

damage in the Caribbean National Forest, the last refuge of the Puerto Rican Parrot. No damage occurred to the captive population at the Luquillo Aviary, where 53 birds existed at that time.

Breeding activity in 1990 was low, but in 1991 the wild population produced a record successful nests. Six pairs of parrots in 1992 produced 10 chicks and with another fostered from the Luquillo aviary, a total of 11 chicks fledged from wild nests. In 1993, a project record of 22 chicks hatched and 15 fledged: 13 from wild nests and 9 in captivity.

In 1994, 14 chicks fledged from wild nests, whereas a total of 7 chicks fledged in captivity at the Luquillo Aviary. Most importantly, more new breeding pairs were formed using DNA fingerprinting information as the primary selection criteria. As a result of this, seven pairs of captive Puerto Rican Parrots laid fertile eggs.

Improved management techniques that have contributed to this improvement in productivity include structural modi-

fications of natural cavities, fostering techniques, use of molecular genetics techniques to maximize genetic representation, a closed circuit camera system to monitor captive breeders, and use of PVC nesting structures for captive breeders to provide a re-usable, cleaner, and drier environment.

A second captive program has begun in a cooperative effort with the Commonwealth of Puerto Rico Department of Natural and Environmental Resources. Six breeding pairs of captive Puerto Rican Parrots were transferred to the Río Abajo Aviary during 1993 to form the nucleus of the second captive population. Two chicks fledged at that aviary in 1994.

The recent successes for the recovery of the Puerto Rican Parrot are the result of many factors, including the inherent ability of the parrot to recover, the enhanced management techniques, and the effective habitat management but, most of all, the special touch of a group of people highly committed to the recovery of the parrot.

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#### ABSTRACTS OF SELECTED PAPERS PRESENTED AT THE ANNUAL MEETING OF THE SOCIETY OF CARIBBEAN ORNITHOLOGY, MARTINIQUE, FRENCH WEST INDIES

##### PROYECTO EVALUATIVO DE LAS POBLACIONES DE TORCAZA CABECIBLANCA (*COLUMBA LEUCOCEPHALA*) EN LA ISLA DE LA JUVENTUD, CUBA

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Las poblaciones de Torcaza Cabeciblanca (*Columba leucocephala*) en la Isla de la Juventud, no han sido evaluadas desde el final de la década de los años 70. Aunque no existen registros de estudios recientes, hay evidencias de que la especie aún se mantiene en la Isla y posee perspectivas de incrementarse sus poblaciones. En el presente proyecto, se desarrollará un estudio evaluativo integral de las poblaciones existentes con vistas a obtener los elementos científico-técnicos necesarios para la protección y manejo adecuado de este recurso. La situación general de las colonias reproductivas y zonas de alimentación, los cruces de torcazas entre ambas áreas, períodos y éxitos reproductivos, depredadores y otros aspectos biológicos, serán estudiados en el presente proyecto.

##### EFFECTS OF HURRICANE HUGO ON MONTSERRAT'S FOREST BIRDS AND THEIR HABITAT

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As a result of Hurricane Hugo, damage sustained by Montserrat's forests was severe. Throughout the island's three interior mountain ranges (Centre, Soufriere, & South Soufriere Hills) from lower-to mid-elevations, 52% (n=203) of the moist- and wet-forest trees sampled suffered loss or damage to their primary branches. Trunks, often snapped of all branches, were left standing. Six months following Hugo, many of the surviving tree trunks showed extensive generation of primary branches and foliage via adventitious budding and epicormic growth. Damage was more severe at higher elevations in hygrophytic forest and especially in elfin woodland on the upper slopes of the South Soufriere Hills, the hardest hit by Hugo. Of 369 trees sampled, 63% suffered trunk snap or throw (including uprooting and "trunk lean" > 45 degrees). A combination of mist-net, transect, and fixed-radius point count census methods showed that six months

