

UPDATE ON THE "WEST INDIAN WHISTLING-DUCK (WIWD) AND WETLANDS CONSERVATION PROJECT" – REPORT FROM THE WIWD WORKING GROUP

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THE WEST INDIAN WHISTLING-DUCK WORKING GROUP (WIWD-WG) held its fourth meeting on 6 August 1999 at the Society of Caribbean Ornithology's annual meeting in Santo Domingo, Dominican Republic. For the past 4 years, the group has been working to reverse the decline of the endangered whistling-duck, a Caribbean endemic, and to make it a "flagship" for wetlands conservation in the region. As part of our region-wide Public Education and Awareness Program we have developed and distributed several educational tools on the duck and the importance of wetlands in general. We also conduct workshops for natural resource agencies and schoolteachers on the use of our materials and are now in the final stages of preparing a wetlands education workbook for schoolchildren of all ages. The WG also provides training to regional biologists in waterfowl population survey and monitoring techniques and has awarded funds to individuals in several islands for surveys of WIWD populations and identification of important wetland habitats for protection.

A second grant proposal submitted to the US Fish and Wildlife Service Western Hemisphere Program for continued support of the WIWD and Wetlands Conservation Project was awarded funding in the spring of 1999. These new funds have enabled us to continue making progress on our project objectives. We also gratefully acknowledge support we have received from Ducks Unlimited Canada, Conservation International Bahamas, and the American Bird Conservancy. Finally, we thank the Royal Society for the Protection of Birds (RSPB) for providing travel funds for all the UK Overseas Territories delegates (Anguilla, British Virgin Islands, Turks and Caicos Islands, Cayman Islands, and Montserrat) to attend the SCO meeting, as well as contributing to the WIWD and Wetlands Education Workshop.

Co-chairs Lisa Sorenson and Patricia Bradley gave updates at the Santo Domingo meeting on new materials that have been developed for the Public Education and Awareness Program, and WIWD-WG Is-

land Representatives reported on progress in public education and monitoring of WIWDs in their countries. As evidenced from the Island Representative reports, several islands are doing a phenomenal job with our education program. Here, we provide a summary of the Working Group's activities and accomplishments in 1999 and our plans and objectives for 2000.

PUBLIC EDUCATION AND AWARENESS PROGRAM

"Ducks of the West Indies" Hunter Identification Card.—Using illustrations from *A guide to the birds of the West Indies* (Raffaele *et al.* 1998, Princeton Univ. Press), graphic artists at Ducks Unlimited's Oak Hammock Marsh assisted us in the design of this beautiful and durable plastic identification card for hunters and birders. The front side of the card shows 12 resident and migratory species on the water or in a standing posture; the back side shows them in flight. Sticky colored dots can be added to the card to indicate protected and threatened species on each island. Two thousand cards were published in August 1999 and an initial supply was provided to WIWD Working Group Island Representatives who are responsible for distributing them in their countries. The cards will be used in hunter education programs and distributed to hunting clubs and sporting good stores. Our hope is that use of the identification card by hunters will reduce accidental shooting of the WIWD and other protected duck species.

WIWD Conservation Button.—Both English and Spanish versions (1000 each) of a WIWD conservation button were produced in August 1999. Depicted on the button is an elegant WIWD with the following caption overlaid in yellow print: "Keep the Whistlers whistling!" (English version) and "Yo (heart symbol) Yaguaza!" (Spanish version). These buttons are being distributed as part of our Public Education and Awareness Program and are especially popular with schoolchildren.

Wondrous Wetlands of the West Indies.—A second draft of our wetlands education resource book for teachers and educators has been completed by Martin Keeley in the Cayman Islands and the workbook has undergone initial editing and review by a professional editor. A team of WG members and teachers is now conducting a thorough review of the workbook's contents and making final revisions. When completed, the workbook will be sent to the Royal Society for the Protection of Birds (RSPB) in the UK for assistance with design, layout, and final editing. USFWS Partners-in-Flight Program will fund the translation into Spanish and contribute towards publication costs of the Spanish version of the workbook.

