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NOTES ON THE STYGIAN OWL (*ASIO STYGIUS SIGUAPA*) IN CUBA

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Abstract.—The Stygian Owl (*Asio stygius*) is a vulnerable species which is widespread but localized in Cuba and on the Isle of Pines. This owl is typically found in forested areas, including semideciduous woods and pine forest. It breeds from January to April. The female is more aggressive than the male. Wing clapping, a threat display, was more commonly produced by the female. Of the 34 pellets examined, bats represented 61.3% and birds 38.7% of identified remains.

INTRODUCTION

THE STYGIAN OWL (*Asio stygius*) is distributed exclusively in the New World, where it is one of the least frequently observed owls. Six subspecies have been described, including *A. s. lambi* (northwestern Mexico), *A. s. robustus* (eastern Mexico, Guatemala and Nicaragua), *A. s. barberoi* (Paraguay and northern Argentina), and *A. s. stygius* (central and southern Brazil). Two populations occur in the West Indies: one in Cuba and the Isle of Pines (*A. s. siguapa*), and another in Hispaniola and Gonâve Island (*A. s. noctipetens*) (Howard and Moore 1991). The habitat of this owl is montane evergreen forest, pine-oak forest, pine forest, tropical lowland evergreen forest, and tropical deciduous forest (0-3100 m; tropical to temperate zones) (American Ornithologists' Union 1998).

The objective of this paper is to report our general observations made over the course of several years (1988-1998) in the Ciénaga de Zapata and, for five days in March 1994, at La Güira. Observations in Ciénaga de Zapata were made mainly in Playa Larga, in an open area with scattered trees at sea level. We made more detailed observations at La Güira. The vegetation at La Güira is semideciduous

woodland, with patches of pine (*Pinus caribaeus*) forest at approximately 400 m elevation.

STATUS AND DISTRIBUTION

In Cuba the Stygian Owl is vulnerable and widely distributed, but is rare and localized. The small population sizes are the result of a lack of habitat and the continued destruction to remaining habitat fragments. Gundlach (1876) considered this species rare, even in the last century, and specified that habitat destruction and hunting were the main reasons for the decreasing number of individuals. Also, Garrido and García Montaña (1975) described it as a very rare species. Furthermore, its strictly nocturnal habits, soft voice, and short vocalizations also make this bird particularly difficult to find. The only area where this species is known to be fairly common is the Ciénaga de Zapata, 160 km southeast of La Habana City.

Stygian Owls have been collected or observed in the following sites in Cuba: San Cristobal, La Güira, and Nortey (Sierra del Rosario, Pinar del Río Province); Habana Zoo (probably a straggler from a nearby wooded area); Sierra de Anafe (Habana Prov-

ince); Nueva Gerona, Pasadita, Los Indios, and La Vega (Isle of Pines); Santo Tomás, Playa Larga, El Roble, Molina, Los Canales, Playa Girón, Bermeja, and Guamá (Ciénaga de Zapata, Matanzas Province); Aguada de Pasajeros, Soledad Garden (Cienfuegos Province); Topes de Collantes (Sierra del Escambray, Cienfuegos and Sancti Spíritus Provinces); Vertientes (Camagüey Province); Bayates, Nuevo Mundo (Moa, Holguín Province); and near Pico Turquino (Santiago de Cuba Province) (Garrido and Kirkconnell, in press). In addition, Wotzkow (1994) reported the Stygian Owl in the Cuchillas del Toa, Guantánamo Province,

In Cuba, this owl is found in well-preserved semideciduous woods and adjacent pine in both mountain and lowland regions. While foraging, it can be observed in open areas surrounded by scattered trees and also near the coast.

BEHAVIOR AND DIET

Stygian Owls are highly territorial and are usually found in pairs, with the male and female roosting close to one another at a distance of about 30 m (Kirkconnell, pers. observ). During a typical observation at La Güira, the female started to call at about 18:30 hr, and became more active about 19:00 hr. During this time, the pair autopreened for about 15 minutes, mainly on the back and chest, spreading the wings and tail. The male was silent at first, and began to call several minutes after his mate. He then left his roosting site to join the female. The pair then flew off in a gliding flight. The gliding flight of both birds immediately after leaving the perch was typical. The pair flew off, presumably to forage, just before dark, both leaving in the same direction each evening. They returned to the roosting area early in the morning, arriving within a few minutes of one another. They generally roosted high in the densest foliage of the same pine trees. They sometimes landed with an audible wing clapping.

Upon playing a recording of a male's call (*ooh, ooh, ooh*; Garrido and Kirkconnell, in press) one evening, the male answered five to six times, and after several minutes, left his perch. Meanwhile, the female stayed on her perch, emitting calls (screaming sound *quick, quick*; Garrido and Kirkconnell, in press) at intervals. After we played the female's call, she repeated her call over 56 minutes (an average of one call per 3.7 minutes), and flew from one perch to another, each time producing two or three wing claps just above our heads or before landing on a branch. The wing clapping display has been observed in other members of the genus *Asio* (e.g., Clark et al. 1978) as part of the courtship, but in the context we

observed, we considered it to be a threat display. In this pair, the female displayed more persistently and was more aggressive than the male.

During many years of observations at Playa Larga, Ciénaga de Zapata, Kirkconnell observed a male foraging in the same area and perching in the same trees. Only twice was a female spotted flying nearby (both sexes identified by call). At Girón (32 kms southeast of Playa Larga), a pair has been observed sharing the same foraging area.

At Playa Larga during full moon, the owl tended to be quiet and difficult to find. It called only late at night, between 03:30 and 04:30 hr. On dark nights the owls were active, starting to call on the feeding ground at about 21:00 hr. A common behavior was to scan the sky, then fly straight up and high, probably to hunt for bats or large nocturnal insects (George Wallace, pers. comm.). Once a Stygian Owl was observed chasing an animal, presumably a rodent, on the ground (Kirkconnell, pers. obser.). Gundlach (1876) found mice and birds remains in a collected bird. F. C. Lehmann claimed to have seen *A. s robustus* hunt doves (*Zenaida* sp.) in their roosting trees in Cali, Colombia (*in litt.*, Borrero 1967). Borrero (1967), who also worked in Colombia, reported Stygian Owl prey remains included a Purple Gallinule (*Porphyryla martinica*), Eastern Meadowlark (*Sturnella magna*), and Vermillion Flycatcher (*Pyrocephalus rubinus*). Other items he found in pellets included: bats (*Artibeus lituratus*), birds, and large beetles (Scarabeidae). Motta and Taddei (1992), in an analysis of 422 pellets from southern Brazil, found that birds represented 90.2% of prey remains, bats 6.1%, insects 3.6%, and anurans 0.1%. Mark (1991) mentioned that pellets in Belize were composed mainly of bats remains.

Pellets (N=34) we collected beneath roost trees in La Güira contained remains only of bats (61.3%) and birds (38.7%). We detected 13 individuals of 9 bird species: 1 Cuban Trogon (*Priotelus temnurus*), 3 Cuban Pewees (*Contopus caribaeus*), 3 Black-cowled Orioles (*Icterus dominicensis*), 1 Cuban Blackbird (*Dives atrovioleacea*), 1 warbler (*Dendroica* sp.), 1 White-crowned Pigeon (*Columba leucocephala*), 2 Mourning Doves (*Zenaida macroura*), and 1 Ruddy Quail-Dove (*Geotrygon montana*). We found skulls and bones of 21 individual bats in the pellets: 13 *Phylloscoloplos poeyi*, 6 *Phylloscoloplos falcatus*, and 2 *Artibeus jamaicensis*. All three species are vegetarian bats, perch while eating, and fly slowly through trees and shrubs (Silva 1979).

In Cuba, two other bird species have been observed hunting bats: American Kestrel (*Falco sparverius*) and Peregrine Falcon (*Falco peregrinus*). The Barn Owl (*Tyto alba*) also has been reported to hunt bats in Cuba (Silva 1979), Poland (Ruprecht 1979), and Jamaica

(MacFarlane and Garret 1989). MacFarlane and Garret (1989) noted that the predictable occurrence of bats at fruiting trees left them more vulnerable to aerial depredation. They also concluded that selection of bats as prey was not related to the size of the bats.

NESTING

The breeding season of the Stygian Owl in Cuba is from January to April (Garrido and Kirkconnell, in press). Stockton de Dod (1983) reported that the breeding season in the Dominican Republic is from November to April. Local guides in the Zapata Swamp claimed that this species nests in tree holes, usually high above the ground, but this has not been confirmed. The well-known guide, Rogelio García ("Pelao") reported three observations of this owl using bulky platform nests made of small twigs. There are other observations of nesting in platforms (C. Wotzkow and G. Alayón, pers. comm.). Bond (1985) reported that Stygian Owls nest on the ground, but we have not found this to be the case in Cuba. The only two owls documented breeding on the ground in Cuba are the Short-eared Owl (*Asio flammeus*) and the Burrowing Owl (*Athene cucularia*).

The Stygian Owl lays two white eggs (Bond 1985). Juveniles have barred bellies, a black facial disk and lack conspicuous ear tufts. In contrast, adults are streaked below, and have rather long ear tufts. The eyes of fledglings are yellow, whereas those of adults are yellow to yellowish-orange. Variation in eye color may be related to age.

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LISTADO DE LA AVIFAUNA DE CEJA DE FRANCISCO, SIERRA DE LOS ORGANOS, PINAR DEL RÍO, CUBA

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INTRODUCCIÓN

RESULTA SORPRENDENTE la poca información que se tiene sobre la biodiversidad de regiones reforestadas con especies de interés económico (Wauer y Wunderle 1992, Wiley y Wunderle 1993, Wunderle y Waide 1993). Estos ecosistemas pueden mantener poblaciones y comunidades en equilibrio con otros ecosistemas naturales vecinos. En este sentido es interesante conocer como contribuyen las plantaciones forestales a la estructura de las comunidades faunísticas presentes en una región. El objetivo de este trabajo es contribuir al conocimiento de la avifauna de Ceja de Francisco.

ÁREA DE ESTUDIA Y MÉTODOS

Esta localidad se encuentra situada al oeste de la Sierra de Gramales, justamente hacia las alturas pizarrosas del norte de Ceja de Francisco, a 22°08' latitud norte y 84°01' longitud oeste y en la Sierra de Los Organos, provincia de Pinar del Río. Es un área irregular, con pizarras (rocas de grano finamente escamoso con esquistosidad perfecta según Soto (1981) por el norte sobre las que se desarrolla un pinar y calizas por el sur con su típica vegetación de mogotes. El pinar es resultado de un trabajo de reforestación donde predominan individuos de la especie *Pinus tropicalis* y constituye el área central de nuestro estudio. En esta localidad los espacios de bosque semidecíduo mesófilo han quedado muy reducidos, los cuales están siendo reemplazados por diversos cultivos.

Se recorrió un camino forestal en las plantaciones y áreas aledañas, por un período de 150 min (de 06:30 a 09:00 hr) en dos estaciones. La primera del 16–19 de agosto de 1997 (verano, temporada húmeda), y la segunda del 11–14 de febrero de 1998 (invierno, temporada seca).

RESULTOS Y DISCUSSION

En total se registraron 57 especies de aves correspondientes a 11 órdenes y 23 familias (Tabla 1). De ellas son endémicas 9 taxa (3 genéricos, 6 específicos) para un 15.8% de endemismo. Passeriformes resultó ser el orden mejor representado con 27 especies distribuidas en 9 familias.

Aunque no fue objetivo de este estudio profundizar en los temas ecológicos, se apreció que la abundancia y distribución de algunos individuos variaba según la temporada y el tipo de vegetación. En el pinar tanto en agosto como en febrero, observaron diariamente de 25–30 individuos de Bijirita del Pinar (*Dendroica pityophila*). Sin embargo, cantidades similares de Tomeguín de la Tierra (*Tiaris olivacea*) fueron detectadas solamente en la temporada húmeda, en áreas abiertas del pinar donde la vegetación no alcanza los 2 m de altura y hay un mayor desarrollo del estrato herbáceo. La Chillina (*Terestris fernandinae*), por el contrario, se observó con mayor frecuencia durante la temporada seca.