following disturbance: (1) Avian populations in general, but especially frugivorous and nectarivorous species, had not obtained pre-disturbance sizes. (2) Many species, including the endemic Montserrat Oriole (*Icterus oberi*), had emigrated from montane forest seeking habitat refugia in the more protected, steep-sided arroyos (ghauts) and more advanced regenerated forest belts found at lower-to-mid elevations. (3) Whereas most species were sparser in dry forest and hard-hit elfin woodland, nectarivores were more plentiful in these habitats, aggregating around the abundant, flowering epiphytes and ground-cover plants. (4) Most forest birds observed foraging in montane habitats were forced to feed within 1-2 m of the ground. (5) Six species (3 of which were mimids), all habitat and food generalists, were common in every area sampled. (6) The most abundant species was the Pearly-eyed Thrasher (*Margarops fuscatus*), a major agricultural pest, predator, and general pest. (7) The Caribbean Elaenia (*Elaenia martinica*) showed extreme population fluctuations over the past 50 years, occurring in large numbers following major hurricanes, then all but disappearing during the interims.

#### EVALUATION OF THE MICROBIAL FLORA FOUND IN NESTS AND CHICKS OF WILD AND CAPTIVE PUERTO RICAN PARROTS (*AMAZONA VITTATA*)

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Five natural cavities in palo colorado (*Cyrilla racemiflora*) and one in tabonuco (*Dacryodes excelsa*) trees in the rain forest of the Luquillo Mountains, Puerto Rico, were sampled for the presence of bacteria and fungi. Samples were also collected at the Luquillo aviary from nest boxes made of plywood and PVC plastic. In the wild, samples were collected during the nesting season of Puerto Rican Parrots and included collection of wood chips from the nest bottoms and swabs of the nest walls. Additionally, swabs of the egg surface and of the choana and cloaca of wild and captive parrot chicks were collected. The preliminary results presented will include approximate number of colonies detected as well as the specific composition of the most prevalent microorganisms identified from the samples collected. Management recommendations derived from the database generated for the captive parrot population at the Luquillo Aviary will be discussed.

#### INTER-ISLAND SONG DIFFERENTIATION AND MEME FLOW IN WEST INDIAN BLACK-WHISKERED VIREOS (*VIREO ALTILOQUUS* SSP.)

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Black-whiskered Vireos are migratory (*Vireo a. altiloquus*, *V. a. barbatulus*) or sedentary (*V. a. barbadensis*, *V. a. canescens*, *V. a. grandior*) and inter-island differences in song are reflected in the migratory habit. Some song syllables are shared among subspecies and within subspecies of the 10 populations examined in this study (St. Vincent, Guadeloupe, and Montserrat, *barbadensis*; Puerto Rico, New Providence, Andros, and Cuba, *barbatulus*; Jamaica, *altiloquus*; San Andrés, *canescens*; Providencia, *grandior*). A population of the Yucatan Vireo (*V. m. magister*) from Cozumel Island is used as an outgroup. Numbers of syllables shared diminish as a function of the transition from migratory to sedentary habit in these vireos and also as a function of the degree of isolation of populations. There is substantial syllable similarity between *magister* and the large sedentary *canescens* and *grandior*. Bottlenecking and subsequent drift may also be a factor in the inter-island cultural evolution of song in *V. altiloquus* ssp.

#### CARACTERIZACION ECOLOGICA DE LA AVIFAUNA CUBANA EN PELIGRO DE EXTINCION

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En este trabajo se reconocen 20 especies de aves residentes urbanas en peligro de extinción (4 géneros endémicos, 6 especies endémicas, 4 subespecies endémicas y 6 especies no endémicas). De este grupo solo dos son acuáticas y el resto es de bosques y arboledas. Una especie, el Carpintero Real (*Campephilus principalis*) aparentemente ya está exiguado, tres especies se encuentran confinadas a una sola área geográfica y las restantes se encuentran en poblaciones dispersas por toda la isla de Cuba. La causa principal de amenaza para todas las especies es la destrucción del hábitat, y para algunas además la caza y colecta de sus pichones. Ocho especies poseen rareza natural, por lo que deben ser priorizadas para la conservación, junto con las de nicho ecológico especializado (trece especies).