The goals of the workbook are to teach schoolchildren of all ages about Caribbean wetland ecology and the many values and functions of local wetlands, and to instill in them a strong wetland conservation ethic. The workbook emphasizes learning about Caribbean wetlands both in the classroom and in the field and is divided into six chapters with the following titles: (1) Wet and Muddy: What and Where are the Wetlands?, (2) Wild and Wet: What Lives in Wetlands?, (3) Wetlands, not Wastelands: Why are Wetlands Important?, (4) Going, Going, Gone: What is Happening to Wetlands?, (5) Save the Wetlands—Save the World: What You Can Do, (6) Seeing for Yourself: How to Organize a Wetland Field Trip. Each chapter contains background information and many classroom activities designed to reinforce learning of the concepts presented in the chapter.

Other materials available.—Other educational tools we have available include a slide show for the general public, hunters, and secondary-age students; a puppet show (“Wetlands are Wild”) and WIWD coloring book for primary-age students; and color posters promoting the conservation of the WIWD (for more information on these materials see *El Pitirre* 11[1]:19-22 and *El Pitirre* 11[3]:126-131). We conduct workshops for natural resource agencies and schoolteachers on the use of our materials. Please contact Lisa Sorenson or Patricia Bradley for information on holding a workshop in your country or to receive copies of our materials.

WIWD and Wetlands Education Workshop.—The WIWD Working Group sponsored a WIWD and Wetlands Education Workshop at ZooDom, Parque Zoológico Nacional in Santo Domingo on 29 July 1999. The Workshop was attended by 45 people, including local educators and representatives from several islands. The workshop was successful in raising local awareness about the WIWD and the importance

of wetlands conservation. Kate Wallace arranged for the writing and performance (at the Workshop) by professional puppeteers of an artistic and dramatic “Dominican” version of our “Wetlands are Wild” Puppet Show. Martin Keeley led the participants in several hands-on demonstrations and activities (from our workbook), all designed to teach students about some aspect of wetlands. All attendees participated with great enthusiasm and interest. One highlight occurred towards the end of the day when the group split up and had the opportunity to show off their talents and creativity both in art and music. Within about 45 minutes time, a beautiful wetland mural was created and several songs about the WIWD and wetlands conservation were composed and performed. We include the lyrics to one of the songs here; they are not copyrighted so feel free to use them in your own education programs!

WETLAND RAP SONG

(“spoken” with a strong rap beat)

Composed by Ijahnya Christian, Suzanne Davies,
Ethlyn Gibbs-Williams, Jim Stevenson, and Lisa
Sorenson

- Verse 1: *They call me a swamp*
'Cause I'm wet and I'm damp
But I'm food, clothes and shelter
And I make life better
For without me and my mangrove tree
I really don't know where this island would be
- Chorus: *I protect the land*
And I protect the sea
I'm a wetland
I'm a wetland
- Verse 2: *Black, white, buttonwood,*
Walking roots red
Don't build that hotel or we'll all be dead
I'm a very special tree 'cause I grow in the sea
The West Indian Whistling-Duck depends on
me (chorus)
- Verse 3: *He's the home of the birds*
Let me tell you
If you don't know their names
Then here are a few
Scar-let I-bis, Flamingo too
Frigate "Man-o'-War:
(I'm not talkin' 'bout the zoo)
There's the Pelican
And the Whistling-Duck
And the Tropic Bird
You can see them all with luck! (chorus)
- Verse 4: *Wetlands are good*
We're the home of the duck
We protect you from storms when you run out
of luck

*Groupers, crabs, snail, mosquitoes, and the heron,
If you take away our homes, your lives will be barren* (chorus)

Verse 5: *The osprey eat the fish
The fish eat the crab
The crab eat the snail
And the snail eat the mud
It's a food chain
It's a food chain* (chorus)

