, though other species with relatively high numbers for July included Marbled Godwit *Limosa fedoa* (85 individuals), Laughing Gull *Leucophaeus atricilla* (86 individuals), Royal Tern *Thalasseus maximus* (69 individuals) and Whimbrel *Numenius phaeopus* (67 individuals). In total, 1.111 Nearctic migrants were recorded during the census, representing 25% of the total of waterbirds counted in July 2011.

Table 2. Summary of families, species and counts of recorded waterbirds during the Pilot CAWC in 2011.

Family	Species	NM*	Count	N sites	N countries
Anatidae	<i>Dendrocygna bicolor</i>		7	2	2
	<i>Dendrocygna autumnalis</i>		140	7	4
	<i>Cairina moschata</i>		1	1	1
	<i>Anas discors</i>	X	1	1	1
Pelecanidae	<i>Pelecanus occidentalis</i>		187	6	3
Phalacrocoracidae	<i>Phalacrocorax brasilianus</i>		396	8	4
Anhingidae	<i>Anhinga anhinga</i>		70	8	3
Fregatidae	<i>Fregata magnificens</i>		736	5	4
Ardeidae	<i>Tigrisoma mexicanum</i>		16	6	2
	<i>Cochlearius cochlearius</i>		2	2	2
	<i>Botaurus pinnatus</i>		1	1	1
	<i>Ixobrychus exilis</i>		1	1	1
	<i>Nycticorax nycticorax</i>		105	5	2
	<i>Nyctanassa violacea</i>		11	2	2
	<i>Butorides virescens</i>		45	9	4
	<i>Butorides striata</i>		15	1	1
	<i>Bubulcus ibis</i>		582	6	3
	<i>Ardea herodias</i>	X	10	2	2

	<i>Casmerodius albus</i>		292	13	4
	<i>Egretta tricolor</i>		13	6	4
	<i>Egretta thula</i>		25	6	4
	<i>Egretta caerulea</i>		75	10	4
Threskiornithidae	<i>Eudocimus albus</i>		21	7	3
	<i>Plegadis falcinellus</i>		4	1	1
	<i>Platalea ajaja</i>		6	3	2
Ciconiidae	<i>Mycteria americana</i>		39	5	3
Aramidae	<i>Aramus guarauna</i>		15	1	1
Rallidae	<i>Laterallus ruber</i>		3	1	1
	<i>Porzana carolina</i>	X	3	1	1
	<i>Porphyrio martinica</i>		75	5	2
Heliornithidae	<i>Heliornis fulica</i>		1	1	1
Charadriidae	<i>Vanellus chilensis</i>		6	1	1
	<i>Pluvialis squatarola</i>	X	13	6	3
	<i>Charadrius semipalmatus</i>	X	523	4	3
	<i>Charadrius wilsonia</i>		35	4	1
	<i>Charadrius collaris</i>		30	3	3
Haematopodidae	<i>Haematopus palliatus</i>		21	3	1
Recurvirostridae	<i>Himantopus mexicanus</i>		59	2	2
Scolopacidae	<i>Limnodromus griseus</i>	X	62	5	2
	<i>Limosa fedoa</i>	X	85	3	1
	<i>Numenius phaeopus</i>	X	67	8	4
	<i>Actitis macularius</i>	X	9	2	2
	<i>Tringa melanoleuca</i>	X	2	1	1
	<i>Tringa flavipes</i>	X	2	2	2
	<i>Tringa semipalmatus</i>	X	38	4	1
	<i>Arenaria interpres</i>	X	21	4	3
	<i>Calidris alba</i>	X	11	2	1
	<i>Calidris pusilla</i>	X	7	1	1
	<i>Calidris mauri</i>	X	21	3	2
	<i>Calidris minutilla</i>	X	1	1	1
Jacanidae	<i>Jacana jacana</i>		64	1	1
	<i>Jacana spinosa</i>		197	6	3
Laridae	<i>Leucophaeus atricilla</i>	X	86	5	4
	<i>Sterna antillarum</i>		11	3	2
	<i>Gelochelidon nilotica</i>		3	1	1
	<i>Sterna hirundo</i>	X	10	1	1
	<i>Chlidonias niger</i>	X	6	2	1
	<i>Thalasseus elegans</i>	X	1	1	1
	<i>Thalasseus sandvicensis</i>	X	63	3	2
	<i>Thalasseus maximus</i>	X	69	4	2
	<i>Rynchops niger</i>		22	2	2

*Nearctic Migrant

Results of the February-March 2012 Census

During this second trial of the Central American Waterbird Census carried out during February and March 2012, six of the seven Central American countries participated; with only Guatemala not participating. Surveys were carried out at 22 sites (Table 3), including at nine Important Bird Areas (IBAs). A total of 79 waterbird species, comprising 20 families, were recorded and 19,233 individuals counted.