En cuanto a la preferencia del hábitat el Tomeguín de la Tierra fue más frecuente en las áreas abiertas del pinar mientras que el Tomeguín del Pinar (*Tiaris canora*) fue escuchado y visto también en zonas abiertas pero circundando los remanentes de bosque semidecíduo. Dentro de la vegetación tupida de bosque semidecíduo fueron observadas la Chillina, Juan Chiví (*Vireo gundlachi*) y la Cartacuba (*Todus multicolor*). El Tocaroro (*Priotelus temnurus*) fue observado en el pinar, los mogotes y el bosque semidecíduo, siempre solitario. El Negrito (*Melopyrrha nigra*), el Judío (*Crotophaga ani*), el Chichinguaco (*Quiscalus niger*) y el Cernícalo (*Falco sparverius*) fueron más comunes en las sabanas abiertas, mientras que el Ruiseñor (*Myadestes elisabeth*) fue visto solamente en mogotes.

Las especies de aves acuáticas observadas (familias Ardeidae y Alcedinidae) se localizaron en

pequeñas charcas, arroyos y sembrados de arroz ubicados dentro del área de estudio.

Este trabajo constituye el primer reporte de la avifauna de Ceja de Francisco en la Sierra de Los Organos, y aunque preliminar, pensamos que el mismo resulte de gran interés para estudios biogeográficos y como punto de partida en la profundización de los conocimientos acerca del funcionamiento de estos ecosistemas, donde la interacción hombre-naturaleza se hace inevitable y se proyecta hacia la conformación de una estructura del paisaje cada vez más compleja, al aumentar la heterogeneidad y diversidad de hábitat y por ende, merecedora de especial atención.

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NUEVOS REPORTES SOBRE LA ÉPOCA REPRODUCTIVA DE AVES ACUÁTICAS COLONIALES EN CUBA

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LA REPRODUCCIÓN DE LAS AVES coloniales ha sido intensamente estudiada, sin embargo, continúa siendo un campo muy extenso de investigación. Las líneas fundamentales dentro de este grupo, según fuera señalado en el resumen del encuentro de 1997 de la Colonial Waterbirds Society, son las particularidades de la reproducción y la alimentación, conjuntamente con el uso del hábitat de forrajeo, tanto durante la época reproductiva como no reproductiva (Hafner 1997). A pesar de la cercanía que tiene nuestro país con uno de los lugares mejor estudiados en relación a las aves acuáticas (los Everglades en la Florida), no se ha realizado ningún estudio en este sentido en los humedales de Cuba. Tampoco pueden ser utilizados los mismos datos obtenidos en Norteamérica ya que se sabe que las épocas reproductivas o las medidas del éxito reproductivo en este grupo varían ampliamente dependiendo de las condiciones ambientales, la presión de depredación y el ritmo hidrológico del ecosistema. Sin embargo también sabemos que las especies vadeadoras coloniales son especies de larga vida con grados variables de filopatría, que realizan grandes movimientos, conformando metapoblaciones regionales, cuya dinámica

es una herramienta clave para la conservación. Por esto, los estudios en nuestro país son importantes no solo local sino también regionalmente ya que tenemos un intercambio al parecer muy grande de individuos entre nuestras poblaciones residentes y las migratorias.

La bibliografía relacionada con aspectos reproductivos de este grupo en Cuba son solo notas breves, reportes, observaciones puntuales o citas en trabajos generalizadores, pero en general los datos se encuentran muy dispersos. Dada la importancia del conocimiento de estas fechas redactamos la presente comunicación para actualizar la información sobre estas especies.

Aunque en muchos lugares las épocas reproductivas de estas especies pueden distribuirse a lo largo de casi todo el año, los reportes de la literatura y nuestras observaciones reflejan que en Cuba se concentran de abril a septiembre (Tabla 1). Estas adiciones surgen a partir de tres viajes de 15 días de duración cada uno en mayo, junio-julio y agosto de 1998 a las Áreas Protegidas Monte Cabaniguán y Delta del Cauto, que abarcan el amplio sistema de humedales de la Ciénaga de Viramas, provincias Las

Tabla 1: Epocas de reproducción de algunas aves acuáticas coloniales en los humedales costeros de la Ciénaga de Biramas y Delta del Cauto, Cuba, en 1998.

Especie	Mes ¹											
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
Corúa de Agua Dulce <i>Phalacrocorax brasilianus</i>					RB	RB		A		R		
Marbella <i>Anhinga anhinga</i>				R	R	RB	RB	A				
Garzón <i>Egretta alba</i>		B	B	RB	RB	RB	A	E				
Garza Vientre Blanco <i>Egretta tricolor</i>				R	RB	RB	RB	A	G			
Garza Ganadera <i>Bubulcus ibis</i>				R	R	R	RB	A				
Aguaitacaimán <i>Butorides virescens</i>			G	RBG	RB	RB	RB	R	E			
Guanabá de la Florida <i>Nycticorax nycticorax</i>		R	R	RG	RBG	RBG	RBG	A	E			
Coco Prieto <i>Plegadis falcinellus</i>						R	R	R	E			
Sevilla <i>Ajaia ajaja</i>						A	E	R	R	R	R	R

¹R = Raffaele et al. (1998); B = Balat y González (1982); G = Gundlach (1893); A = Adiciones según nuestras observaciones; E = Extensiones a otros meses indicadas por nuestras observaciones.

Tunas y Granma, en el oriente de Cuba.

Nuestro aporte se refiere a una extensión de las etapas reproductivas existentes para ocho especies: la Corúa de Agua Dulce (*Phalacrocorax brasilianus*), la Marbella (*Anhinga anhinga*), la Garza Ganadera (*Bubulcus ibis*), la Garza de Vientre Blanco (*Egretta tricolor*), el Garzón (*Egretta alba*), el Guanabá de la Florida (*Nycticorax nycticorax*), el Coco Prieto (*Plegadis falcinellus*) y la Sevilla (*Ajaia ajaja*). En las restantes especies de garzas no se observaron modificaciones en las fechas reportadas.

Phalacrocorax brasilianus: la etapa reproductiva de esta especie, ubicada en los meses de mayo y junio, posiblemente pueda extenderse hasta agosto, ya que en esta fecha encontramos en los alrededores de la gran colonia de garzas de Cayo Norte, Laguna Las Playas, área Delta del Cauto, un nido activo con huevos y aunque es una observación aislada, los compañeros locales (Empresa Nacional para la Conservación de la Flora y la Fauna) refieren actividad reproductiva durante ese tiempo en lugares más alejados en la ciénaga.

Anhinga anhinga: según Raffaele et al. (1998) en el área caribeña la especie cría de abril a julio, aunque Balat y González (1982) y Valdés Miró (1979) solo mencionan junio y julio para Cuba. Varios nidos de esta especie fueron detectados en una colonia de Guanabaes y Cocos en los esteros entre La Garnacha

y Juan Viejo al norte de la Laguna Las Playas en agosto. El único nido que se logró revisar contenía un pichón bien desarrollado pero sin plumar, de alrededor de una semana de edad.

Bubulcus ibis* y *Egretta tricolor: la colonia de garzas de Cayo Norte, durante el mes de agosto aún mantenía una fuerte actividad y aunque con signos evidentes de estar en fase terminal, se encontraron pichones de ambas especies recién eclosionados y nidos con nuevas puestas, (posiblemente segundas puestas de la temporada). Ambas especies, según la bibliografía tenían la etapa de reproducción de abril a julio.

Butorides virescens: aunque el mes de agosto está reportado por Raffaele et al. (1998) dentro de la etapa reproductiva en el Caribe, encontramos nuevas puestas a mediados de mes en la Laguna Las Playas, lo cual indica que la eclosión y cuidado de los pichones debe extenderse aún hasta principios de septiembre.

Egretta alba: la etapa reproductiva de esta especie está un poco desplazada de forma general hacia meses más tempranos que la mayoría de las garzas (exceptuando la Garza Rojiza *Egretta rufescens*), ubicándose de febrero a junio. Nuevamente en julio y agosto encontramos signos de actividad reproductiva en la colonia de Cayo Norte, Delta del Cauto: huevos incubando y eclosiones en el primer mes, y pichones de tamaños medianos y grandes en el se-

gundo.

Nycticorax nycticorax: según Raffaele et al. (1998) su etapa de reproducción en el área caribeña coincide con la del Garzón, aunque en nuestro país los reportes la centran en los meses de mayo y julio. Igualmente encontramos en agosto numerosos nidos con huevos incubándose y aún terminando la puesta, lo que indica que el periodo de cría de los pichones debe extenderse hasta septiembre.

Plegadis falcinellus: en el área Delta del Cauto existen grandes poblaciones nidificantes de esta especie, encontrándose en agosto numerosos nidos recientes y con pichones pequeños, por lo que es de suponer el periodo de cría se extienda hasta inicios de septiembre.

Ajaia ajaja: esta especie según los reportes de la literatura en nuestra región nidifica entre agosto y diciembre, sin embargo en el área visitada en junio encontramos un nido con pichones desarrollados colindante a una colonia de Cocos en manglares aledaños a la laguna Las Playas. Debido a la dificultad de la zona el área no se rastreó por más nidos, aunque los guías aseguraron que la especie estaba reproduciéndose en ese momento.

El grupo de las aves acuáticas coloniales es un grupo ecológicamente muy dinámico, al encontrarse adaptado a las condiciones cambiantes de los sistemas de humedales. En general sus periodos reproductivos, aunque mantienen cierto rango, son variables localmente y de año en año, ya que responden a complejos factores ambientales relacionados con el clima, las precipitaciones, la abundancia de fuentes de alimentación estacionales o efímeras. Es por ello que sus parámetros reproductivos son frecuentemente utilizados como indicadores de la salud de estos ecosistemas, del impacto humano y de la contaminación, y el estudio de sus tendencias a través de los años podrían ser indicadores también de cambios

globales o regionales. Por esta misma razón las fechas aquí ofrecidas no deben tomarse como patrones fijos establecidos sino deben constituir tan solo un punto de orientación o comparación que sirva de apoyo a otras investigaciones locales.

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LA GALLINUELA DE MANGLAR (*RALLUS LONGIROSTRIS CREPITANS*) (AVES: RALLIDAE)
INVERNA EN CUBA

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Resumen.— Se relacionan todas las especies de gallinuelas y gallaretas de la familia Rallidae reportadas para Cuba. Se reporta por primera vez como récord para Cuba, la subespecie norteamericana de Gallinuela de Manglar (*Rallus longirostris crepitans*).

Key words: *Clapper Rail, Rallidae, winter resident, taxa*

INTRODUCCIÓN

EN CUBA SE HAN REPORTADO trece táxones de gallinuelas y gallaretas de la familia Rallidae: *Rallus elegans elegans*, *R. e. ramsdeni*, *R. longirostris caribaeus*, *R. limicola limicola*, *Pardirallus maculatus inoptatus*, *Cyanolimnas cerverai*, *Porzana carolina*, *P. flaviventer gossii*, *Laterallus jamaicensis jamaicensis*, *Porphyryula martinica*, *Gallinula chloropus cerceris*, *Fulica americana americana* y *F. caribaea* (Bond 1956, Garrido y García Montaña 1975, Garrido 1988). Todo estos táxones están representados por residentes que nidifican en Cuba, con excepción de *Porzana carolina*, *Rallus e. elegans* y *R. l. limicola*, que son visitantes invernales. Si bien es posible que tanto *Laterallus j. jamaicensis* como *Fulica caribaea* críen también en Cuba, no se ha confirmado su nidificación.