#### ESTUDIO DE LOS HUMEDALES DE MAYOR IMPORTANCIA PARA LAS AVES ACUATICAS EN LA PROVINCIA DE MATANZAS, CUBA

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El creciente desarrollo industrial-turístico y el aumento del nivel del mar a consecuencia del calentamiento global advierten el peligro que corren los ecosistemas costeros del Caribe de disminuir en número y extensión territorial. Este fenómeno engendra una seria y alarmante amenaza que atenta contra la dinámica, belleza y biodiversidad de los humedales costeros tropicales por lo que nuestros esfuerzos deben estar prioritariamente dirigidos hacia la ubicación,

estudio y conservación de estas áreas y sus valores naturales. En el trabajo se exponen los principales resultados obtenidos durante los censos y la evaluación de las comunidades de aves acuáticas residentes y migratorias neárticas asociadas a cuatro humedales de importancia en la provincia de Matanzas en el período de 1989-1992. Se ofrece una relación de 51 especies de aves censadas en la provincia pertenecientes a 5 órdenes, 11 familias y 30 géneros, destacándose por su abundancia relativa *Phoenicopertus ruber*, *Himantopus mexicanus*, *Calidris mauri*, *C. pusilla*, *C. minutilla* y *Pluvialis squatarola* entre otros, así como una breve caracterización de la ornitofauna y los valores ornitológicos registrados en cada uno de los humedales estudiados, entre los que se encuentran las especies *Charadrius melodus*, *C. alexandrinus*, *Phalaropus tricolor* y *Haematopus palliatus*. Se presenta finalmente un mapa con la ubicación de los humedales de mayor importancia para las aves acuáticas evaluados en la provincia de Matanzas y las áreas potenciales propuestas para continuar éste tipo de estudio en otras regiones del Archipiélago cubano en un futuro.

#### DISTRIBUCION Y ESTIMADO POBLACIONAL ACTUAL DE CUATRO AVES ACUATICAS NATIVAS EN PUERTO RICO

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Desde 1878 varios autores hacen mención de la distribución y el estimado poblacional para aves acuáticas nativas en Puerto Rico. A partir del 1991 hemos estudiado la distribución, uso del hábitat a través de la isla, y factores que afectan las poblaciones de cuatro aves acuáticas nativas. Este estudio presenta la reducción en la distribución de la Chiriría Nativa (*Dendrocygna arborea*), el Pato Quijada Colorada (*Anas bahamensis*), el Pato Chorizo (*Oxyura jamaicensis*) y el Gallinazo Nativo (*Fulica caribaea*). Se detecta una reducción en el estimado poblacional de la Chiriría Nativa (100 ind. a partir 1986) y el gallinazo nativo (4,600 ind. a partir del 1931). El Pato Quijada Colorada y el pato chorizo presentan un ligero aumento en su estimado poblacional de (400-500 ind.) y (700-800 ind.) respectivamente, a partir de los últimos ocho años. Varios problemas han afectado las poblaciones de estas aves acuáticas, como por ejemplo: la destrucción de su hábitat y la sobrecacería, entre otros. Se discute la protección dada a estas aves por las agencias estatales y las recomendaciones de manejo para sus hábitats.

#### THE HUMMINGBIRDS OF MARTINIQUE

Marcel Bon Saint Come

Beleme - Lamentin, Martinique

The four species of hummingbirds resident in Martinique will be described, along with discussions of their flight, diet, and plumage characteristics.

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#### BIRD SPECIES INTRODUCED TO MARTINIQUE IN THE PAST 40 YEARS

Marcel Bon Saint Come

Beleme - Lamentin, Martinique

Among the escaped cage and other exotic or non-native birds that have been observed in Martinique in the past 40 years are: Estrildidae—*Amandava amandava*, *Lonchura malacca*, *Uraeginthus* sp.; Ploceidae—*Euplectes orix*, *Ploceus cucullatus*; Icteridae—*Molothrus bonariensis*; Fringillidae—*Sicalis luteola*; Turdidae—*Turdus nudigenis*; and Anatidae—*Dendrocygna arborea*. The status of these species and their potential impact on native populations will be discussed.

#### L'AVIFAUNE SÉDENTAIRE DE LA MARTINIQUE: UN PROGRAMME PÉDAGOGIQUE INFORMATISÉ

Beatriz Conde

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Présentation d'un support pédagogique multi-média, destiné à la connaissance de l'avifaune sédentaire de la Martinique dans le cadre d'un programme d'éducation de l'environnement.