Comments on sites

Most sites were surveyed in El Salvador (Table 3), where a total of 12 sites were visited, including four sub-sites of the IBA Jiquilisco – Jaltepeque (SV014). Most IBAs were surveyed in Panama, where three of the four surveyed sites were IBAs, and in Costa Rica where all three sites visited were IBAs (Table 1). The country with the highest total count of waterbirds was Costa Rica (5,697 individuals), followed by El Salvador (5,178 individuals) and Panama (4,883 individuals). At the site level, the highest count of waterbirds was at Humedal Palo Verde (sub-site of IBA Parque Nacional Palo Verde) where 3,396 waterbirds were counted. This high number includes a high count of 2,400 Black-bellied Whistling Duck *Dendrocygna autumnalis*. Also Costa del Este (sub-site of IBA Parte Alta de la Bahía de Panamá) had a relatively high number of waterbirds again, with a total of 1,936 individuals.

Sites with the highest diversity of species include Bocana del Río Jiboa (IBA: Jiquilisco - Jaltepeque) and the Río Jiboa in El Salvador where respectively 37 and 36 waterbird species were recorded (table 1). Other sites with high species diversity included the Refugio de Vida Silvestre Cuero y Salado in Honduras (35 species), Llanuras y Humedales del Caribe in Costa Rica (34 species) and Crooked Tree Wildlife Sanctuary in Belize (31 species).

Table 3. Summary of the number of species and individuals recorded at each site during the CAWC in February-March 2012

Country	Site	Total species	Total count
Costa Rica	Humedal Palo Verde - Parque Nacional Palo Verde	28	3,396
	Manglares y franja costera del Golfo de Nicoya	30	982
	Llanuras y Humedales del Caribe	34	1,319
		Sub-total	5,697
El Salvador	Bocana de La punta El Tamarindo y Salinera Maculíz	21	330
	Bocana del Río Jiboa (IBA: Jiquilisco - Jaltepeque)	37	383
	Humedal La Pita	8	560
	Estero de Jaltepeque - La Puntilla e Isla Tasajera (IBA: Jiquilisco - Jaltepeque)	7	18
	La Pita, desembocadura del Río Lempa	13	98
	Humedal de Guadalupe La Zorra (IBA: Jiquilisco - Jaltepeque)	14	366
	Salinera Handal, Puerto Parada-Jiquilisco (IBA: Jiquilisco - Jaltepeque)	23	502
	Playa Los Pinos	17	233
	Playa Las Bocanitas	12	109
	Río Jiboa	36	1,675
	Playa San Diego	17	374
	Playa Toluca	19	530
		Sub-total	5,178
Honduras	Refugio de Vida Silvestre Cuero y Salado	35	255

		Sub-total	255
Belize	Crooked Tree Wildlife Sanctuary	31	904
		Sub-total	904
Panama	Costa del Este (IBA: Parte Alta de la Bahía de Panamá)	27	1.936
	Bahía Chorrera, Puesto Caimito (La Chorrera)	6	281
	Panamá La Vieja -Bahía de Panamá (IBA: Parte Alta de la Bahía de Panamá)	19	1.611
	Área de Uso Múltiple Ciénaga de Las Macanas (IBA: Humedales de Santa María)	29	1.055
		Sub-total	4.883
Nicaragua	Humedal Istian - Reserva de Biosfera Isla de Ometepe	23	2.316
		Sub-total	2.316
		TOTAL	19.233

Comments on species

During the February-March census, the most commonly recorded waterbird in terms of abundance were *D. autumnalis* (5.169 individuals), *T. maximus* (1.352) and *L. atricilla* (1.086 individuals), the latter two being Nearctic migrants (Table 4). In terms of number of observations, the most frequently recorded species included the Spotted Sandpiper *Actitis macularius*, which was recorded at 20 sites, *C. albus* and *E. caerulea* were recorded in 18 sites, Tricolored Heron *Egretta tricolor* at 17 sites, and Snowy Egret *Egretta thula* and Black-necked Stilt *Himantopus mexicanus* were recorded at 16 sites (Table 4). Three species considered Near-threatened at the global level were recorded, including *T. elegans* (10 individuals), *C. pusilla* (1 individual) and the Reddish Egret *Egretta rufescens* (37 individuals).