WIWD AND WETLANDS EDUCATION ISLAND REPORTS

Bahamas.—Thanks to the hard work of Lynn Gape, Monique Clark, and other staff of the Bahamas National Trust (BNT), over 5000 schoolchildren and residents throughout the Bahamas (New Providence, Grand Bahama, Inagua, Eleuthera and Abaco) have seen our WIWD slide show and *Wetlands are Wild* Puppet Show in presentations at schools, public meetings, and teacher workshops. The WIWD Project has also been well-publicized in local newspapers, with articles featuring student essays about wetlands, written after they had seen the puppet show or slide show. Lynn and her staff have also been responsible for putting together and shipping the puppet show kits. To date, 25 kits have been distributed to 11 countries. The BNT staff and several local schoolteachers have worked closely with us on the writing of the wetlands workbook and kindly hosted a workshop for the principal authors in April 1999 at the Trust headquarters in Nassau.

Cayman Islands.—Wetlands educator, Martin Keeley, has been coordinating the Public Education and Awareness Program in the Cayman Islands with great energy and success. He has traveled to all three islands to give presentations on WIWD and wetlands conservation to schools, youth groups, church groups, and service organizations. He has also held teacher workshops on the use of our materials. Virtually all citizens on Cayman Brac have been exposed to the WIWD and wetland programs and Martin has received approval from the Ministry of Education Science Coordinator to integrate our WIWD and wetlands education material into the school curriculum. Together with Martin, the youth of the Cayman Islands Junior National Trust built a WIWD puppet theater and have given several performances of the puppet show. Other activities included an article on the WIWD project in the popular press and a TV show featuring a restored wetland on a local farm, home to several hundred WIWDs and our first Watchable Wildlife Pond.

The Watchable Wildlife Pond at Malportas Pond

has been completed; contractors donated the building materials and a viewing area was constructed and landscaped by Rotary International, which also provided labor. The West Pond is frequently viewed by tourists, local people, and school and tour groups. An interpretive sign will also be added. Up to 600 ducks are often present along with up to 400 Blue-winged Teal and 15 species of waterbirds (ducks, rails, herons and waders).

Patricia Bradley presented a poster about our WIWD and Wetlands Conservation Project at the 2000 American Ornithologists' Union meeting in Nova Scotia. She reports that it generated a lot of interest and positive feedback. She also gave a presentation on our project at the UK Overseas Territory meeting in Gibraltar (funded by RSPB).

Turks and Caicos Islands.—Ethlyn Gibbs-Williams of the National Trust for Turks and Caicos Islands has initiated an excellent education program in the Turks and Caicos Islands (TCI). She reported that WIWD materials had been incorporated into a nation-wide environmental education and awareness campaign called "Our land, our sea, our people." Ethlyn distributed 75 WIWD posters to businesses, schools, and public places on the main island. She made WIWD slide presentations to four schools and one community group including 392 adults and children. Ethlyn noted that the campaign has undoubtedly made an impact on the population. The Trust has received numerous requests from businesses, offices, individuals, and schools for more WIWD posters and coloring books. Headteachers and staff have requested school visits featuring the WIWD slide show and other TCI birds. A press release, issued to request information on WIWD sightings, generated many responses. Finally, the Education Department has incorporated questions about the WIWD in the General Paper Country 1999 Primary Schools Grade 6 Achievement Test. The Trust is gearing up for more public awareness activities in cooperation with the Coastal Resources Management Project National Parks Office and is planning to hire additional staff to assist with the campaign.