En el territorio de las Antillas, la raza continental de la Gallinuela de Manglar (*Rallus longirostris crepitans* Gmelin, 1789) había sido reportada como visitante invernal en las Bahamas (Bond 1956). Al menos cinco ejemplares atribuibles a esta raza han sido colectados en Cuba a partir de las últimas cuatro décadas. Dos de

ellos colectadas por Garrido en Punta de Hicacos, Provincia de Matanzas en Marzo de 1960, y depositados en el Instituto de Ecología y Sistemática con los números 444 y 511. Otra hembra número 368 sin fecha, fue colectada en el litoral del Vedado, Provincia Ciudad de La Habana. Las dos más recientes adquisiciones, se hallan depositadas en el Museo Nacional de Historia Natural con el número 1357 colectada en San Antonio de los Baños, Provincia La Habana, el 1 de Agosto de 1991 por Rafael Quiñones y número 1559, obtenida por el propio colector en Playa del Chivo, La Habana, el 15 de Septiembre 1993. La medidas en milímetros son presentan en Tabla 1.

Un ejemplar (MNHN 1559) fue llevado al Smithsonian Institution para corroborar su identificación. El mismo, fue identificado por el Dr. Richard Banks como *Rallus longirostris crepitans*, constituyendo el primer record oficial para la subespecie en Cuba. Por lo que agradecemos al Dr. Banks la colaboración brindada.

LITERATURA CITADA

Tabla 1. Medidas (mm) de tres ejemplares de *Rallus longirostris crepitans* colectados en Cuba.

Instituto y número	Medida (mm)			
	Ala	Cola	Culmen	Tarsus
UH	153.0	65.0	57.0	59.0
MNHN 1357	137.0	67.0	47.0	59.3
MNHN 1559	140.0	58.0	54.7	60.8

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FIRST REPORT OF SCISSOR-TAILED FLYCATCHER, *TYRANNUS FORFICATUS* GMELIN (PASSERIFORMES: TYRANNIDAE), IN EASTERN CUBA

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WE OBSERVED A Scissor-tailed Flycatcher (*Tyrannus forficatus*) on 20 January 1999, during an expedition to Guarda la Vaca (lat. N 21° 17', long. W 75° 50'), on the northern coast of Holguín, eastern Cuba. The bird showed the characteristics of a juvenile, lacking long outer tail feathers, as well as pink sides and flanks. We photographed the flycatcher while it was perched in a shrub in a xeromorphic scrubby site 100 m from the coast.

The Scissor-tailed Flycatcher breeds in the central and southern United States, and winters in Central America, although a small population remains in the Florida Keys. It is considered accidental in the West Indies, where it has been observed in the Bahama Islands, western Cuba, Hispaniola, and Puerto Rico (Raffaele et al. 1998).

In Cuba, the Scissor-tailed Flycatcher is considered an accidental migrant (Garrido and García 1975). Three previous sightings of the flycatcher have been reported for Cuba: La Fé, Pinar del Río province (21 November 1952, Garrido and García

1975), San Antonio de los Baños, La Habana province (15 November 1984, Alayón 1985) and, recently, in the Isla de la Juventud (15 November 1998; Pedro Blanco, pers. comm.). All previous observations were from western Cuba. Our sighting constitutes the first of *Tyrannus forficatus* in eastern Cuba and the latest date for the species in the West Indies.

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DOS REGISTROS NUEVOS DE AVES ENDÉMICAS EN DEPÓSITOS FOSILÍFEROS DE CUBA

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DE CUBA SE HAN descrito 21 táxones de aves endémicas vivientes (American Ornithologists' Union 1998) y de las mismas sólo se han registrado en depósitos fosilíferos ocho (Fisher y Stephan 1971, Acevedo y Arredondo 1982, Arredondo 1984, Suárez y Arredondo 1997, Jiménez 1998). Según Suárez y Arredondo (1997) las aves del Cuaternario (Pleisto-Holoceno temprano) conocidas y recogidas en la literatura, sumaban solo 41; con este trabajo y el de Jiménez (1998) suman 60 taxones.

Los hallazgos de nuestras especies endémicas en depósitos fosilíferos revisten particular importancia ya que constituyen un elemento reafirmador de la antigüedad de las especies, que procedentes de nuestro territorio se han estado considerando como propias. Se supone sobre esa base, que dichas especies han evolucionado desde tiempos "ancestrales" bajo condiciones insulares. Al mismo tiempo con esos hallazgos, realmente se aporta información valiosa sobre la historia biogeográfica y evolutiva de las mismas.

La familia Psittacidae está representada por solo tres especies: *Amazona leucocephala* (Cotorra), *Aratinga euops* (Catey) y *Ara tricolor* (Guacamayo), esta última extinta desde fines del siglo pasado. García Montaña (1987) expresaba que nuestra cotorra nunca había sido introducida como muchos han supuesto, y que su origen en Cuba se remontaba a miles y miles de años.

Con el objetivo de ampliar el conocimiento que se tenía sobre la fauna extinguida de vertebrados terrestres de la llanura cársica Habana-Matanzas, se realizó en el año 1996 una expedición paleontológica a una región cercana al poblado de Carbonera en la provincia de Matanzas.

Un tibiotarso de *A. leucocephala* hallado en una de las localidades, Cueva del Campamento, aporta en general elementos interesantes en cuanto a la antigüedad de la especie en nuestro territorio. Esta especie no había sido reconocida en los depósitos fosilíferos hasta el momento y el único psitácido hallado resultaba ser siempre *Ara tricolor*. Esta última ha sido reportado de los Baños de Ciego Montero,

Cienfuegos (Wetmore 1928, Brodkorb 1971) y de Cueva Paredones, San Antonio de los Baños, La Habana (Arredondo 1984).

La subespecie *A. l. leucocephala* siempre fue considerada endémica respecto a las restantes subespecies distribuidas en las islas Caimán Grande, Caimán Brac y las Islas de Bahamas. La otra subespecie, *Amazona leucocephala palmarum*, descrita por Todd (1916) para la Isla de la Juventud, no es admitida por algunos ornitólogos; según sus opiniones no puede diferenciarse de los ejemplares de Cuba (García Montaña 1987).

De la especie *Aratinga euops* se han encontrado algunos restos pero en un contexto poco confiable, los mismos se han hallado mezclados en una misma capa superficial con especies introducidas, especies de quirópteros actuales, insectívoros extintos redepósitos provenientes de capas más antiguas, etc.; además del aspecto algo fresco que poseen.

Al mismo tiempo, el hallazgo en el mismo depósito fosilífero de la Cueva del Campamento del único trogónido de Cuba, *Priotelus temnurus* (Tocororo), también constituye un nuevo registro de aves endémicas y que aún no había sido reconocido para los depósitos fosilíferos. Según García Montaña (1987), esta especie era conocida por nuestros aborígenes llamándola "guatini."

Es importante señalar que los elementos óseos de interés aparecieron en la capa más antigua del depósito fosilífero donde la estratigrafía estaba constituida por tres capas bien definidas: una inferior de mayor antigüedad compuesta de sedimentos terrígenos carbonatados con restos de vertebrados fósiles (Rodentia, Quiróptera, Insectivora y Edentata además de otras clases de vertebrados como Reptilia, Amphibia y otras aves) y moluscos; una intermedia de sedimentos carbonatados recristalizados (sinter) y una superior más reciente de sedimentos terrígenos carbonatados con especies de vertebrados actuales y fósiles, y moluscos (Díaz-Franco y Suardías 1996, Díaz-Franco y Rojas 1997).

MATERIALES

Orden Psittaciformes

Familia Psittacidae

Amazona leucocephala ssp.: Diáfisis de tibiotarso izquierdo (MNHNH-P 492). Cueva del Campamento, Carbonera, Matanzas. Edad: Cuaternario

Orden Trogoniformes

Familia Trogonidae

Priotelus temnurus ssp.: Húmero derecho incompleto (MNHNH-P 488). Cueva del Campamento, Carbonera, Matanzas. Edad: Cuaternario.

Otras especies de aves asociadas en el depósito:

Otus lawrencii: Tibiotarso derecho incompleto (MNHNH-P 486); diáfisis de tibiotarso izquierdo (MNHNH-P 487); diáfisis fragmentada de tibiotarso izquierdo con región proximal (MNHNH-P 478); mitad proximal de coracoides (MNHNH-P 663).

Saurothera merlini ssp.: Tibiotarso derecho (MNHNH-P 488).

Torreornis inexpectata ssp.: Tibiotarso derecho (MNHNH-P 493).

El material aquí mencionado se halla depositado en la Colección Paleontológica del Museo Nacional de Historia Natural de Cuba, La Habana.

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REGIMEN ALIMENTARIO DEL CERNÍCALO CUBANO EN UNA LOCALIDAD DE LA REGIÓN CENTRAL DE CUBA

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ENTRE LAS AVES, las Falconiformes resultan idóneas para investigar el régimen alimentario, por lo relativamente fácil que resulta estudiarlo a partir del análisis de sus egagrópilas. La regurgitación de los perdigones orales es la única vía de expulsión de desechos sólidos de éstas aves y tiene lugar, generalmente, durante las primeras horas de la mañana. Nuestro objetivo fue indagar sobre la dieta del Cernícalo cubano (*Falco sparverius sparverioides*).

Se colectaron un total de 15 egagrópilas que contenían 21 presas el día 13 de mayo de 1995, por lo que todos los bolos de regurgitación colectados corresponden al periodo seco. Las colectas se hicieron en un nido abandonado donde una pareja crió tres pichones, en el hueco de un seto vivo que se encuentra en la finca del campesino Adriano Valle, ubicada en la localidad de Neiva, municipio de Cabaiguán y provincia de Sancti Spiritus, en la región central de Cuba. Cada egagrópila colectada fue medida y des-

menuzada individualmente, determinándose el tipo de alimento ingerido y el tipo de presa.

El tamaño promedio de los ovillos regurgitados fue de 20 mm de largo y 8 mm de ancho. Los reptiles constituyeron las presas básicas de la rapaz y dentro de ellos los pertenecientes a la especie *Anolis allisoni*.

El régimen alimentario del Cernícalo cubano sufre evidentes variaciones estacionales; durante el verano es esencialmente entomófago, consumiendo entonces grandes insectos, sobre todo ortópteros. Con el invierno cambia sus hábitos, alimentándose principalmente de lagartos y pájaros, lo cual explica las diferencias observadas entre los resultados del presente trabajo y los obtenidos por otros autores para la misma especie considerando todo el año.

ORNITOFAUNA DE LA PORCIÓN ESPIRITAUNA DEL ECOSISTEMA SABANA-CAMAGÜEY, CUBA

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EL ECOSISTEMA SABANA-CAMAGÜEY (ESC) es una región que alcanza un total de 75,000 km² terrestres y marinos, localizados en la porción norte y central de Cuba, abarcando desde la Península de Hicacos hasta la Banía de Nuevitas y de los cuales 1,446.8 pertenecen a la provincia de Sancti Spiritus. A partir del gran desarrollo que han alcanzado los estudios ornitológicos en Cuba, la avifauna de la porción espiritana del ESC ha sido relativamente poco prospectada hasta hoy día. En el presente trabajo se ofrece información sobre la composición, estatus y distribución de la ornitofauna observada en el territorio del Ecosistema Sabana-Camagüey correspondiente a la provincia, como resultado de la revisión bibliográfica realizada y el trabajo de campo efectuado durante 9 años de investigación en dicha región.

En el área de estudio se detectaron 163 especies

pertenecientes a 19 órdenes, 47 familias y 107 géneros. Del total de especies, 101 crían en Cuba. Los órdenes mejor representados fueron: Passeriformes, Charadriiformes, Anseriformes, Ciconiiformes, Columbiformes y Falconiformes. La mayoría de las especies (49) son residentes permanentes comunes, 40 son residentes invernales comunes y 25 residentes permanentes bimodales. Se detectaron 19 especies amenazadas de extinción (2 de ellas en peligro y 17 vulnerables). La región fisiográfica más rica en especies fue la de humedales costeros y dentro de ella la formación vegetal de manglar, con 103. La porción espiritana del ESC es de gran importancia para la conservación de la biodiversidad de aves en el centro-norte de Cuba.