#### USO DE NIDOS ARTIFICIALES POR GUACAMAYA BANDERA Y LORO REAL EN LA RESERVA PRIVADA DE FLORA Y FAUNA MATACLARA, EL BAUL, ESTADO COJEDES, VENEZUELA

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Con el objeto de evaluar la utilidad de los nidos artificiales para mejorar el hábitat de poblaciones silvestres de Guacamaya Bandera (*Ara macao*) y Loro Real (*Amazona ochrocephala*) afectadas por las deforestaciones y explotaciones madereras, se realizó durante 1993 y 1994, un estudio en la Reserva Privada de Flora y Fauna MATACLARA ubicada en la región del macizo rocosa de El Baul en el estado Cojedes, Venezuela. En marzo de 1993 se colocaron 18 nidos artificiales de madera, colgados en los troncos de algunos árboles de la vegetación natural. Los nidos fueron visitados frecuentemente por guacamayas y loros, siendo la exitosa la reproducción de varias parejas de Pato Güirirí (*Dendrocygna autumnalis*) y Halcón Primito (*Falco sparverius*). Se concluye que los nidos artificiales pueden ser una medida eficiente para recuperar poblaciones afectadas por la destrucción del hábitat. Por último, se agradece el financiamiento otorgado por la asociación EcoNatura y el apoyo logístico suministrado por las organizaciones no gubernamentales MANFAUNA, ASOMUSEO y la Reserva Privada de Flora y Fauna MATACLARA.

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#### THE CONSERVATION AND ECOLOGY OF THE ST. LUCIA PARROT: A PRELIMINARY REPORT

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We studied the St. Lucia Parrot (*Amazona versicolor*) from March to July, 1994, as part of a cooperative research effort among the Government of St. Lucia, Jersey Wildlife Preservation Trust, and Wildlife Preservation Trust International. We initiated an active field program of locating nests and obtaining detailed observations of nesting behavior. Fifteen nest cavities were located. Of these, further observations indicated that six nests were active and contained eggs or young during the study. Three others were the primary cavities of non-breeding pairs, and the remainder were cavities that were visited occasionally by pairs. In one instance, we found a post-fledgling area with 2 offspring present, but were not able to locate the nest. We used an ethogram code, data forms, scan sampling, and all occurrences sampling to record behavior of adults and nestlings. Over 800 hours of observation at active nests were accrued during the study. We report on the progress of the study and discuss preliminary findings concerning parental care at the nest, conflict with the Pearly-eyed Thrashers (*Margarops fuscatus*), possible nest site limitations, and feeding observations. We also discuss the initiation of a more comprehensive study to begin in 1995.

#### CONSERVING BERMUDA'S ENDANGERED EASTERN BLUEBIRD POPULATION

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Bermuda supports the only disjunct, non-migratory population of the Eastern Bluebird (*Sialia sialia*) outside of eastern North America. Both populations share similar conservation problems and both are in need of management. As a cavity nester, the bluebird has suffered serious nest site competition from the introduced cavity nesting House Sparrow (*Passer domesticus*) and European Starling (*Sturnus vulgaris*). Both populations have suffered from indirect pesticide poisoning and habitat change, which reduced availability of nesting cavities. In Bermuda, the loss of the once dominant endemic cedar (*Juniperus bermudiana*) forest, which provided most of the nesting cavities, has made the species almost totally dependent on artificially provided nest boxes. Progressive urbanization has reduced availability of suitable feeding habitat in favor of the sparrow and starling. By 1993 the bluebird population was estimated at less than 500 pairs. Responding well to manipulative intervention on its behalf, the bluebird has made an ideal candidate for a community-based conservation project. Research conducted by the Conservation Division of the Department of Agriculture in

the 1960s and 1970s (Wingate) revealed 2 major factors limiting the bluebird population in Bermuda: availability of competition-free nesting cavities and mortality from House Sparrow aggression. The tropical fowl mite (*Ornithonyssus bursa*) was also revealed to be a common nest parasite, causing high mortality of chicks under certain circumstances. Accordingly, nest box provisioning and management, in conjunction with House Sparrow control, has been promoted with the objective of persuading private land owners or managers with suitable habitat to erect and manage their own nest boxes. As a result, Bermuda has succeeded in arresting the earlier trend of rapid decline. Currently, a cooperative research program is being undertaken with Dr. Patricia Adair Gowaty (University of Georgia) to analyze comparative demography and breeding biology of the bluebird.