Cuba.—A network of collaborators and institutions in six provinces has been doing an amazing job of implementing our education program (see Mugica *et al.* 1999, "Implementation of an environmental plan for the WIWD in Cuban schools," *El Pitirre* 12 [3]:113). Participating institutions include the Museo de Historia Natural "Felipe Poey", Universidad de La Habana (Leader), Zoologico de La Habana, Facultad de Biología (Universidad de La Habana), Museo Nacional de Historia de Ciencia de Cuba (La

Habana), Institute of Tropical Geography (La Habana), Empresa Nacional para la Conservación de la Fauna y la Flora (Granma and Villia Clara), Museo de Historia Natural “Carlos de la Torre” (Holguin), Pedagogical Institute “Carlos de la Torre” (Santiago de Cuba), and CITMA (Ciénaga de Zapata, Matanzas). Lourdes Mugica reported that the program started with two training workshops on the use of the materials, one at the Havana Zoo with biologists (24 persons) from the Protected Areas all over the country and educators (3) from the Zoologico de La Habana; and the other at the Universidad de La Habana for professionals and undergraduate students working on the campaign in La Habana. Once trained, these collaborators gave talks and slide shows to Cuban schoolchildren, the general public, educators, museums, zoos, hunting groups, and natural resource personnel throughout the country. In total, the package has been used with 159 audiences and 4485 people. A highlight of the program was the dedication of the month of March at the Zoo to the WIWD and aquatic birds. Activities included slide shows; talks; and contests of painting, poetry, songs, ceramics, and stories related to the WIWD; and culminated with a one-day festival with many different activities for the children and an exhibition of the best works. Lourdes found that environmental awareness was indeed raised through the program; statistical analysis of a questionnaire given to the students both before and after the presentation showed that children knew substantially more about the WIWD and importance of wetlands following their exposure to the materials.

Nidia García Sarmiento of the Pedagogical University led the program in Santiago de Cuba province. The University worked in 65 primary and secondary schools in two municipalities. The program started with a course on environmental education given to 25 and 28 educators in each municipality. These educators then organized the activities in their local schools. Activities included: slide shows, workshops (3) on the biodiversity and environmental problems of each locality and the relations between the community and school, a festival for the protection of the WIWD in each school, and a final festival at the municipality with the best results on display from each school. About 2000 children were involved in the program and the results were presented at an international symposium (Pedagogia '99). The slide show was also presented to several community groups and conferences.

Orestes Martínez is working in the Ciénaga de Zapata area (Matanzas) which is surrounded by 12 communities. Formerly, no environmental education programs existed in this area. Orestes presented the

slide show to each community and found that it was very well received. The International Crane Foundation funds an annual crane festival in the area and has produced a publication. He would like to plan a similar festival for WIWDs.

Jamaica.—Suzanne Davis reported that although she and Leo Douglas (educators with Birdlife Jamaica) had been studying abroad during much of the past year, they did manage to promote WIWD and wetlands conservation through several activities. These included publication of an article on the WIWD in collaboration with the Natural History Society of Jamaica in a children's newspaper, *Children's Own*, a presentation to 33 people at a summer youth camp, and presentation of five posters to the Natural History Society of Jamaica. Slide packages were given to the Jamaica Conservation and Development Trust and St. Thomas Environmental Protection Agency. Ann Sutton has been a major contributor to our wetlands workbook project; her writing skills and creativity have been a tremendous asset as we complete this project.

Dominican Republic.—Because of the demands of planning for the SCO conference and WIWD and Wetlands Workshop at the Zoo, Kate Wallace was not able carry out many WIWD education activities. She did arrange for the development of the “Dominican” puppet show that was performed at the Workshop; the text is available in Spanish. She also reports that Domingo Siri found a pond that could be developed as a Watchable Wildlife Pond in Santo Domingo.

SURVEY AND MONITORING OF WIWDs ISLAND REPORTS

Jamaica.—Ann Sutton has continued her research into the distribution and status of WIWDs in the Black River Morass, the most important and most accessible habitats for WIWDs in Jamaica. She has completed a final report of her findings for the WIWD-WG. She estimates a population of around 100 individuals in the Upper Morass and 15-20 individuals in the Lower Morass. The habitat data suggest that ducks occur where there is a combination of open water, trees, and herbaceous marsh (preferably including reed beds). Threats to the Black River habitat include conversion of wetlands for agriculture, pest control operations at fish farms, and development of housing and resorts in the Parottee area. Another potential threat is the opening of a hunting season for migratory ducks, for which Jamaican hunters continue to lobby. Working with the Game Bird Research Committee, Ann (together with Dr.