TERCER TALLER DE BIODIVERSIDAD, CENTRO ORIENTAL DE ECOSISTEMAS Y BIODIVERSIDAD,
SANTIAGO DE CUBA
11 AL 13 DE NOVIEMBRE 1998

COMPOSICIÓN Y ABUNDANCIA DE LA
AVIFAUNA DE LA RESERVA DE LA
BIOSFERA SIERRA DEL ROSARIO EN UN
GRADIENTE DE AFECTACIÓN ANTRÓPICA

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Se estudio la composición y abundancia de un bosque siempreverde con un gradiente de afectación antrópica en la Reserva de la Biosfera Sierra del Rosario. Se utilizó el método de la parcela circular para detectar la abundancia relativa de las aves en tres localidades (El Salón, El Taburete y Las Delicias). Se evaluaron diferentes parámetros de vegetación para relacionarlos con los resultados de la composición y abundancia de las comunidades de aves. Se plantean dos hipótesis para explicar las similitudes encontradas en los diferentes parámetros ecológicos, los de abundancia y por gremio entre las localidades. Se reportan además siete nuevas especies para la Reserva.

CARACTERIZACIÓN PRELIMINAR DE LA
ORNITOFAUNA DE LA RESERVA DE SIBONEY

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Se estudio la ornitofauna de la Reserva de Siboney durante seis meses en 1997 y 1998 mediante el método de parcela circular, con lo cual se obtuvo el listado de las especies presentes en el área, en la cual están presentes 16 grupos tróficos. Se calcularon, además, los índices ecológicos de diversidad y equitatividad, alcanzando ambas variables su valor máximo en el mes de julio de 1997. También se presentan los índices de abundancia más apropiados

para quince de las especies presentes en la Reserva.

GREMIOS PARA LA REPRODUCCIÓN DE LAS
AVES EN LA “RESERVA DE LA BIOSFERA
BACONAO”

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Se presentan los gremios donde se agrupan las aves para el proceso de reproducción atendiendo al sustrato y estrato de nidificación. Se presentan la diversidad de plantas utilizadas por las aves, así como el índice de importancia en la utilización de las mismas.

VEGETACIÓN, FLORA Y FAUNA DE LA
RESERVA NATURAL “LOMA LOS
CABALLEROS,” MUNICIPIO SIBANICÚ,
CAMAGÜEY, CUBA

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Se realizó la caracterización de la vegetación, flora y fauna de las elevaciones que conforman la zona conocida como “Loma Los Caballeros” del municipio Sibanicú, la que recientemente se incluyó en el Sistema de Areas Protegidas de la Provincia de Camagüey. Se seleccionaron siete estaciones en las cuales se analizó la estructura y composición florística de la vegetación. La fauna asociada se evaluó a través de transectos de ancho variable, se anotaron las especies vistas u oídas pertenecientes a tres clases (Reptilia, Aves y Mamalia), siendo las aves la mayor diversidad seguidas de los reptiles. Se anexan los listados de la flora y la fauna, enfatizando en el primer caso las potencialidades económicas que brinda este recurso.

EVALUACIÓN ECOLÓGICA Y DE
DETERMINACIÓN DE GREMIOS

ESTRUCTURALES DE LA COMUNIDAD
ORNÍTICA DEL JARDÍN
BOTANICO “JUAN TOMÁS ROIG,” PROVINCIA
SANTIAGO DE CUBA

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Se realizó una evaluación ecológica de la ornitocenosis del Jardín Botánico “Juan Tomás Roig” de Santiago de Cuba mediante los índices de abundancia relativa (AR), riqueza de especies (S), diversidad (H) y equitatividad (J). Se evaluó asimismo el status y nivel de endemismo de las especies presentes en el área siendo las predominantes las residentes perennes. El método utilizado fue el de línea de transecto (Eberhardt 1978) realizándose un total de 41 muestreos durante los meses de febrero a mayo de 1996 en los horarios de las 07:00 a 12:00 y de las 13:00 a las 17:00 horas. Se confeccionó un listado de las especies presentes en el área resultado el orden Passeriformes el mejor representado con un total de 27 especies de las 40 detectadas en la zona.

BIBLIOGRAFÍA ORNITOLÓGICA PUBLICADA
EN CUBA O SOBRE LA AVIFAUNA CUBANA

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La información que se ofrece en este trabajo representa una base de datos automatizada que recopila un total de 516 de publicaciones referentes a la avifauna cubana publicadas hasta la fecha. Los campos principales de este fichero son: autor, fecha, revista o editorial, título y materia. Esta última comprende un total de 16 temáticas utilizadas para clasificar dichas publicaciones. En la distribución cuantitativa porcentual se observa que los mayores porcentajes pertenecen a las temáticas de “composición de comunidades,” “sistemática,” “metodología y aspectos teóricos,” “ecología general” y “relaciones con la vegetación y selección del hábitat,” siendo estas dos últimas las de mayor incremento porcentual en la última década, lo que da una medida del incremento cualitativo que han tenido los estudios ecológicos de nues-

tra avifauna.

CARACTERIZACIÓN DE LA ORNITOFAUNA
DE LA ALTIPLANICIE DEL TOLDO

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Se expone el resultado del trabajo de campo en la altiplanicie del Toldo, que permitió la caracterización de la ornitofauna del área. En el período de tiempo que abarca este trabajo se detectaron un total de 43 especies pertenecientes a 13 órdenes y 22 familias. El endemismo está representado por ocho especies, por su parte las nidificantes en el área fueron 27. Se determinó la presencia de 25 grupos tróficos, 22 terrestres y 3 acuáticos.

ORNITOFAUNA DE LAS CUENCAS DE LOS
RÍOS GUAMÁ Y SEVILLA, Y SU RELACIÓN
CON LOS TIPOS DE VEGETACIÓN

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Se exponen los resultados del trabajo de campo que se viene desarrollando en las cuencas de los ríos Guamá y Sevilla desde 1995, y su relación con los tipos de vegetación presentes en lo que respecta a biodiversidad y endemismo. Se plantean criterios de biodiversidad y endemismo para cada tipo determinado. Se detectó la presencia de 107 especies, 40 de las cuales son residentes permanentes que junto con las residentes permanentes bimodales constituyen el elemento ornítico fundamental en este extenso territorio.

CONSIDERACIONES GENERALES DE LA
FAMILIA PICIDAE EN EL ORIENTE CUBANO

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Se exponen los resultados obtenidos en la revisión bibliográfica y trabajos de campo y revisiones bibliográficas que desde 1985 se vienen desarrollando en el seguimiento de las especies de la familia Picidae en el Oriente cubano. Se plantea que cuatro de las seis especies reportadas para el área requieren de tratamiento especial de conservación por la presión antrópica a que se ven sometidas.

CARACTERIZACIÓN ORNITOFAUNÍSTICA DE LA ZONA BOSCOsa DEL ÁREA PROTEGIDA LA ISLETA

RICHAR OLANO LABRADA
Y LÁZARO PÉREZ FOMBELLIDA
Delegación del CITMA, Las Tunas, Cuba

Los trabajos de campo se realizaron en la zona correspondiente al bosque semidecídúo sobre ultrabasitas del área protegida La Isleta, situada en la costa norte de la Provincia Las Tunas, Cuba. Para la obtención de la información primaria se utilizó el método de línea de transecto o taxiado (Eberhardt 1978). Hasta la fecha se han inventariado 62 especies de aves terrestres de las cuales sólo 37 aparecieron en conteos resultando el orden Passeriformes el mejor representado con 30, destacándose dentro de este la familia Parulidae con 12 especies. El endemismo es elevado tanto a nivel de género con cuatro como a nivel específico con 12. Resultados que unidos a otros elementos permiten proponer al área la categoría de manejo de reserva ecológica.

EVALUACIÓN DE TRES COMUNIDADES DE AVES TERRESTRES EN EL PARQUE NATURAL ALEJANDRO DE HUMBOLDT DURANTE LA RESIDENCIA INVERNAL 1996-1997 Y 1997-1998

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Se exponen los resultados obtenidos durante una evaluación a las comunidades de aves terrestres existentes en tres formaciones vegetales: pinar, siempreverde y pluvisilva, en el Parque Nacional Alejandro de Humboldt, durante el periodo de residencia invernal 1996-1997 y 1997-1998. Se abordan aspectos relacionados con la composición y abundancia de la ornitofauna presente en el área, obtenidos a partir de la aplicación del método de corteo por parcelas circulares y el de captura por redes ornitológicas. En total se detectaron 41 especies de aves, de ellas 15 son residentes invernales y 26 residentes permanentes. Se realizó un análisis de las comunidades en estudio según Magurran (1988). Se discute la distribución por sexo y edad de algunas hijiritas migratorias, así como su variación anual.

EVALUACIÓN DE LA DURACIÓN DE LOS PUNTOS DE CONTEO DE AVES PARA LA RESERVA NATURAL DE SIBONEY

FREDDY RODRÍGUEZ SANTANA Y RAIMA CANTILLO
ARDEVOL

Centro Oriental de Ecosistemas y Biodiversidad – BIOECO, Santiago de Cuba, Cuba

Se compara la efectividad de los conteos de cinco minutos con los de 10 minutos de duración en el matorral xeromorfo costero de la Reserva Natural de Siboney. Se concluye que los conteos de cinco minutos son comparativamente más eficaces en esta formación vegetal que los de 10 minutos, siempre que el tiempo de traslación entre las parcelas sea menor de 15 minutos, lo cual permite una mayor obtención de datos estadísticamente independientes producto del incremento del número de muestras que se

pueden tomar en una mañana de conteo.

COMPOSICIÓN Y ALGUNOS ASPECTOS ECOLÓGICOS DE LOS BANDOS MIXTOS DE AVES EN CUATRO LOCALIDADES DEL ORIENTE CUBANO

FREDDY RODRÍGUEZ SANTANA
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Se estudiaron los bandos mixtos cubanos en cuatro localidades del Oriente cubano, formando parte de los mismos 27 especies de aves, de los cuales 12 son migratorias y siete son especies endémicas. Se reporta a la *Teretistris fornsi* como la especie núcleo por excelencia en las localidades estudiadas, aunque se reportan otras cuatro especies jugando también la función de especie núcleo. El tamaño de los bandos está íntimamente correlacionado con el número de especies presentes en los bandos, los cuales estuvieron compuestos mayormente por especies insectívoras.

CARACTERÍSTICAS FUNDAMENTALES DE LA ORNITOFAUNA DEL MACIZO MONTAÑOSO NIPE-SAGUA-BARACOA

FREDDY RODRÍGUEZ SANTANA
Y LUIS OMAR MELIAN HERNÁNDEZ
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Se reportan un total de 142 especies de aves para el Macizo Montañoso de Nipe-Sagua-Baracoa, pertenecientes a 38 familias y 17 órdenes. De ellas 16 son especies endémicas. Los mayores valores de riqueza de especies y número de endémicos se reportan para formaciones vegetales naturales o con poco grado de antropización, reportándose pérdida de especies para aquellas formaciones vegetales con un alto grado de antropización.

VERTEBRADOS DEL PARQUE NATURAL BAHÍA DE NARANJO

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BIOECO, Santiago de Cuba, Cuba*

Se ofrece el listado de todos los vertebrados del Parque Natural Bahía de Naranjo como paso previo

para posteriores estudios de su fauna e implementación de futuros planes de manejo. Cinco de las especies reportadas para el Parque aparecen citadas por el libro rojo de la UICN con diferentes categorías de amenaza.

REPORTE DE UN CHOQUE DE UN BANDO DE *LONCHURA MALACCA* (AVES: ESTRILIDAE) CONTRA UN EDIFICIO

FREDDY RODRÍGUEZ SANTANA Y LUIS O. MELIAN
HERNÁNDEZ
*Centro Oriental de Ecosistemas y Biodiversidad – BIO-
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Se reporta el choque de un bando de siete individuos de la especie *Lonchura malacca* contra un edificio, consitiyendo un nuevo reporte de localidad para esta especie en el Oriente cubano.