Photo 1. American Avocet *R. americana* at Costa del Este (Panama). ©Rosabel Miro

As can be expected in February-March, a large number of Nearctic migrants were recorded during the census. A total of 37 species were recorded, again mostly represented by shorebirds of the families Charadriidae and Scolopacidae (table 4). Some records were clearly of note, including a number of

North American-breeding waterfowl species like the American Wigeon *Anas americana* and the Northern Pintail *Anas acuta*, that occurred further south than is usual. Also of interest were six individuals of the American Avocet *Recurvirostra americana* that were observed in Panama (Photo 1). Species for which large numbers were observed included the previously mentioned *L. atricilla* and *T. maximus*. In total, 6,921 Nearctic migrants were recorded during the census, representing 36% of the total of waterbirds counted in February-March 2012.

Table 4. Summary of recorded families, species and counts of waterbirds during the CAWC in February-March 2012

Family	Species	Count	NM*	N sites	N countries
Anatidae	<i>Dendrocygna bicolor</i>	2		1	1
	<i>Dendrocygna autumnalis</i>	5,169		6	5
	<i>Cairina moschata</i>	56		3	3
	<i>Anas americana</i>	3	X	2	2
	<i>Anas acuta</i>	1	X	1	1
	<i>Anas discors</i>	799	X	11	6
	<i>Anas clypeata</i>	63	X	4	2
	<i>Aythya affinis</i>	1	X	1	1
Podicipedidae	<i>Tachybaptus dominicus</i>	15		1	1
Pelecanidae	<i>Pelecanus occidentalis</i>	237		10	4
Sulidae	<i>Sula leucogaster</i>	1		1	1
Phalacrocoracidae	<i>Phalacrocorax brasilianus</i>	990		11	6
Anhingidae	<i>Anhinga anhinga</i>	13		5	4
Fregatidae	<i>Fregata magnificens</i>	162		9	4
Ardeidae	<i>Tigrisoma mexicanum</i>	21		6	4
	<i>Agamia agami</i>	2		1	1
	<i>Cochlearius cochlearius</i>	106		3	3
	<i>Nycticorax nycticorax</i>	5		4	4
	<i>Nyctanassa violacea</i>	43		7	4
	<i>Butorides virescens</i>	50		12	6
	<i>Butorides striata</i>	1		1	1
	<i>Bubulcus ibis</i>	378		10	6
	<i>Ardea herodias</i>	70	X	15	6
	<i>Ardea cocoi</i>	1		1	1
	<i>Casmerodius albus</i>	336		18	6
	<i>Egretta tricolor</i>	85		17	4
	<i>Egretta rufescens</i>	37		8	3
	<i>Egretta thula</i>	608		16	5
	<i>Egretta caerulea</i>	311		18	6
Threskiornithidae	<i>Eudocimus albus</i>	560		14	5
	<i>Plegadis falcinellus</i>	144		3	3
	<i>Platalea ajaja</i>	108		9	5
Ciconiidae	<i>Jabiru mycteria</i>	2		2	2
	<i>Mycteria americana</i>	337		5	3
Aramidae	<i>Aramus guarana</i>	16		3	3
Rallidae	<i>Aramides cajanea</i>	8		3	3
	<i>Porphyrio martinica</i>	14		5	4
	<i>Fulica americana</i>	84	X	8	5
Heliornithidae	<i>Heliornis fulica</i>	2		1	1
Charadriidae	<i>Vanellus chilensis</i>	72		4	2