Peter Vogel) has attempted to ensure that the decision about whether to hunt was made based on the best possible information and she advocated more research on status of the resource and habitat use before a decision was made. Not all actual or potential WIWD habitats have been zoned and the extent to which existing no-hunting areas cover WIWD habitats in the Black River is not known. Ann states that shooting in any part of the Black River area would likely be detrimental to WIWDs.

Ann has also focussed on mapping and zoning of habitat in the Upper Morass, using aerial photographs obtained from the Natural Resources Conservation Authority (NRCA). These have been incorporated into a Draft Management Plan for the Black River Managed Resource Protected Area, St. Elizabeth, Jamaica, a report prepared by A. Massa and A. Haynes-Sutton (1999) for the NRCA. Included in this plan were: a species action sheet for WIWDs, recommendations for management and rehabilitation of key habitats, including swamp forests, freshwater wetlands and mangroves, recommendations for monitoring and research, and management recommendations for specific areas of importance for WIWDs. The recent nomination and acceptance of Black River Lower Morass as a Ramsar site (effective 7 February 1998) highlights the need for active conservation of the threatened and endangered waterfowl of the area.

Turks and Caicos Islands.—Ethlyn Gibbs-Williams (TCI National Trust) and Geoff Hilton (RSPB) reported on a major survey of WIWDs funded by RSPB and the Wildfowl and Wetlands Trust as part of their support of the TCI National Trust and WIWD-WG. A three-man team (including Geoff) from the UK conducted the survey over a 6 week period (23 February – 5 April 1999) with the objective of determining whether WIWDs are resident there. Literature research had revealed only one published breeding record for the WIWD in the TCI. The 1992 Red Data Book-Threatened Birds of the Americas lists five other records of flocks of WIWD on the TCI. Later records of sightings include Middle Caicos Bird List compiled 2-8 December 1997 by Marsha Walsh-McGehee (Island Conservation Effort) and UK Overseas Territories Conservation Forum scientists, 27 and 30 October 1998 (several broods sighted by P. Bradley).

A secondary objective was to assess survey methods. The team used a variety of methods, including casual visits, interviews with local residents, playback, watching flight patterns, aerial surveys, transects through potential roosting sites, and standing

on potential flight lines at dusk. A press release to the media gave information about the threatened duck and appealed for support and cooperation from the public. Flyers and remaining posters of the WIWD were placed in public places.

The team visited coastal wetlands and inland ponds and lakes on Providenciales, Middle, North, and West Caicos. A systematic and repeatable survey method was adopted. Each survey site was visited once to determine where access was best for three people to oversee as much of the site as possible. The site was then visited for at least two hours either at dawn or dusk. A tape recording of WIWD calls was played to encourage any ducks present to respond. At all sites a detailed count was made of wetland birds seen and any other birds of conservation interest. Transects through potential roosting sites were also attempted but this was slow because of the dense scrub and mangrove vegetation and it was impossible to cover enough ground with this method. In the absence of suggestions about possible flight lines at dusk, it was difficult to determine where to stand to observe ducks. Because of an unusually intense drought during the survey period (rains are usually February–April), many of the ponds were dry. Other ponds and lagoons fed by underground spring were inaccessible because local guides were unable to recall accurate directions.

Over 43 sites were visited. In addition, a two-hour aerial survey by light aircraft of Middle and East Caicos to ascertain whether ducks could be identified from air was undertaken before ground visits. The aerial survey showed an abundance of apparently suitable habitat, but no birds were seen. Geoff noted that aerial surveys to find and count WIWDs were useful only if they were conducted in daylight and the birds were on open water (not a likely situation because WIWDs are nocturnal and typically roost in dense vegetation during daylight hours). A limited amount of time was spent in boats surveying mangrove swamps on North and Middle Caicos. Only one site, Jacksonville Pond on East Caicos, revealed any WIWDs. Four individuals were counted on two lagoons. Observations were made at dawn and dusk, and the team found that the birds did respond to the taped WIWD calls.