CARACTERIZACIÓN FLORÍSTICA Y FAUNÍSTICAS DE CAYO JUDAS, BAHÍA DE LOS PERROS, CIEGO DE ÁVILA

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Se caracterizan los valores de flora y fauna de vertebrados terrestres presentes en Cayo Judas al norte de la provincia Ciego de Ávila resultando sus potencialidades científicas, económicas y prioridades de protección y conservación. Se determinó la presencia de 51 especies de plantas vasculares con 15.7% de endemismo y una especie en peligro de extinción (*Cameraria microphylla*). Se encontró que la mayor afinidad de la flora de este cayo es con la subprovincia Cuba Oriental (15.6%) y en la subregión antillana con las provincias Sur de la Florida-Bermudas con (76.4%) y Antillas Menores (33.3%). Los vertebrados terrestres están representados por 55 especies (1 anfibio, 7 reptiles y 47 aves) con 23.3% de endemismo.

ESTUDIO PRELIMINAR DE LA FAUNA VERTEBRAL DEL MACIZO MONTAÑOSO

NAJASA, CAMAGÜEY Y CENSO PRELIMINAR
DE LAS AVES EN LA SIERRITA, PENÍNSULA
NUEVAS GRANDES, MACIZO MONTAÑOSO,
NUEVITAS, CAMAGÜEY

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Se realizó un estudio de los vertebrados que se encuentran en las áreas protegidas del municipio Najasa, Camagüey, Cuba. Se anotaron todas las especies vistas u oídas a través de transectos de ancho variable. Se determinaron 90 especies ubicadas en 70 géneros, 72 familias y 28 órdenes de ellos, 10 peces dulceacuícola, 3 anfibios, 11 reptiles, 63 aves y 2 mamíferos. Se encontraron un reptil y cinco aves amenazadas de extinción; protegidos por el CITES 2 reptiles y 10 aves. En cuanto a las aves se encontró que más del 90% se encuentran dentro del subnicho temporal diurno; a los insectívoros en el subnicho trófico y en cuanto a su status a los residentes permanentes como grupo principal. En dependencia de la abundancia se comportaron como comunes o muy comunes a más del 50%.

INDICADORES DE DIVERSIDAD BIOLÓGICA
DE ANFIBIOS, REPTILES Y AVES

DEL MACIZO MONTAÑOSO
NIPE-SAGUA-BARACOA, CUBA

NICASIO VIÑA DÁVILA, NICASIO VIÑA BAYÉS,
ANSEL FONG GRILLO, FREDDY RODRÍGUEZ
SANTANA Y LUIS MELIAN HERNÁNDEZ
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A partir del empleo de Sistemas de Información Geográfica se modeló la distribución de la herpetofauna y ornitofauna de Nipe-Sagua-Baracoa. Se muestran los valores de riqueza de especies y riqueza de endémicos y su ubicación espacial, presentándose además los análisis por áreas. En el trabajo se analiza la similitud de los patrones de distribución de cada especie y de las combinaciones obtenidas, presentándose en este caso su ubicación espacial.

HUNTING WORKSHOP – SOCIETY OF CARIBBEAN ORNITHOLOGY

HERBERT A. RAFFAELE

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A full-day workshop on hunting in the Caribbean was conducted at the SCO meeting in Guadeloupe on 28 August 1998. The workshop objectives were to identify: (1) the most important elements which must be undertaken to establish an effective hunting program; (2) mechanisms for achieving these elements; and (3) initiatives which have successfully implemented one or more elements of a successful hunting program.

The process used to address these objectives was the following:

- (1) In a single brainstorming session, all participants contributed to developing a comprehensive master list of needs believed important for establishing and managing an effective hunting program. These items were sorted by category (monitoring, laws and regulations, etc.).
- (2) We broke up into 4 working groups wherein participants prioritized each of the items on the master list as being of either high, medium, or low importance.
- (3) The priorities developed by the 4 working groups were reported to a session of the entire workshop and then used to reduce the master list to only those items identified as being of high priority by two or more working groups.
- (4) New working groups were then formed based upon theme. The first group addressed research and monitoring; the second, laws, regulations, permits, and law enforcement; and the third, public outreach and hunter education. Each group was asked to refine or clarify broadly stated priorities, identify needs and mechanisms necessary to successfully implement each priority item and any existing examples of successful implementation.
- (5) Each of the three thematic working groups reported the results of their discussions to the entire body.

The highest priority actions identified by workshop participants as essential to any hunting program are listed in Attachment 1. Perhaps the most important value of creating this list was to demonstrate the breadth of the hunting issue. As priorities were

listed, it became evident that conducting a hunting program involves more than just setting a bag limit and season for the species to be hunted and then trying to enforce the law. Many other fundamental issues must be addressed if there is to be any hope of a hunting program being successful. Among these items are development of an effective and comprehensive hunter education campaign so that hunters are not only informed, but are actively involved in conservation of game species and their habitats. Also identified as important was the need to conduct public outreach so as to establish general public acceptance of any hunting program to be put in place. The need to monitor and evaluate all elements of the program, establish processes for permits, fees, and testing, create appropriate infrastructure and funding for the program – these and many other items were determined to be essential elements of a sustainable hunting program.

Another value of the priorities list is to serve as a checklist for any entities faced with the issue of establishing hunting programs. This would include several Caribbean islands which are presently grappling with this possibility.

The second phase of the workshop – addressed by the thematic working groups – focused on the second and third objectives: identifying mechanisms to achieve the priority actions and listing successful initiatives. The three working groups each approached these objectives differently. The group on research and monitoring clarified some of the key criteria and other issues of importance to decision-making concerning a hunting program. A summary of this group's conclusions is presented in Attachment 2. The working group on laws, regulations, licensing, and law enforcement chose to develop a table presenting hunting data by island (Attachment 3). A summary of the discussions of the working group on public outreach and hunter education was not prepared.

Overall, the workshop was successful at demonstrating both the breadth and the complexity of establishing a hunting program. It highlighted various priority actions necessary for establishing such a program which many of us might off-handedly presume to be unimportant. Among these were the need to develop public acceptance of the program, establish-

ing an environmental education program for children so that they understand how hunting might fit into their society, and even the need to promote an environmental ethic within the community – a necessity if people are not to abuse hunting laws and regulations.

The workshop provided the opportunity to exchange ideas and focus our thinking but, as with many issues, it provided no easy answers. Nevertheless, some Caribbean islands have clearly been more successful than others at implementing specific priority actions. Consequently, there were lessons to be learned from the interchange.

Finally, the workshop represented the most intensive effort to date yet mounted in the Caribbean to facilitate interchange among islands on what to many of us is a difficult and thorny issue. Hopefully, this workshop will be only the beginning of an on-going dialogue that assists each island to more successfully address this issue.

ATTACHMENT 1

PRIORITY ACTIONS FOR AN EFFECTIVE HUNTING PROGRAM

LAWS AND REGULATIONS

- Determine the existence of adequate legislative authorities
- Authority over who can hunt
- Authority over what is hunted
- Authority to establish bans
- Authority over when hunting takes place
- Authority over where hunting can occur
- Authority over hunting methods
- Authority over penalties
- Authority to regulate firearms, permits, and licenses
- Authority to regulate resident vs. foreign hunters
- Have a process for preparing regulations
- Assure compliance with treaties and conventions
- Establish mechanisms for public input

PERMITS AND LICENSING

- Procedures
- Infrastructure
- Firearms Permit
- Firearm Skills Testing
- Fees

HUNTER EDUCATION AND INVOLVEMENT

- Species identification manual
- Rules and regulations information sheet
- Comprehensive liens exam (bird identification, habitat cons, exotics)
- Outreach mechanism
- Involve hunters (data collection, habitat management)

- Inform hunters of impacts
- Study socio/economics of hunters

LAW ENFORCEMENT

- Train Agents (Laws, Regulations, identification)
- Patrols
- Postings
- Recovery of Fines and Penalties
- Follow up of Prosecutions and Citations
- Adequate authority and staffing

EVALUATION

- Effectiveness of all programs (hunter education, outreach, research, etc.)

COSTS, ORGANIZATION AND INFRASTRUCTURE

- Coordination
- Data management and interpretation
- Tap existing efforts and resources (including International)
- Focal point (single contact for information)
- Funding
- Exchange of information and experiences
- Training

RESEARCH

- Species abundance
- Species distribution
- Breeding season
- Population demographics (survivorship, mortality)
- Impact on other species
- Sensitive areas

Hunting Workshop

Trend analysis
Local movements
Migration
Assure continuity of research
Sustainable harvest/carrying capacity
Criteria to determine which species to hunt

MONITORING

Pre-hunting species survey
Hunt monitoring
Post-hunt species survey

Level of illegal hunting
Hunter success

HABITAT

Species/habitat conservation and improvement

PUBLIC OUTREACH

Public acceptance
Conservation ethic
Environmental education targeting kids; re: wise resource use

ATTACHMENT 2

RESEARCH AND MONITORING SUBGROUP REPORT HUNTING WORKSHOP (25 July 1998) Held at Eleventh Annual Meeting of the SCO Guadeloupe, French West Indies

JOSEPH M. WUNDERLE

To set research and monitoring priorities, the group returned to the basic assumption underlying sustainable harvest of game animals. We assumed that sustainable harvest meant that populations could be harvested without long-term damage to the target population. Given this assumption, we proceeded to identify the minimal biological and hunter information necessary for a sustainable harvest of game animals. Below, listed in order of priority, are some of the most important items which must be determined before a species may be hunted:

1. The first stage is to establish a list of legally hunted game animals for a country. It was recommended that this list be re-evaluated regularly (i.e., yearly?) to determine if conditions related to listing have changed. The following must be determined before a species is included on a hunting list:

- The species must *not* be a single island endemic.
- The species must *not* be listed as globally threatened.
- The species must *not* resemble a threatened species in appearance.

- Will hunting detract from existing values of the intended species? (e.g., a “tame” species may have considerable ecotourism value, which would be lost if hunted).

2. Distribution and abundance (animals and hunters):

- Is the game species widespread throughout the island? (Widespread species may be more safely hunted than those with limited geographic or habitat distribution).
- Is the game species abundant? (Even measures of relative abundance, obtained by presence absence at a site may be helpful, although actual measures of density or total population are ideal).
- How many people will hunt this species? (Important to estimate potential hunting pressure on the population).

3. When is the peak of breeding? (Hunting season should be set so as not to overlap with the peak of breeding).

The group ran out of time before the following items were discussed and added to the three major

points listed above. However, these items were listed in sequence by one of the participants, and it is logical to assume that they would have been added to the three major points above.

- Basic population biology – yearly reproductive output, yearly survival rate for adults versus juveniles, age at first reproduction, sex ratios.
- Determine if sustainable harvest is theoretically possible – use the basic population biology data in standard population computer models and see if harvest is sustainable under different levels of mortality resulting from hunting.

- Determine best monitoring methods – if a population theoretically can withstand some level of harvest, then methods must be developed to monitor the game species' populations (included both wild and hunter harvested samples).

Assessment of knowledge available for game species management on different islands – of the islands represented in the subgroup discussions, the Bahamas, Cuba, Martinique, and Puerto Rico appeared to have the best available knowledge for sustainable wildlife harvest, but even these islands lacked basic information needed to assure sustainable harvests.

GOOD NEWS FROM JAMAICA: PROTECTION FOR HELLSHIRE HILLS

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Dear Friends,

Despite the demonstrations here in Jamaica, last week the Hon. Easton Douglas, Minister of the Environment and Housing, signed a declaration order bringing into existence Jamaica's newest protected area. Already Jamaica has the Montego Bay Marine Park, the Blue Mountain/John Crow Mountain National Park, and the Negril Environmental Protection Area. Last week on Earth Day, April 22, parts of southern Clarendon and southern St. Catherine (called Portland Bight) became a Protected Area under Section Five of Jamaica's Natural Resources Conservation Act.

In geographical terms, a "bight" is a body of water between two headlands, and strictly speaking, Portland Bight refers just to the body of water between the Hellshire Hills (to the west of Kingston) and Portland Ridge (the part of Jamaica which sticks out to the south). The area declared last week (called the Portland Bight Protected Area [PBPA]) is much larger, taking in 200 sq. miles (520 sq. km) of the surrounding coastal land and all the marine area out to the 200 metre depth contour (some 11 nautical miles south of Portland Point) for a total area of 724 sq. miles (1876 sq. km). It is Jamaica's largest protected area so far – 4.7% of Jamaica's land area and 47.6% of our island shelf.