#### DIFERENCIACION SEXUAL EN LA COTORRA CUBANA (*AMAZONA LEUCOCEPHALA LEUCOCEPHALA*)

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Los psitácidos en general no presentan dimorfismo sexual, y esto es un gran problema para su estudio. Nosotros analizamos 12 machos y 8 hembras de Cotorra Cubana (*Amazona leucocephala leucocephala*) provenientes de todo el país, para analizar las diferencias sexuales en 10 medidas morfométricas y cinco de coloración del plumaje, midiendo tanto las diferencias de valores medios en términos absolutos y relativos, así como el grado de solapamiento de esos valores. Los patrones de coloración no diferencian los sexos, pero se presentó un polimorfismo del patrón de color abdominal, con dos morfos que siempre se encontraron en un 98% en la naturaleza emparejados de forma heterogámica, lo que se interpretó como un caso de apareamiento disociativo. Los grados de solapamiento entre las variables relativas ancho cabeza/largo del pico y ancho cabeza/largo del torso fueron extremadamente bajos (cerca de un 35%) y al parecer pueden separar los sexos con un error de entre el 15-20%.

#### THE STATUS OF THE KEY WEST QUAIL-DOVE (AVES: COLUMBIDAE) IN "CAYO HUESO" (KEY WEST), FLORIDA, UNITED STATES AND ITS MORPHOLOGICAL VARIATION THROUGHOUT ITS RANGE

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A total of 212 specimens of Key West Quail-Dove (*Geotrygon chrysia*) were examined to determine the morphological variation among the West Indian populations: Cuba, including the Isle of Youth (formerly Isle of Pines) and Cayo Coco; Hispaniola, including Haiti and the islands of Gonave and de la Tortue; Puerto Rico; Bahamas; and Florida (Fort Lauderdale to Key West). However, only 188 specimens were considered

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for the statistical analysis because many specimens had worn plumage or were not fully adults. I concluded that the nest with two white eggs reported by Audubon belonged to *Starnoenas cyanocephala* rather than to *G. chrysis*. The quotations of Audubon and other 19th century authors, as well as the finding of 3 specimens collected in 1897 by John Atkins (probably remnants of a relict population) and another by Audubon at Key West, gave support to the existence of a population of *G. chrysis* inhabiting Key West and perhaps other Florida Keys in the past, despite the sporadic arrival of stragglers to Florida in years after the deforestation of Key West. An analysis of the populations of all the islands showed no significant variation in pattern and color, but substantial variation in size. The single male from Puerto Rico and the 4 birds from Key West seem to be smaller than birds in other populations. No significant geographical variation was found among Cuban populations segregated by provinces or among Hispaniolan populations. No suitable habitats for *Starnoenas* or *G. chrysis* were found at Key West, but in some of the other southern Florida keys considerable suitable habitat was found to harbor *G. chrysis* and *Zenaida aurita*. Therefore, the reintroduction of these two species in some of the empty habitats of the southern Florida Keys is recommended.

#### ANALYSE STATISTIQUE DE CHASSE DANS LES ANTILLES FRANÇAISE

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Analyse statistique de tableau de chasse chez la Tourterelle (*Zenaida aurita*) de 1986 à 1993, dans les Antilles Française et également la manière d'illustrer la différenciation des âges par la coloration des pâtes chez la Tourterelle en période de chasse.