The team concluded that more WIWDs may use TCI's wetlands, but had perhaps moved elsewhere because of the drought. They recommended the surveys be repeated when conditions were more favorable. L. Sorenson commented that White-cheeked Pintails move around depending on wetland conditions and can be difficult to see during periods of

drought. When the rains come, a sudden increase in the production of aquatic invertebrates occurs and the birds take advantage of this to breed. WIWDs might behave in a similar way.

A subsequent observation well after the survey confirmed the importance of good wetland conditions to WIWD breeding and habitat use. Ethlyn reported that on 22 July 1999 (following heavy rains), a local volunteer observed and took video footage of a group of two adults and 12-14 duckling WIWDs on Village pond on Middle Caicos.

A wide variety of other wetland birds was recorded during the surveys, including 11 species of heron, 7 duck species, 4 rail species, 23 shorebird species, Sandhill Crane, Greater Flamingo, Belted Kingfisher, Brown Pelican, White-cheeked Pintail, Blue-winged Teal, Pied-billed and Least Grebes, American Coot, Double-crested Cormorant, Neotropic Cormorant, Mangrove Cuckoo, and Piping Plovers.

Following the survey, a workshop was held to present findings and establish groundwork for future surveys and monitoring of wetland birds. Workshop participants included personnel from the government Department of Environment and Coastal Resources, National Trust staff and volunteers, and interested residents. Activities included two field courses demonstrating field techniques at wetlands on Providenciales.

Cuba.—Cuban biologists have put together a team of five individuals to collaborate on field work of WIWDs and they are making excellent progress in getting estimates of population size, distribution, habitat characteristics, feeding, and local movements (see Mugica *et al.* 1999, "Preliminary results of a survey of the distribution of the WIWD in Cuba," *El Pitirre* 12[2]:58-59; Peña *et al.* 2000, "Registro de localidades para la Yaguaza Antillana [*Dendrocygna arborea*] en la region centro-oriental de Cuba," *El Pitirre* 13[2]:49-51).

Lourdes and colleagues have been working in a 30 km² wetland in Viramas Swamp. The area is remote and accessible only by boat. They have no engine, so surveys are slow and incomplete. An aerial survey is essential to identify the best prospective habitats. Flocks of up to 40 birds were seen. Only one abandoned nest was found.

Northwest: Carlos Peña has made two visits to a major swamp, where he estimated more than 5000 WIWDs may exist.

Carlos Peña and colleagues have carried out surveys in the Cayo Confiti area in Camagüey and

found about 5000 individuals in the study area, which included three dams. The Rola Dam was 95% covered with floating and emergent vegetation of 21 species, dominated by bulrush (*Typha dominicensis*). He found WIWDs at 60 localities, 27% of which were in rice plantations and 20% in mangroves. These localities corresponded with the historic distribution of the species. Only one nest was found. The main cause of mortality is hunting.

Peña concluded that the species is not rare in Cuba, but locally common in appropriate habitat. The relative abundance of WIWDs in Cuba compared to other islands is probably the result of more abundant habitat, as Cuba is 75% flat, with many large wetlands. The population in Cuba appears to have greatly increased. These results suggest the need to revise the status of the species, at least in Cuba.

Bahamas.—Montserrat Carbonell (Ducks Unlimited, Inc.) organized a monitoring workshop at the BNT headquarters in April 2000 for ornithologists and natural resource personnel from the Bahamas, Cuba, Puerto Rico, Jamaica, and the Dominican Republic. The objectives of the workshop were to help the Bahamas develop a survey program for migratory ducks and to discuss methodologies and the possibility of working together on surveys at the regional level. A similar workshop is planned for the Dominican Republic in October 2000.