The Portland Bight Protected Area is rich in wildlife and natural areas; 41% of the land area is taken up with the dry limestone forests of Hellshire, Portland Ridge, and Braziletto Mountain, rated as the largest relatively intact forests of that type left in Central America and the Caribbean (81 sq. miles, 210 sq. km). Of the 271 plant species identified in the Hellshire Hills by Adams and DuQuesnay, 53 (19.6%) are found only in Jamaica (endemic), and several are found only in the Hellshire Hills. The Hellshire Hills is the last known habitat of the Jamaican iguana, an endemic species and Jamaica's largest land animal. In addition, the Hellshire Hills is the last remaining stronghold in Jamaica of the endemic skink. Two endemic reptiles (a thunder snake and the

blue-tailed galliwasp), and an endemic frog are found only on Portland Ridge. Jamaica's only endemic terrestrial mammal, the coney, is found in Hellshire and Portland Ridge. Many endemic and resident forest birds, as well as North American migrant birds, add to the biodiversity.

Another 16% of the land area (32 sq. miles, 82 sq. km) is valuable wetlands, the largest almost continuous mangrove stands remaining in Jamaica (about 48 km long). Within the wetlands are many waterfowl, and healthy populations of our national symbol, the crocodile.

These wetlands, together with extensive sea-grass beds in the waters of the Bight, provide probably the largest nursery area for fish, crustaceans, and mollusks on the island and support 4,000 of Jamaica's 16,000 fishers and their families. Two of Jamaica's largest fishing beaches – Old Harbour Bay and Rocky Point (each with over 1,000 fishers) – fall within the protected area, and there is a tremendous opportunity to manage these fisheries to increase the yields.

Parts of the mainland shoreline, as well as many of the coral cays within the Bight, are major nesting areas for sea birds and endangered sea turtles, including hawksbill and green turtles. Manatees, which were formerly numerous in the area, are now rare, but we have a few.

The Portland Bight area will be a challenge to environmental managers because of the many negative impacts from human activity. Fish habitat is damaged daily by dynamite and drag nets (like beach seines and trawlers), and unsustainable harvesting equipment (such as small net and trap mesh) is common. Killing of turtles, manatees, and crocodiles is common. Cutting of trees in the forests and mangroves for charcoal, fuelwood, fence-posts and yam sticks is causing serious and maybe irreparable damage. Effluent from agriculture and industry is polluting both groundwater and aquifers.

Residents of the area are largely poor, and the area desperately needs new economic opportunities to uplift the standard and conditions of living. Pow-

erful interests are eyeing the area for potentially destructive activities such as limestone mining, caustic soda manufacturing, shrimp farming, solar salt production, and coal-fired power generation. Hopefully, the protection of the area will ensure that more environmentally friendly options are pursued, including those which allow more of the benefits of “development” to remain with the residents of the area. Sustainable nature and heritage community tourism may well lead to more sustainable prosperity, and Portland Bight may yet be the next big growth area in Jamaica's tourism development.

Consistent with Jamaican government policy, management of this new Protected Area will be delegated to an NGO. Discussions are far advanced between the Jamaican government and the NGO I head (the Caribbean Coastal Area Management Foundation [CCAM]) toward this end.

CCAM has already prepared a management plan which has been accepted by the government. It calls for zoning of the PBPA into 28 special management

zones - both marine and terrestrial – including eight “no fishing areas.”

CCAM intends to implement its mandate along co-management lines, and has already midwived three resource co-management councils (fisheries, tourism, and communities) which have begun to take up the reins of management. Resource-users including recreational fishers and government officials comprise these co-management institutions. The regulations soon to be promulgated will reflect the results of discussions in these Councils. Fifty Honorary Game Wardens from among the fishers and vendors are already empowered by the Governor-General and trained.

Rejoice with us! It has taken six years to get here. The real work, however, is yet to be done!

The following message asks you to write to Colombian Government national authorities, seeking their support for efforts to protect the marine and coastal biodiversity of the Archipelago of San Andrés, Old Providence, and Santa Catalina which is Colombia's only oceanic and West Indian Department (State).

CORALINA SEEKS SUPPORT FOR MARINE
BIODIVERSITY IN SAN ANDRÉS

BRUCE POTTER
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The area is biologically very important, but degrading rapidly. The regional environmental protection agency, CORALINA, seeks Caribbean and global pressure on the Colombian government to accede to protection proposals and assistance projects which are currently being held up by the national government. For example, the national government is holding up routine approvals for GEF planning (PDF) grant applications:

Reasons for this holdup by the national government are complex and multifaceted, including:

- the failure of continental authorities to respond to small island needs (something we all can understand);

- the ethnic and cultural isolation of the indigenous (West Indian) culture from the mainstream Hispanic culture of the national government;
- the inability of national government officials to adjust to the new autonomous stature of the regional environmental corporations, such as CORALINA.

We hope that firm but polite letters of support for the establishment of a series of marine biodiversity protection schemes in the Archipelago of San Andrés, Old Providence, and Santa Catalina by CORALINA will help to break loose some of these impediments.

A CALL FOR HELP FROM THE WESTERN CARIBBEAN

A little known and little studied area of the western Caribbean is rich in tropical marine biodiversity. This area is the Archipelago of San Andrés, Old Providence, and Santa Catalina which is Colombia's only oceanic and West Indian department.

The Archipelago has an insular area of 57 km² including the 3 inhabited islands. The marine area covers approximately 350,000 km² with one of the most extensive and productive reef systems in the Atlantic, including 2 barrier reefs, 5 large atolls, and several less well defined coral banks, extending for a total length of over 500 km on the Lower Nicaraguan rise. The reef formations are particularly complex as a result of the open oceanic location and resulting heavy wave action and turbulence to which they have adapted. Many species of fire coral, lace coral, black coral, organ pipe coral, and stony coral as well as sea fans and soft corals are found throughout the Archipelago.

The Southern Marine Area is made up of 2 atolls. South-Southwest Cays are a nearly circular atoll with a diameter of over 8 km and a windward peripheral reef that extends for about 6 km. Courtown Cays (also known as East-Southeast Cays) are a kidney-shaped atoll a little more than 13 km in diameter with reefs to the NE, E, and SE sides. Heavy wave turbulence, swift currents, and an intricate system of caves have created a unique and bizarre reef environment. The Northern Marine Area includes 3 atoll areas. Quitasueqo Bank (locally known as Queena) is the largest atoll structure in the region, as it is over 60 km long and from 10 to 20 km wide with a windward reef wall extending more than 40 km. Serrana Bank is an extensive reef complex about 36 km long and 15 km wide including the insular shelf. Roncador Bank is an elongated atoll, approximately 15 km by 7 km. The peripheral reef is virtually continuous on the windward side and extends for 12 km. These cays and banks are some of the most beautiful places

in the world!

The well-developed reef systems enclose extensive lagoons rich in seagrass beds. The coastal areas of the 3 larger islands have the mangrove swamps necessary to complete highly intact reef ecosystems. 167 species of fish belonging to 54 families typical of ichthyofaunal tropical reef ecosystems have been identified in the Archipelago. There are several endemic fish species, of which *Gambusia aestiputeus* and *Poecilia vetiprovidentiae* are included in the IUCN Red List. Commercially threatened species – queen conch, spiny lobster, spotted spiny lobster, and the giant grouper or jewfish – are found throughout the coastal waters and banks of the region.

Species of sea turtles that feed and nest throughout the Archipelago include hawksbill, green, loggerhead, and leatherback. The species most commonly found is the loggerhead, followed by the hawksbill. However, in recent years, the number of all species is declining dramatically. Beaches throughout the region, most particularly in the outlying cays, offer optimal sites for marine turtle reproduction and the extensive seagrass beds are important feeding areas. Migrant bird species such as falcons, ospreys, herons and egrets frequent the marine region and colonies of birds nest there. There is a sizable booby colony.

These areas are the traditional fishing grounds of the artisanal fishermen of the Archipelago who have been fishing this region since the colony of Providence Island was founded by England in 1623. The native islander people of the Archipelago are of English-African descent and have a history, culture, Protestant religious tradition, and Creole English language consistent with that of the other West Indian islands that were originally settled by the British. Native islanders were granted the status of a legally-recognized ethnic minority group within Colombia by the National Constitution of 1991, at last giving them the right to use English as an official language, worship at Baptist and Adventist churches, present petitions to the authorities, vote for their own governor and mayor, and all the other civil rights that were accorded the Catholic/Latin majority. Prior to that time, the discrimination against islanders culturally and racially was severe.

However, their access to their traditional fisheries has become WORSE in the recent past rather than better. A Congressional law passed in 1993 called for:

- 1) the establishment of a Departmental Fishing Board that would issue fishing permits and licenses within the Archipelago,
- 2) representation by native islanders on the Departmental Fishing Board, and

- 3) establishment of special marine and coastal areas for the use of the artisanal fishermen.

This board has yet to function.

Fishing licenses are issued by the National Institute of Fishing and Aquaculture (INPA) in Bogota, and the fees for all permits and licenses are collected on the mainland. It would appear that there are NO CONTROLS on the issuing of these permits, and abuses are rampant. Nor are there any regulations that protect habitat, limit size, restrict the amount of catch or by-catch, or define closed seasons.

The commercial vessels which ply these banks have almost no controls. They carry as many as a hundred crew from places like Jamaica, Dominican Republic, the mainland coast of Colombia, and Honduras who fish without restriction. Many of these boats are of foreign registry, and the majority fish for weeks or months and land no product in the Archipelago. Indeed, so little fish is available much of the time in San Andrés that it is difficult for the native people to buy the fish, conch, and lobster that make up their traditional diet. The use of fishing methods such as drift nets, set nets, and drag nets is prohibited throughout the region as well as the use of compressors when diving, but these laws are only obeyed by native fishermen. Nonetheless, local fishermen report that they are frequently harassed by Colombian military authorities while the commercial vessels are left alone. The complexities of the situation are further aggravated by the problem of drug trafficking through the region.

When fishing the cays, banks, and outlying waters, native fishermen report that the multi-national boats take anything they can catch or gather, including using turtles as shark bait, harvesting booby eggs, killing quantities of by-catch, and cleaning out conch and lobster beds regardless of size or spawn. Local people report that conch sold are frequently so immature that 15 are required to make up one pound. A few weeks ago divers from a single vessel took more than 30,000 lbs. of queen conch in 2 days; a not unusual occurrence according to local fishermen. They also use long-lines and throw anchors without consideration of destruction to the reef or sea bottom. Given the shallowness of the banks – in particular at Quitasueco – vessels frequently run aground, causing extensive habitat damage. The fishermen also report that fishing vessels that have caught their limit (i.e., according to the amount their boat can carry, since there are no legal limits) pass their permits to vessels waiting outside the banks who then fish using the same permit. In this way, a single permit will be used by as many as 3 or 4 vessels.

The Colombian national environment system

(SINA) has set up a system of decentralized Regional Autonomous Corporations (CARs) to manage renewable resources and the environment throughout the nation. The CAR for the Archipelago - The Corporation for the Sustainable Development of the Archipelago of San Andrés, Old Providence, and Santa Catalina, CORALINA – has developed a project with the support of the artisanal fishing cooperatives to set up a regional marine reserve system which includes 4 separate MPAs : San Andrés barrier reef and coastal waters, Old Providence and Santa Catalina barrier reef and coastal waters, southern archipelago off-shore cays and marine area, and northern archipelago off-shore banks and marine area. The project includes demarcation of management areas such as no-entry and no-take zones (ecological reserves, research areas), limited use zones (dive and snorkel sites, monitoring areas), and buffer zones. An unusual component of the MPA project as designed by CORALINA is the delimitation – with active participation of the native fishermen – of sizable traditional use zones to protect the rights of the artisanal fishermen and restore their fisheries. The management plans for the MPAs would utilize a variety of strategies to strive for restoration and maximum sustainable use of the region's fisheries.