#### LA PHENOLOGIE DE LA REPRODUCTION CHEZ LE TOURTERELLE A QUEUE CARREE (*ZENAIIDA A. AURITA*) DETERMINEE A L'AIDE DES ANALYSES DE TABLEAUX DE CHASSE

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L'Office national de la chasse effectue depuis 1986 des analyses de tableaux de chasse avec le concours de la Fédération départementale des chasseurs de la Martinique. Environ 150 à 200 tourterelles ont été examinées par un quand au sexe, à l'âge et à l'activité de reproduction. L'étude de la période de reproduction, mal cernée dans les Antilles françaises, se fonde sur la détermination de la date d'éclosion des juvéniles, estimée en fonction de la mue des rémiges primaires. D'autres mesures effectuées sur les adultes (activité El Pitirre 7(3)

sécrétrice du jabot, dimensions des gonades mâles ou activité des ovaires) concourent à situer la période de chasse par rapport à la période de reproduction. L'ouverture de la chasse a eu lieu en fin juillet de 1986 à 1990 et expérimentalement en fin août de 1991 à 1993. La comparaison des dates d'éclosion de ces deux périodes montre que:

1<sup>o</sup> - L'ouverture fin juillet intervenait en pleine période de reproduction;

2<sup>o</sup> - La production des jeunes était affectée tant par l'ouverture en fin juillet qu'en fin août.

L'analyse de la sécrétion du jabot confirme l'importance de l'activité de reproduction pendant les périodes de chasse de 1986 à 1992. Cependant, en 1993, contrairement aux autres années, l'activité de reproduction était en phase décroissante à la date d'ouverture. Il semblerait donc que la fin de la période de la reproduction puisse se situer, bon an mal an à la mi-septembre, ce qui reste à confirmer.

#### ESTUDIO DE RADAR SOBRE CORREDORES DE AVES MIGRATORIAS ENCIMA DE LA HABANA, CUBA

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El uso de las técnicas de radiolocalización en investigaciones ornitológicas en Cuba, fue iniciado, de forma experimental en 1988, lográndose los primeros registros ornitológicos a través de un radar meteorológicos al año siguiente, lo que permitió ampliar las perspectivas futuras de su utilización con propósitos de estudios fundamentales y de aplicación a la aviación. Los objetivos principales de este estudio en ejecución, consisten en el análisis y características de las ecoseñales de aves, con respecto a su ubicación, velocidad, dirección y altitud de las mismas. Así como, detectar y precisar los corredores migracionales de las aves que atraviesan los territorios de las provincias habaneras. Para la detección de las aves migratorias, se utiliza un radar de vigilancia meteorológica (MRL-5), ubicado en la Estación de Casablanca (Ciudad de La Habana). Este, siempre se emplea en la longitud de onda de 10 cm y a una escala de trabajo con alcance máximo de 50 km. Los ecos de aves en los indicadores del radar, son registrados por observación directa y/o mediante tomas fotográficas. Se han determinado las distribuciones preliminares de los ecos de aves en cuanto a su altitud, localización, trayectorias y velocidades de los desplazamientos. La altitud media de las señales de aves se registró a 1,32 km durante la migración primaveral (1989) y a 2,81 km en la migración otoñal (1991). De acuerdo con la distribución de las trayectorias seguidas por las aves, la mayor cantidad de estas se mueven hacia el interior de la Isla con un rumbo predominante hacia el SE-S (56,2%) mientras que en su salida los desplazamientos principales indican que buscan las rutas del Mississippi (71%) y el Atlántico (20%). Tal información, constituye un resultado de importancia

fundamental en la caracterización de los corredores y patrones migracionales que pasan por nuestro territorio. Al mismo tiempo, permite valorar la posible coincidencia de las aves migratorias, con las aeronaves que realizan su tráfico aéreo.

The use of radar techniques in ornithological research in Cuba was experimentally begun in 1988, with the first ornithological records using a meteorological radar obtained the next year. This permitted us to extend the use of radar in fundamental bird studies and for applied purposes. The principal objectives of this study were to characterize and analyze birds with respect to their position, speed, track direction, and altitudes. Also, objectives included detecting and estimating with precision the bird migration flyways that cross over the territories of Havana provinces. A meteorological surveillance radar (MRL-5) in the Meteorological Station of Casablanca (Havana City) used to detect migrant birds. The bird echoes in the radar indicators were recorded by watching and/or photographing the screens. Preliminary distributions of bird echoes were estimated with regard to altitude, position, track direction, and ground speed of the movements. The mean altitude of bird signals was recorded at 1.32 km during the spring migration (1989) and 2.81 km in the fall migration period (1991). According the bird track distribution, the majority of migrant birds moved toward the interior of Cuba, mostly to the SE-S (56.2%), whereas the birds moved to Mississippi (71.0%) and Atlantic (20.0%) routes in their departure. This information is important to the knowledge of migrant bird flyway patterns crossing the Cuban territory. At the same time, it could be used to estimate the probable coincidence of migrant birds with aircraft traffic.