	<i>Pluvialis squatarola</i>	263	X	10	4
	<i>Charadrius semipalmatus</i>	230	X	11	5
	<i>Charadrius wilsonia</i>	188		7	2
	<i>Charadrius vociferus</i>	16	X	4	4
	<i>Charadrius nivosus</i>	2	X	2	1
	<i>Charadrius collaris</i>	9		1	1
Recurvirostridae	<i>Himantopus mexicanus</i>	744		16	4
	<i>Recurvirostra americana</i>	6	X	1	1
Burhinidae	<i>Burhinus bistriatus</i>	11		1	1
Scolopacidae	<i>Gallinago delicata</i>	2	X	1	1
	<i>Limnodromus griseus</i>	635	X	6	3
	<i>Limnodromus scolopaceus</i>	11	X	2	1
	<i>Limosa fedoa</i>	33	X	4	2
	<i>Numenius phaeopus</i>	64	X	14	4
	<i>Actitis macularius</i>	152	X	20	5
	<i>Tringa melanoleuca</i>	80	X	7	3
	<i>Tringa flavipes</i>	61	X	8	3
	<i>Tringa solitaria</i>	11	X	3	3
	<i>Tringa semipalmata</i>	547	X	12	3
	<i>Arenaria interpres</i>	37	X	5	3
	<i>Calidris alba</i>	184	X	11	3
	<i>Calidris pusilla</i>	1	X	1	1
	<i>Calidris mauri</i>	183	X	5	2
	<i>Calidris minutilla</i>	769	X	11	3
	<i>Calidris himantopus</i>	6	X	1	1
<i>Calidris sp.</i>	1.113		2	2	
Jacanidae	<i>Jacana jacana</i>	61		1	1
	<i>Jacana spinosa</i>	211		9	5
Stercorariidae	<i>Stercorarius pomarinus</i>	1	X	1	1
Laridae	<i>Leucophaeus atricilla</i>	1.086	X	10	4
	<i>Leucophaeus pipixcan</i>	10	X	4	3
	<i>Larus argentatus</i>	2	X	1	1
	<i>Sterna antillarum</i>	2		1	1
	<i>Gelochelidon nilotica</i>	20		2	2
	<i>Hydroprogne caspia</i>	58	X	5	4
	<i>Sterna hirundo</i>	25	X	1	1
	<i>Thalasseus elegans</i>	10	X	1	1
	<i>Thalasseus sandvicensis</i>	64	X	7	3
	<i>Thalasseus maximus</i>	1.351	X	14	4
	<i>Rynchops niger</i>	61		3	2

*Nearctic Migrant

Results of the July 2012 Census

The second census of 2012 was carried out between 7 and 22 July during which five of the seven Central American countries participated (Costa Rica, El Salvador, Honduras, Panama and Nicaragua). The census was implemented in 19 sites (Table 5) in the five countries and included nine IBAs. A total of 73 waterbird species, comprising 18 families, were recorded and 8.784 individuals counted.

Comments on sites

Most sites were, again, visited in El Salvador (Table 5), where waterbird were counted at a total of 12 sites, again including four sites that fall within the boundaries of IBA Jiquilisco – Jaltepeque (SV014). Also the highest number of waterbirds were found in El Salvador (3.880 individuals), but also Costa Rica had a relatively high total count (2.321 individuals). Sites with noteworthy high counts include Humedal Palo Verde - Parque Nacional Palo Verde in Costa Rica, Embalse Cerrón Grande in El Salvador, Área de Uso Múltiple Ciénaga de Las Macanas (IBA: Humedales de Santa María) in Panama and Humedal Istian - Reserva de Biosfera Isla de Ometepe in Nicaragua. All these four sites have counts of over 1.000 waterbirds (Table 5).

Comparing between sites, the highest diversity of waterbird species was found at Bocana del Rio Jiboa and Bahía de Jiquilisco - Isla San Sebastián (recorrido La Chepona - La Pirraya) where respectively 42 and 36 species were observed, Both sites lie with IBA Jiquilisco – Jaltepeque in El Salvador. Other where 20 or more species of waterbird were observed include Humedal Palo Verde - Parque Nacional Palo Verde in Costa Rica and Refugio de Vida Silvestre Cuero y Salado in Honduras (Table 5).

Table 5. Summary of the number of species and individuals recorded at each site during the CAWC in July 2012

Country	Site	Total species	Total count
Costa Rica	Humedal Palo Verde - Parque Nacional Palo Verde	26	2.097
	Llanuras y Humedales del Caribe	19	224
		Sub-total	2.321
El Salvador	Laguna Colima	1	10
	Laguna de Chanmico	9	66
	Embalse Cerrón Grande	18	1.669
	Bocana El Zapote, Barra de Santiago	14	313
	Bocana del Rio Jiboa (IBA: Jiquilisco - Jaltepeque)	42	505
	Playa Las Bocanitas	10	65
	Playa Los Pinos	10	73
	Playa Toluca	10	154
	Playa San Diego	8	25
	Bahía de Jiquilisco - Isla San Sebastián: recorrido La Chepona - La Pirraya (IBA: Jiquilisco - Jaltepeque)	36	684
	Bahía de Jiquilisco - Isla Pajarito (IBA: Jiquilisco - Jaltepeque)	8	211
Bahía de Jiquilisco - Punta San Juan (IBA: Jiquilisco - Jaltepeque)	4	105	
		Sub-total	3.880
Honduras	Refugio de Vida Silvestre Cuero y Salado	20	72
		Sub-total	72
Panama	Área de Uso Múltiple Ciénaga de Las Macanas (IBA: Humedales de Santa María)	19	1.070