CORALINA, in technical partnership with Island Resources Foundation, has applied for a GEF grant with the World Bank as implementing agency. Additionally, the Center for Marine Conservation has expressed their interest in working with CORALINA on marine conservation projects for the region. CORALINA is working hard to develop and implement strategies of sustainable fisheries management and marine conservation for the area of their jurisdiction. However, in order to make further progress towards this goal, they need the approval of the Colombian national government. Colombia has ratified relevant international instruments including the Convention on Biodiversity (CBD), the UN Convention on the Law of the Sea (UNCLOS), and the Cartagena Convention. The action plan of the Jakarta Mandate – in which the program for implementing the Convention on Biodiversity with respect to coastal and marine biodiversity is outlined - calls for the development of protected areas, sustainable fisheries management, and recognition and protection of traditional sea tenure.

To implement the directives of the CBD and the Jakarta Mandate, the IUCN Global Marine Initiative promotes the establishment of a global system of representative marine protected areas. The IUCN has divided the world's oceanic area into 18 representative marine regions of which the wider Caribbean is region #7. Although the Eastern Caribbean has a number of MPAs, there is a serious lack of marine protected areas in the Western Caribbean. With the exception of a handful of coastal and estuarine reserve areas along the Atlantic coast of Central America, there are no MPAs in this section of the Caribbean.

Subscribers to this list can help CORALINA and the native people of the Archipelago in their mission to recover and protect the biodiversity of their territorial waters by writing or sending a fax to both the Ministry of the Environment and the National Department of Planning urging them to support CORALINA in the establishment of the marine reserve system and demanding that they take immediate action to stop the unregulated over-exploitation of the fisheries of the outlying cays and banks in the northern and southern regions of the Archipelago.

These letters should be sent to:

Dr. Juan Mayr
Minister of the Environment
Calle 37, No. 8-40
Bogota, Colombia
fax : your international access code + 57-1-288-9892

Dr. Jaime Ruiz, Director
National Planning Department
Calle 26, No. 13-19
Bogota, Colombia
fax : your international access code + 57-1-281-3348

Please send e-mail copies of your messages to Island Resources Foundation <bpotter@irf.org> and CORALINA <coralin2@coll.telecom.com.co> Island Resources Foundation is actively supporting CORALINA's efforts---we are not disinterested in the outcome – please help.... Bruce Potter

NORMAN ISLAND LEASED TO VINCI FOUNDATION

BRUCE POTTER
Island Resources Foundation

Norman Island - deemed by many as Stevenson's "Treasure Island" - has been leased, in its entirety, to the Virgin Islands Nature Conservation Institute (VINCI), a foundation established for the conservation of native flora, fauna, and marine life, the restoration of local ecology, and the promotion of education and research furthering the conservation of nature.

In 1750, a pirate by the name of Owen Lloyd allegedly buried some treasure on Norman Island. In fact a large amount of gold and silver was found by the Acting Lieutenant Governor of Tortola, Abraham Chalwill on the island after the pirate and his retinue had been killed by the Spaniards.

VINCI's immediate plans for the island include removal of livestock (primarily goats) to accommodate reforestation with native trees and revegetation of native ground cover and shrubs.

Further development plans include building a small natural history museum, with both public exhibits and a research facility, and planting a botanical garden highlighting the rich and diverse native flora of the Virgin Islands. All construction will be on the "design with nature" principle utilizing up-to-date environmentally sensitive materials and technologies.

In addition to the museum, new construction clustered near the existing beach bar restaurant (Billy Bones) will include amenities aimed at eco-tourism. There will also be some historical restoration of island ruins. Trails and signs designed to generate understanding of ecology, wildlife, and geology will be developed. A dock will be constructed far south of the current beach. Plans will be made to make the Island and museum accessible to school children and

college students.

The Island Sun has learnt that in its initial stages, the VINCI project on Norman Island will be directed by Dr. James (Skip) Lazell of the Conservation Agency. Dr. Lazell has worked on conservation in the BVI continuously since 1980 and is known internationally for his direction of scientific activities at Guana Island, to which he brought hundreds of scientists over the past twenty years.

Norman Island has a rich history and an enormous potential for environmental restoration. The VINCI Foundation told this newspaper that the project ensures a secure environmental future for the island.

Asked what will happen to Billy Bones Restaurant and Beach Bar, a Vinci spokesperson said that Billy Bones Restaurant and Beach Bar is an attraction that benefits eco-tourism. It is leased to its present managers, Valerie and David Sims, who themselves have a substantial commitment to the island's environmental future. It is anticipated that the restaurant and bar will continue to prosper.

This newspaper also asked, how will the goats be removed? VINCI will ask the goats' owners to remove them in a reasonable period of time. If they are not removed, VINCI will encourage others to come and remove them.

According to the Foundation, the museum will be located on the knoll south of the beach and Billy Bones Restaurant and Beach Bar. Norman Island is owned by Audubon Holdings, Ltd., which is directed by a group of BVI residents and Belongers, including the Jarecki family of Guana Island.

Submit reply directly by emailing othernewswire@sidsnet.org.

CALL FOR PAPERS

NEOTROPICAL ORNITHOLOGICAL
CONGRESS

SHOREBIRD SYMPOSIUM
8 October 1999
Monterrey, Mexico

We are pleased to invite you to participate in the Shorebird Symposium to be conducted on 8 October 1999 at the 6th Neotropical Ornithological Congress (4-10 October 1999) in Monterrey, Mexico. The special symposium will be organized by the Western Hemisphere Shorebird Reserve Network (WHSRN) in cooperation with the Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM) and the Consejo Internacional para la Conservación de las Aves. Sección México (CIPA-MEX), organizers of the congress.

WHSRN invites abstracts for oral and poster presentations on shorebird biology, ecology, and conservation relevant to the Western Hemisphere. Special preference will be given to presentations that address the following topics: a) Identification of shorebird population limiting factors, b) Habitat use, quality, and dynamics, c) Life-history research with conservation implications, d) Evaluation of habitat management practices, e) Global climate change and shorebirds, and f) Research on monitoring techniques.

SUBMISSION GUIDELINES

Abstracts should be no longer than 300 words and must include 1) title, 2) author(s)/presenter & affiliation, 3) statement of objectives, 4) methods, 5) results, and 6) discussion/ conclusions. Abstracts may

be submitted by mail on paper, on a 3.5 inch computer diskette formatted in DOS, or by e-mail as an attached document. Electronically formatted abstracts must be in either MS Word or ASCII/RTF format. No MAC formatted disks can be accepted. All submissions must include the authors full name, title, postal address (including country and postal codes), telephone, fax numbers, and e-mail address. All authors will be notified of receipt of their abstracts. Acceptance of presentations will be made until the session is filled and authors will be notified once their paper is accepted or declined. All accepted authors will be asked to submit a complete printed version of their presentation no later than 1 September 1999 for distribution and inclusion in the Proceedings. Guidelines will be provided. Papers will be organized into associated themes for presentation during the Symposium.

Please submit proposed abstracts (or letters stating your intention to submit) to: Jim Corven, Manomet Center for Conservation Sciences, P.O. Box 1770, Manomet, MA 02345, U.S.A. E-mail: jmcorven@manomet.org For further information on the Congress visit the Website: <http://www-cesctec1.mty.itesm/vicon>

REQUEST FOR ASSISTANCE

INFORMATION ON SNOWY PLOVER SIGHTINGS REQUESTED

We are compiling data to describe the distribution and abundance of Snowy Plovers in the eastern United States, Caribbean, and the Bahama Islands. Sightings can be recent or historic. They can include nesting birds, wintering birds, migrants, vagrants, or any other sighting records of Snowy Plovers. If possible, please send information by 1 July. Please con-

tact Leah Gorman, Department of Fisheries and Wildlife, Oregon State University, FRES-3200 SW Jefferson Way
Corvallis, Oregon 97331, USA; e-mail: gormanl@fsl.orst.edu; telephone: (541) 750-7433; fax: (541) 758-7761.

MEETINGS OF INTEREST

NEOTROPICAL ORNITHOLOGICAL CONGRESS//VI CONGRESO DE ORNITOLOGIA NEOTROPICAL, 4–10 Oct 1999, Monterrey and/y Saltillo, Mexico. Inquiries on arrangements to hold symposia or other meetings that relate to the study and conservation of Neotropical avifauna in conjunction with the VI NOC are welcome// Personas interesadas en organizar simposios u otras reuniones relacionadas al estudio y conservacion de avifauna neotropical en coordinacion con el VI CON pueden contactar con: Ernesto C. Enkerlin, Chair of Organizing Committee; Centro de Calidad Ambiental; Sucursal de Correos J, Monterrey, N.L.64849, Mexico; Fax: 52-8-359-6280; Email: enkerlin@campus.mty.itesm.mx, Web Site: <http://www-cestec1.mty.itesm.mx/vicon/>

BIRDLIFE INTERNATIONAL XXII WORLD CONFERENCE, 14–17 October 1999, Kuala Lumpur, Malaysia.

1999 INTERNATIONAL WATCHABLE WILDLIFE CONFERENCE, 18-22 October 1999, Ft. Meyers, Florida, USA. Information can be obtained from Julie Brashhears, Telephone: 850-922-0664; e-mail: brashej@gfc.state.fl.us.

SCALE AND ACCURACY FOR WILDLIFE HABITAT MODELING SYMPOSIUM, 18-22 October 1999, Snowbird, Utah, USA. For infor-

mation contact Kathy Merk, Idaho Cooperative Fish and Wildlife Research Unit. Department of Fish and Wildlife, University of Idaho, Moscow, Idaho 83844-1141, USA. Telephone: 208-885-2750; e-mail: kmerk@uidaho.edu.

RAPTOR RESEARCH FOUNDATION 1999 MEETING, 3-7 November 1999. Araiza Inn or Los Arcos hotel, La Paz, Baja California, Mexico. For information, contact Ricardo Rodríguez Estrella, Local Chair, Centro de Investigaciones Biologicas del Noroeste (CIBNOR), km 1 carr. San Juan de la Costa, P. O. Box 128, La Paz, Baja California Sur, 23000 Mexico. Telephone: 112-536-33; Fax: 112-553-43 or 536-25.

WATERBIRD SOCIETY (formerly Colonial Waterbirds Society) annual meeting, 8-12 November 1999, Congress Center, Grado, Italy. Information can be obtained from the Web Page <http://www.mp2-pwrc.usgs.gov/cws/italmeet.htm>.

23RD INTERNATIONAL ORNITHOLOGICAL CONGRESS, 11–17 August 2002, Beijing, China. Information can be obtained via e-mail: infocenter@ioc.org.cn, via the internet at <http://www.ioc.org.cn>, or via the home page of the 22nd congress at <http://www.ioc.org.za>.

JEROME (JERRY) A. JACKSON has accepted an en-

NEWS OF MEMBERS

dowed Chair as Whitaker Eminent Scholar and Director of the Whitaker Center for Science, Mathematics, and Technology Education at Florida Gulf Coast University, Ft. Meyers, Florida. His new address is: Whitaker College, College of Arts & Sciences, Florida Gulf Coast University, 10501 FGCU Blvd. South, Ft. Meyers, Florida 33965-6565, USA. Telephone: 941-590-7157; Fax: 941, 590-7200; e-mail: picus@fgcu.edu.

SUSAN KOENIG has completed her doctoral program

at Yale University. She is now in Jamaica as the Executive Director of the Windsor Research Station, Sherwood Content P. O., Trelawny, Jamaica, West Indies. Telephone: 876-997-3832; Fax: 876-954-2564; e-mail: windsor@cwjamaica.com.

ABC DECEMBER 1999 CONSERVATION GRANT AWARDS WILL EMPHASIZE BIRDS IN AGRICULTURAL LANDSCAPES AND PARROT CONSERVATION PROJECTS

American Bird Conservancy announces that it will give special attention to proposals on the topic of 'Birds in Agricultural Landscapes' during its December 1999 Small Grants round. Please note that these grants apply only to projects in Latin America and the Caribbean and that the deadline for receipt of proposals is 15 September 1999. Notes on specific program priorities appear below along with full application guidelines which can also be obtained, together with application forms from ABC's website at www.abcbirds.org or by regular mail from American Bird Conservancy, P.O. Box 249, The Plains, VA 20198.