Cayman Islands.—Patricia Bradley reported that there had been no surveys over the last 12 months. Breeding habitats have not been reduced. A Ramsar site has been declared on Little Cayman Island. WIWDs are breeding on Cayman Brac. The total population of the three islands is estimated at from 800 to 1200 individuals and it appears to be stable.

Dominican Republic.—Kate Wallace informed the meeting that after Hurricane George and with many downed trees, the stream in the Botanical Garden in Santo Domingo contained many more pools, resulting in excellent habitat that attracted WIWDs. Broods of about 10 new ducklings were found in every month from January to July. The juveniles seem to stay in the area (especially in the grassy areas and wetlands) for at least two months before dispersing. WIWDs were sighted in the Cabo Rojo wetland in July and September 1998.

Antigua and Barbuda.—Kevel Lindsay explained that a proposed survey, an addition to an on-going wetlands survey and monitoring project by the Environmental Awareness Group (EAG), was funded by United Nations Development Program (UNDP), Barbados. It included a two-week survey of the two is-

lands. Ann Sutton is presently (August 2000) in Barbuda conducting this survey in cooperation with EAG in Antigua. As far as Kevel knew, no loss of habitat has occurred, but the repercussions of the now cancelled Asian Development Project were still being felt. The expatriate owners of an island (on which 80 resident WIWDs roosted, and were being fed) were ousted. The ducks had scattered and some were still seen on other islands in small groups. They probably breed on offshore islands. Several nests were seen in June 1999, following unseasonable rains. The population in Antigua is probably about 500. Since the 1970s, intermittent reports have been made of large flocks in Barbuda, but the present status is unknown, hence the proposed survey.

Puerto Rico.—Francisco Vilella reports that there is no formal monitoring of WIWD in Puerto Rico. The Department of Natural and Environmental Resources (DNER), however, conducts waterfowl surveys of the main island and its satellites (Vieques and Culebra), a Federal Aid funded project headed by David Ramos of DNER. The survey is aimed at wintering duck populations, but David's crew counts all ducks seen.

Francisco Vilella's project (funded by DNER) to rehabilitate Humacao has great potential, because this is possibly the most important area for WIWDs in Puerto Rico (population estimate of 100). Francisco has two graduate students working in restoration aspects and survival and habitat use of White-cheeked Pintail and WIWD. The students are capturing and radio-marking hens and broods of both species.

British Virgin Islands.—Nancy Woodfield (BVI National Parks Trust) said that no WIWDs have been recorded on BVI, but suitable habitat occurs on Aneгада. She expressed an interest in doing surveys. A. Sutton promised to send a tape and some forms.

Anguilla.—Ijanya Christian (Anguilla National Trust) reported that Dave Prichard did not record any WIWDs in his 1990 survey. Anguilla has no wetlands or salt ponds.

SUMMARY.—The main population of WIWDs appears to be in Cuba, where the population may be more than 10,000 birds. Elsewhere populations are small and fragmented. An urgent need exists for wetland protection throughout the region.

DIRECTIONS FOR THE FUTURE

Our primary objective in the coming months is to complete and publish our wetlands education workbook, *Wondrous Wetlands of the West Indies*. The WG is also planning to publish a *Fauna and Flora of the Wetlands* field guide through a USFWS small field guide project. The guide will serve as a reference for the workbook but will also stand alone. Once published, we will distribute these books to our target islands and hold Teacher Training Workshops in each island to demonstrate use of the workbook and our other materials. Our long-range goal is to see that a Wetlands Education Unit (comprised of the materials we have developed) becomes a permanent part of every school's science curriculum in each of our target islands. Island Representatives of the WIWD-WG will work with Education Department personnel in their countries to reach this goal.

Our second objective for 2000 is to continue assisting local biologists with surveys and monitoring of WIWD populations and in the establishment of a long-term monitoring program in two countries. Knowledge of WIWD population levels and habitat use are crucial in making management plans, setting priorities for habitat conservation, and ensuring that areas providing the WIWD with quality habitat year-round are protected.