COMPOSICION Y ABUNDANCIA DE LA AVIFAUNA TERRESTRE EN SEIS LOCALIDADES DEL AREA PROTEGIDA MIL CUMBRES, P. DEL RIO, CUBA  
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La investigación se desarrolló en seis localidades del Area Protegida Mil Cumbres, Pinar del Río, Cuba entre el 30 de enero y el 11 de febrero de 1993 y entre el 26 de enero y el 9 de febrero de 1994. Se determinaron las características cuali- y cuanti-tativas de la flora y vegetación de las 6 localidades al aplicar el método de James y Shugart (1970) con modificaciones propuestas por Wallace (1991) a 56 parcelas de vegetación. Se determinó la composición y abundancia relativa de la avifauna por los inventarios, conteos por parcelas circulares y capturas con redes ornitológicas. Se capturaron y anillaron 715 aves correspondientes a 17 especies migratorias

neárticas neotropicales y 22 especies residentes permanentes. Los mayores valores de abundancia relativa y tasa de captura correspondieron a los habitats cuya vegetación predominante era el Pinar. Se relacionaron las características de la vegetación con la composición y abundancia de la avifauna.

UPDATE ON MIGRANT AND NATIVE BIRD SPECIES OF GRENADA, WITH SPECIAL REFERENCE TO THE GRENADA DOVE (*LEPTOTILA WELLSI*), AN ENDANGERED SPECIES

Aria Johnson

Zoology Department, University of the West Indies, Jamaica

An update on the status of the migrant and native bird species of Grenada is presented, including times of migration and conditions of habitats. An overview of the conservation efforts for the endangered Grenada Dove is given.

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

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<sup>1</sup>Museo Nacional de Historia Natural de Cuba, La Habana, Cuba; <sup>2</sup>Academy of Natural Sciences of Philadelphia, Philadelphia, U.S.A.

The Stygian Owl is widely distributed in Cuba and the Isle of Pines. The owl is typically found in forested areas, including deciduous woods and pine forest. Morphological variation related to sex and breeding data are presented, including: nest shape and clutch size. Also, some aspects of its diet, as well as its behavior, are discussed.

PROBLEMS IN JAMAICAN ORNITHOLOGY

Catherine Levy

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In 1965, James Bond proposed three subjects that needed research in Jamaican ornithology. The disappearance of the Jamaican Petrel and the Jamaican Pauraque, and the study of waterfowl in the southwestern section of the island. After nearly 30 years, research on these subjects is still lacking. This paper describes the situation today and re-examines information on these and other problems. The lack of progress in research appears to be due to: 1) use of secondary, inaccurate or incomplete information; 2) lack of both Jamaican personnel and the necessary resources to undertake research projects; and 3) short-term and sometimes inconclusive studies, especially by foreign researchers. Attempts to correct the misinformation and to establish a reliable records system will at least solve one of the problems plaguing research on birds in Jamaica.

Martinique meeting abstracts (continued)

CHANGES IN THE BIRD SPECIES LIST FOR  
ANTIGUA-BARBUDA

Kevel Lindsay

Environmental Awareness Group (EAG), Box 103, St. John's,  
Antigua-Barbuda

Mr. Nathan Gricks initiated a regular programme of bird watching in Antigua-Barbuda. From 1992 to spring 1994, over 40 new species were added to the local list, bringing the final list to over 180 species.