	Bahía de Chorrera, Puesto Caimito (La Chorrera)	11	197
		Sub-total	1.267
Nicaragua	Humedal Istian - Reserva de Biosfera Isla de Ometepe	14	1.016
	Reserva Natural Laguna de Tisma	17	228
		Sub-total	1.244
		TOTAL	8.784

Comments on species

In July, the most abundant waterbird species were *D. autumnalis* with 1.944 individuals, *Plegadis falcinellus* with 1.013 individuals and *B. ibis* with 822 individuals (Table 6). In terms of most commonly recorded species (i.e. in number of sites), the leading species is *E. thula* with records in 12 sites (63% of all sites) and *C. albus*, *E. tricolor* and *Tringa semipalmata* following in 11 sites (58% of all sites). Three species that are considered Near-threatened at the global level were recorded, which were the same as those recorded during the February-March census and include *T. elegans* (1 individual), *C. pusilla* (1 individual) and *E. rufescens* (2 individuals).

A total of 30 Nearctic migrants were recorded, comprising six waterbird families. The majority are members of the families Charadriidae and Scolopacidae (63%), and Laridae (27%). The most numerous species were *Calidris mauri* with 199 individuals and *N. phaeopus* with 173 individuals. Other species with more than 100 individuals counted were *C. semipalmatus*, *Limnodromus griseus*, *T. semipalmata*, *Calidris minutilla* and *T. maximus* (Table 6). An interesting record was an individual of *Fulica americana* observed in Panama, where it is not a commonly recorded migrant. In total, 1.578 Nearctic migrants were recorded during the July census, representing 18% of the total of waterbirds counted in July 2012.

Table 6. Summary of families, species and counts of recorded waterbirds during the Pilot CAWC in July 2012.

Family	Species	NM*	Count	N sites	N countries
Anatidae	<i>Dendrocygna bicolor</i>		139	2	2
	<i>Dendrocygna autumnalis</i>		1.944	8	5
	<i>Cairina moschata</i>		6	3	3
	<i>Anas discors</i>	X	7	2	2
	<i>Anas sp.</i>		10	1	1
	<i>Nomonyx dominicus</i>		1	1	1
	<i>Oxyura jamaicensis</i>		40	1	1
Podicipedidae	<i>Tachybaptus dominicus</i>		9	1	1
Pelecanidae	<i>Pelecanus occidentalis</i>		576	10	4
Phalacrocoracidae	<i>Phalacrocorax brasilianus</i>		180	10	5
Anhingidae	<i>Anhinga anhinga</i>		147	2	2
Fregatidae	<i>Fregata magnificens</i>		38	6	3
Ardeidae	<i>Tigrisoma mexicanum</i>		11	3	3
	<i>Cochlearius cochlearius</i>		2	1	1
	<i>Nycticorax nycticorax</i>		303	5	4
	<i>Nyctanassa violacea</i>		11	5	4
	<i>Butorides virescens</i>		76	10	5
	<i>Butorides striata</i>		1	1	1
	<i>Bubulcus ibis</i>		822	6	4
	<i>Ardea herodias</i>	X	9	3	3