To follow up on last year's grant round, ABC working again in partnership with World Parrot Trust will also consider parrot conservation projects both from current grantees and from new applicants. ABC has produced a list of priority species for conservation action, and proposals addressing the needs of these species are particularly encouraged. Please find below the list of species which is based on the needs identified in the forthcoming IUCN Parrot Action Plan.

Although primary emphasis will be given to these themes, as usual ABC will also consider proposals for other bird conservation programs. The aim of these grant awards is to stimulate in situ field conservation projects in Latin America and the Caribbean undertaken by or involving local conservation groups and individuals. Most grants will be for amounts below the maximum of \$5,000. ALL proposals should use the general application form below.

BIRDS IN AGRICULTURAL LANDSCAPES

ABC seeks proposals the results of which will provide information on innovative approaches to farming methods and techniques that improve land-use while increasing or improving habitat for birds. We are also interested in projects aimed to test hypotheses to examine the importance of different land-use patterns for bird populations and communities, as well as proposals for implementing training programs based on models of alternative agriculture beneficial to birds and other elements of biodiversity.

Proposals are welcomed for projects which assess the benefits to birds of different land-use patterns or farming techniques by using comparative surveys of bird diversity. We encourage researchers to concentrate on evaluating remaining populations of species in agricultural landscapes which are native to the original primary habitats in those areas, as well as to estimate overall species diversity and bird abundance. Ideally, surveys should compare study sites with differing land-use techniques in nearby areas at similar altitudes and/or life-zones and, hopefully, to examine gradients of disturbance from pristine habitats through fragmented and secondary habitats to fully farmed agricultural and monocultural areas. We expect proposals which are carried out alongside economic assessments of differential quality of living for farmers in the study areas, resulting in specific recommendations for land use and new techniques that can improve carrying capacity for birds, and either reduce farmer's work, or increase crop yield or both. It is also desirable that the projects contain community outreach components to ensure that results are communicated to those individuals who can benefit from acting on the findings.

Some examples of the kind of projects we are willing to support on this round of the Small Grants are:

- Bird community composition and structure in heterogeneous agricultural landscapes as opposed to monocultures,
- Evaluation of the importance for birds of pastures mixed with forest patches, living fences, and protected watersheds,
- Estimates of bird diversity in different kinds of poly-cultural organic systems and,
- Comparisons of bird populations in agricultural systems under different regimes of pesticide use.

Special consideration will be given to new ideas and innovations as alternatives to degrading production systems.

LIST OF WEST INDIES PARROT SPECIES OF SPECIAL INTEREST

Cuban Parakeet *Aratinga euops*
Hispaniolan Parakeet *Aratinga chloroptera*
Black-billed Parrot *Amazona agilis*
Puerto Rican Parrot *Amazona vittata*
St Lucia Parrot *Amazona versicolor*
Red-necked Parrot *Amazona arausiaca*
St Vincent Parrot *Amazona guildingii*
Imperial Parrot *Amazona imperialis*

GRANT APPLICATION AND GUIDELINES

American Bird Conservancy has a small endowment that allows it to make a few grants each year for projects related to avian conservation activity in Latin America and the Caribbean. Any project to be funded must be located in the neotropics, involve active participation of local scientists, and have a strong, direct conservation component.

General priorities are:

- Conservation actions for threatened species
- Research on threatened species
- Conservation actions for threatened habitats containing significant numbers of threatened or endangered species
- Research on threatened habitats containing significant numbers of threatened or endangered species
- Joint conservation or management efforts by Latin Americans/Caribbeans and those from outside the region on threatened habitats containing significant numbers of threatened or endangered species
- Training and environmental education

These are guidelines and are not inflexible. The Council will consider exceptions when justified on a conservation basis.

THE PROPOSAL

We receive many more proposals than we can fund. Proposals are more likely to be funded if they explain:

1. Why your project is important
2. Exactly what you are going to do
3. How you are going to do it
4. What effect it is going to have
5. Why your budget is the most efficient use of the funds

We will welcome a second proposal from someone who has done well before. Grants provided in recent years have ranged from \$100 to \$5,000.

Proposals should be submitted using the guidelines outlined in this application form. Proposals are accepted in English, Spanish, and Portuguese.

The following criteria for project development and proposal submission should be observed:

- The proposal must demonstrate a clear conservation objective
- Killing of birds is not allowed
- Transport for project personnel from outside Latin America and the Caribbean will not be funded
- The project budget may include reasonable amounts for equipment purchase, salaries, assistance, transportation, field expenses, etc.
- Proposals should be accompanied by (or followed by) a letter of support or review from at least one of the following: national scientific institute, university, or organization; national or international conservation organization; governmental agency involved in research and/or conservation; well-

known national ornithologist or conservationist

Proposals should be sent to:

Luis Naranjo
Director of International Programs
American Bird Conservancy
P.O. Box 249
The Plains, VA 20198, USA

DEADLINE: 15 September 1999 for consideration in December 1999.

The award: If you are awarded a grant, you are expected to furnish us with an accounting of how the funds were spent and, at the end of the grant period, to produce a report explaining what you did and how we can evaluate your success in fulfilling your objectives. If you do not provide a report and accounting, you will not be eligible for further funding from ABC.

GRANT APPLICATION COVER SHEET

Name of Applicant: _____

Date Submitted: _____

Address of Applicant:

Country: _____

Telephone: _____ Fax: _____ E-Mail: _____

Names and contact details for other project officers:

Title of Project: _____

Amount Requested: _____

Project Start Date: _____ End Date: _____

Where did you hear about the Grants Program: _____

Have you applied for funding before? _____

Have you been funded by ICBP or ABC in the past? _____

Names of two referees from whom you have requested letters of support (these can be sent directly to ABC or attached):

1. _____ 2. _____

Please attach a resume or curriculum vitae to your proposal.

PROPOSAL GUIDELINES

- Summary of Project: (Please limit your narrative to two pages.)
- Describe the objectives of your project and its importance to bird conservation.
- How will this work advance related work that has already been done?
- Describe your methods and expected outcomes.
- How best can the project be evaluated?
- What institutional support (other than financial) do you have for this project?
- Provide a map showing your project location.

BUDGET INFORMATION

Please provide us with information on not only the amount of funding you are requesting from ABC, but also

ABC Conservation Grants

the overall budget for your project and program.

I. Amount requested from ABC. Detail by line-item the amount you are requesting (see below). Please footnote any line-item you feel needs explanation.

II. Cash from Other Sources. Detail by line-item the amount you are receiving from other funding sources. Please indicate the names of the other funding sources and whether these funds have been received or applied for (see below).

III. In-Kind. Detail by line-item any in-kind equipment or services you are receiving for this project. Please indicate at the bottom of this form the sources of these in-kind contributions.

Is this project a part of a larger program? _____. What percentage of funding does this request comprise of the total? _____.

Please provide a budget matrix showing amount requested from ABC, cash from other sources, and in-kind contributions using the following categories:

- Salary
- Overhead/Benefits
- Travel
- Equipment
- Supplies
- Printing
- Contractual
- Services
- Miscellaneous
- Cash from Other Sources (state whether pledged or applied for):

In-Kind Contributions (state whether pledged or applied for):

Other remarks:

GRANT APPLICATION CHECK LIST

- Names and addresses of all researchers listed on Cover Sheet
- Telephone and fax and e-mail contact numbers listed on Cover Sheet
- Amount requested listed on Cover Sheet and budget included
- Project start and end dates listed on Cover Sheet
- Letters of support attached or requested from referee to be sent to ABC Budget information form completed
- Resume or curriculum vitae attached

RESEARCH AWARDS FOR CONSERVATION BIOLOGISTS

The Lincoln Park Zoo has two available sources of funding, the Scott Neotropic Fund and Africa/Asia Fund awards, which have awarded over 126 grants in 19 countries since 1986. The announcement is as follows:

The Lincoln Park Zoo Scott Neotropic and Africa/Asia Funds support field research in conservation biology around the world. The Scott Neotropic fund focuses on projects undertaken in Latin America and the Caribbean.

The fund emphasizes the support of graduate students and other young researchers, particularly those from Latin America. Since 1986, the fund has awarded over 126 grants in 19 countries. Each fund supports projects of young conservation biologists and between five and 15 projects for each fund are supported each year.

The fund awards are seldom greater than US\$7500, and most awards fall in the range of \$3000-\$6000. Initial support is for up to 12 months from the date of award, and the maximum duration of support is two years. The current deadline for receipt of Scott Neotropic proposals is 1 September, and Africa/Asia proposals have no deadline for 1999.

For additional information and application procedures go to www.lpzoo.com, email steveed@ix.netcom.com, or write to: LINCOLN PARK ZOO SNF/AA FUNDS, Steven D. Thompson, Director of Conservation and Science, Lincoln Park Zoo, Chicago, IL 60614.

ELECTION OF SOCIETY EXECUTIVE OFFICERS

The nominating committee presents the following individuals for nomination to executive office in the Society of Caribbean Ornithology:

President - Eric Carey
Vice President - Maurice Anseleme
Secretary - Ann Sutton
Treasurer - Rosemarie Gnam

Ballots for elections of executive officers will be mailed out to all dues-paying members and are to be returned to: Dr. Joseph M. Wunderle, P.O. Box 507, Palmer, Puerto Rico 00721, USA.

**SUBMITTAL OF MANUSCRIPTS, ANNOUNCEMENTS, AND OTHER MATERIALS TO *EL PITIRRE*,
THE BULLETIN OF THE SOCIETY OF CARIBBEAN ORNITHOLOGY**

Form of submission

Hard Copy

One copy on 8.5" x 11" paper.

Mail to Jim Wiley, 2201 Ashland St., Ruston, Louisiana 71270, USA.

Faxes

Discouraged.

If this is your best option, please ensure that the type used is larger than 12 point.

Fax number: 318-274-3870.

Electronic mail

Encouraged

Submit as ASCII ("Text Only") files. Please do not translate to other software languages. Also, please avoid transmittal of attachment files. A hard-copy back-up should be mailed to the editor.

E-mail address of editor: wileyjw@alpha0.gram.edu

Floppy disk

Preferred

Submit in PC or Macintosh environment, preferably using WordPerfect or MS Word software. A 3.5" disk is preferred. Submit a hard copy with the computer disk.

Mail to Jim Wiley, 2201 Ashland St., Ruston, Louisiana 71270, USA.

All Regional Reports, reports on workshops, resolutions, and other Society matters must be submitted through electronic mail (with hard-copy back-up sent through the mail) or as a file on a floppy disk.

Language

Contributions can be in English, Spanish, or French. Translation of the entire text in an alternate language is encouraged. At a minimum, the abstract of longer manuscripts should be provided in at least one of the other two languages.

Format of submitted materials

- All submitted materials must be typed, and hard copies must be clearly legible.
- The manuscript should conform to usage in recent issues of *El Pitirre*.
- Double spaced all written materials, including tables and figure legends.

For scientific papers and notes:

- Number pages through the Literature Cited.
- Do not hyphenate words at the ends of typewritten lines.
- Type tables separate from the text.
- Type figure legends consecutively on a separate page.
- Title page (numbered) — should contain full title, and authors' names and addresses at the time of the research. The present address, if different, should be indicated as a footnote. The title page also includes running heads (less than 36 characters), and the name and contact information for the author who can be most easily contacted.
- An Abstract (less than 5% of paper length) should precede each longer article. It should summarize important premises, summarize findings, and give conclusions.
- Text Citations — should include the author and year (e.g., Smith 1990, Smith and Jones 1991, Smith et al. 1992). Multiple citations should be arranged chronologically.
- Acknowledgments — precede the Literature Cited.
- Scientific and common names are given at first mention and, for birds, follow the AOU's *Check-list*