ESTUDIO DE LA GOLONDRINA DE CUEVAS  
(*HIRUNDO FULVA*) EN AGRAMONTE, PROVINCIA  
DE MATANZAS, CUBA

Alejandro Llanes<sup>1</sup> y Eduardo Abreu<sup>2</sup>

<sup>1</sup>Instituto de Ecología y Sistemático, Cuba; y <sup>2</sup>EMA, Victorio de  
Girón, Cienaga de Zapata, Cuba

De las aves migratorias de primavera que arriban a nuestro territorio, la Golondrina de Cuevas (*Hirundo fulva*) es una especie común que se encuentra distribuida en Cuba e Isla de la Juventud. La misma utiliza para su nidificación cuevas y casas aisladas en el campo, pero además construye sus nidos en edificios habitados e instalaciones fabriles de nuestras ciudades. Este trabajo se realizó en las cuevas de Berovides y Sebastián situadas a 1.5 km al este del pueblo de Agramonte en la provincia de Matanzas. Se dan aspectos relacionados con la reproducción de esta especie entre los que se destacan: dimensiones y altura de los nidos, tamaño de los huevos, entre otros. Se muestran algunas de las medidas morfométricas de la especie tales como: largo del pico, tarso, ala plegada y cola. Se analiza además la utilización del parche de cría y la protuberancia cloacal para el sexado de las aves capturadas durante la etapa reproductiva. Por último se ofrecen datos preliminares acerca de la muda de esta ave migratoria.

AN OVERVIEW OF THE POSSIBLE MORTALITY  
FACTORS FOR POPULATIONS OF NEARCTIC  
MIGRATORY SONG BIRDS DUE TO DEFORESTATION  
IN THE NEOTROPICS

Marcia Mundle

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Data from the Breeding Bird Survey (Robbins *et al.*, 1986) have shown that there are significant declines in the populations of breeding birds in North America. This is especially significant for species which winter south of the United States - Mexico border. Among the reasons cited for this decline is deforestation in the neotropics. I analyzed the possible mortality factors, which could be associated with deforestation, on populations of non-breeding, migrant insectivorous birds in the neotropics. Some of the factors investigated were predation, destruction of stop-over sites, competition for food, space, shelter, and other effects which may be mani-

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fested on the breeding grounds. I also provide suggestions for integrating the monitoring of local and migrant species in Jamaica, so that species and habitat management plans can be devised which are complementary both to migrants and residents, and especially the endemics.

PARC NATUREL REGIONAL DE LA MARTINIQUE

José Nosel

Directeur, Réserve Ornithologique des Ilets de Sainte-Anne,  
Martinique

En 1983, le Parc Naturel Régional de la Martinique entreprend le projet de mise en réserve de quatre îlots situés à Sainte-Anne, Commune du Sud de la Martinique, dont la population est composée d'espèces migratrices: *Sterna fuscata*, *Sterna anaethetus*, *Anous stolidus*, *Sterna hirundo*, et *Puffinus lherminieri*.

A SUMMARY OF CARIBBEAN BIRD SPECIMENS IN  
CARNEGIE MUSEUM OF NATURAL HISTORY

Kenneth C. Parkes

Carnegie Museum of Natural History, 4400 Forbes Ave.,  
Pittsburgh, PA 15213, U.S.A.

For the benefit of workers doing specimen-based research on Caribbean birds, the history and scope of the Caribbean bird collections in Carnegie Museum of Natural History are summarized. This will alert workers who may not be aware of our strong holdings from some areas, and will save others the trouble of writing to us for loans or information regarding birds from areas lacking or sparsely represented in our collections.

VOCALIZATION DIFFERENCES IN THE LESSER  
ANTILLEAN PEWEE

G.B. Reynard

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In "Birds of the West Indies" (Bond 1985), the Lesser Antillean Pewee (*Contopus latirostris*) consists of three subspecies, *C. l. latirostris* in St. Lucia; *C. l. brunneicapillus* in the islands of Dominica, Guadeloupe, and Martinique; and *C. l. blancoi* in Puerto Rico. Bond earlier (1936) had some uncertainty in the classification, stating, e.g., that the St. Lucia bird "...is so different from the other two races that it might well be regarded as a distinct species"; in 1965, "of the three forms of this species the nominant race of St. Lucia is the most distinctive in plumage and in voice"; and finally, in 1980 (23rd Supplement to 1956 *Check-list*) "vocalizations of the three forms of *Contopus*...of Puerto Rico and the Lesser Antilles are as distinctive as those of *Myiarchus* from Puerto Rico and to St. Lucia." Plumage and morphometric data, color slides, and tape recordings, many from other SCO members, are being studied to reconsider the classification. Information to date tends to support return to three species.