	<i>Casmerodius albus</i>		382	11	5
	<i>Egretta tricolor</i>		31	11	4
	<i>Egretta rufescens</i>		5	2	1
	<i>Egretta thula</i>		132	12	4
	<i>Egretta caerulea</i>		60	8	4
Threskiornithidae	<i>Eudocimus albus</i>		56	3	2
	<i>Plegadis falcinellus</i>		1.013	2	2
	<i>Platalea ajaja</i>		35	5	4
Ciconiidae	<i>Jabiru mycteria</i>		1	1	1
	<i>Mycteria americana</i>		364	4	4
Aramidae	<i>Aramus guarauna</i>		7	2	2
Rallidae	<i>Aramides cajanea</i>		1	1	1
	<i>Porphyrio martinica</i>		23	3	3
	<i>Gallinula chloropus</i>		7	1	1
	<i>Fulica americana</i>	X	6	2	2
Heliornithidae	<i>Heliornis fulica</i>		6	1	1
Charadriidae	<i>Vanellus chilensis</i>		15	1	1
	<i>Pluvialis dominica</i>	X	1	1	1
	<i>Pluvialis squatarola</i>	X	58	8	3
	<i>Charadrius semipalmatus</i>	X	141	7	2
	<i>Charadrius wilsonia</i>		62	9	3
	<i>Charadrius collaris</i>		37	6	2
Haematopodidae	<i>Haematopus palliatus</i>		8	2	1
Recurvirostridae	<i>Himantopus mexicanus</i>		49	5	3
Burhinidae	<i>Burhinus bistriatus</i>		26	2	2
Scolopacidae	<i>Limnodromus griseus</i>	X	136	4	1
	<i>Limosa fedoa</i>	X	89	3	1
	<i>Numenius phaeopus</i>	X	173	8	1
	<i>Numenius americanus</i>	X	1	1	1
	<i>Actitis macularius</i>	X	59	10	3
	<i>Tringa melanoleuca</i>	x	10	3	2
	<i>Tringa flavipes</i>	X	22	4	3
	<i>Tringa semipalmata</i>	X	136	11	2
	<i>Arenaria interpres</i>	X	44	4	2
	<i>Aphriza virgata</i>	X	1	1	1
	<i>Calidris canutus</i>	X	1	1	1
	<i>Calidris alba</i>	X	91	5	3
	<i>Calidris pusilla</i>	X	43	3	2
	<i>Calidris mauri</i>	X	199	5	3
	<i>Calidris minutilla</i>	X	122	6	1
	<i>Calidris melanotos</i>	X	2	1	1
Jacanidae	<i>Jacana jacana</i>		271	1	1
	<i>Jacana spinosa</i>		199	6	4
Laridae	<i>Leucophaeus atricilla</i>	X	55	7	4
	<i>Leucophaeus pipixcan</i>	X	5	1	1
	<i>Sterna antillarum</i>		50	1	1
	<i>Gelochelidon nilotica</i>		6	2	1
	<i>Hydroprogne caspia</i>	X	2	2	1
	<i>Chlidonias niger</i>	X	14	2	2

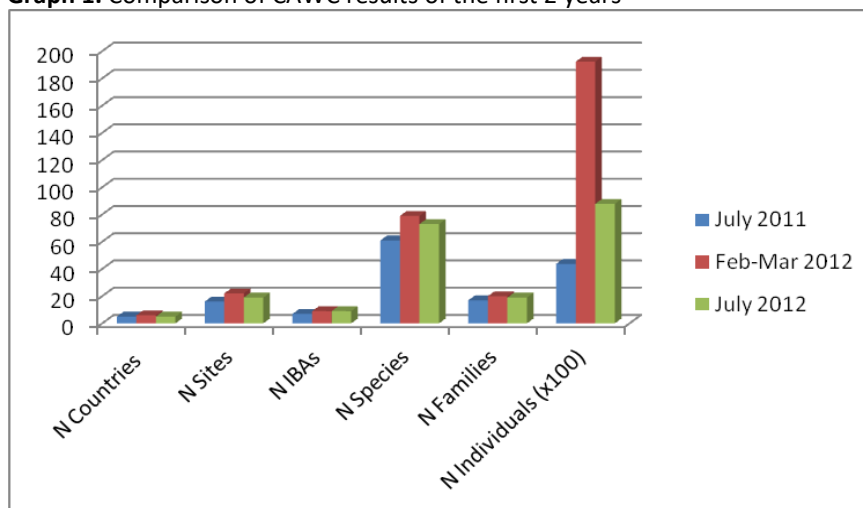
	<i>Sterna hirundo</i>	X	7	2	1
	<i>Thalasseus elegans</i>	X	2	1	1
	<i>Thalasseus sandvicensis</i>	X	11	3	2
	<i>Thalasseus maximus</i>	X	131	5	3
	<i>Rynchops niger</i>		44	2	1

*Nearctic Migrant

Discussion

In comparison to the pilot waterbird census of 2011, in 2012 the census was more successful in terms of a number of simple measures (Graph 1). More species were recorded and more individuals counted, with best results obtained so far in February-March 2012. The number of surveyed sites increased between 2011 and 2012; however, there are still many other sites in the region not yet covered by the census. Nonetheless the results of both attempts show a clear interest in the region and with further stimulus, the census will be able to grow further and fill in the census gap that was present in the region.

Graph 1. Comparison of CAWC results of the first 2 years



Annexes

Annex 1 – Terms of Reference for Central American Waterbird Census

Annex 2 – Data recording forms