



Photo by Robert E. Hyman ©

The Explorers Club Flag # 51 Official Report

HONDURAN EMERALD CONSERVATION EXPEDITION

Protecting the Honduran Emerald Hummingbird and its Habitat

February 14 - 27, 2007

PROLOGUE:

Discovered in 1867 by Lawrence, the brilliantly colored Honduran Emerald Hummingbird, or *Amazilia luciae*, is native to Honduras and is the most endangered bird species in Central America. In 1988 it was classified as threatened and in 1994 it was reclassified by the International Union for Conservation of Nature and Natural Resources (IUCN) as critically endangered and placed on their “Red List of Threatened Species”. Citation: Birdlife Intl. www.iucnredlist.org. The greatest threat to the Honduran Emerald is the continued loss of its unique habitat and ecosystem due to increased clearing for livestock grazing, plantation agriculture, mining and the possible paving of the road through the Rio Aguan valley.

The Honduran Emerald Hummingbird, which is the country’s only endemic bird species, was previously known to exist in two locations of arid thorn-forest and scrub of the interior valleys of northern Honduras. Prior to this expedition the bird could only be found near Olanchito in the upper Rio Aguan valley and north-east of Gualaco in the Agalta valley.

This unique and rare Central American tropical dry forest that consisted of 30,000 hectares in 1938 has been reduced to just 8,495 hectares today www.tierramerica.net. Only half of that is considered well preserved enough to sustain significant populations of the bird. The Honduran Emerald’s population is estimated to number between 200 and 1,000 but further research on habitat degradation, population numbers and range is needed. The last study done on the Honduran Emerald and its habitat was done in the year 2000 by Sherry Thorn, Paul House and Dora Elisa Perez.

I was introduced to this region and the plight of the bird in March of 2006 by the U.S. based Ecologic Development Fund and the Honduran Pico Bonito Foundation, both of whom were working on community based projects throughout Honduras. Clearly, there was a need to form an expedition and conduct scientific field research on this subject. I spent the following eleven months researching this topic, finding the most qualified experts to participate and organizing the expedition.

GOALS / OBJECTIVE:

The objective of our expedition was to search for new and unrecorded habitat of the Honduran Emerald Hummingbird with the hope of finding the bird in areas where it was previously unknown to exist and to better understand the extent of the birds remaining habitat in Honduras. Our methods to accomplish this are as follows.

- Fly small aircraft low to the ground to quickly identify areas of possible habitat
- Take global positioning coordinates of these locations observed from the air
- Transfer the GPS coordinates to traditional maps with a scale of 1:50,000
- Return in 4x4 vehicles and walk to ground truth our observations
- Record GPS coordinates for any new areas of dry forest habitat
- Record any sightings of the Honduran Emerald and photograph the bird
- Use the data collected to update the ecosystem map of Honduras
- Identify any parcels of land that might be acquired for conservation efforts
- Through further collective research, publication of reports and lectures bring attention to the plight of the Honduran Emerald and its critically important and threatened habitat.

LOCATION: Republic of Honduras, Central America



PARTICIPANTS:



David L. Anderson



Deborah M. Atwood



Miguel Caceres



Josh Grossman



H. Ross Hawkins Ph.D.



Dr. Paul House Ph.D.



Robert E. Hyman



Ricardo "Fito" Steiner



Francisco Urbina

David L. Anderson Ph.D. candidate - Ornithologist Specializing in Birds of Honduras

www.museum.lsu.edu/Anderson & www.birdinghonduras.com

Deborah M. Atwood B.S. - Ecologist & Researcher

Miguel Caceres – Honduran Biologist

Josh Grossman M.A.L.A. - Saint John's College, Researcher & Documentarian

H. Ross Hawkins Ph.D. – Executive Director and Founder of The Hummingbird Society

www.hummingbirdsociety.org

Dr. Paul House Ph.D – Botanist and Leading Authority on Plants of Honduras

Robert E. Hyman - Expedition Leader & Photographer

Fellow National, The Explorers Club www.explorers.org www.explorersclubdc.org

Ricardo "Fito" Steiner – Expedition Co-leader and Honduran Coordinator

Chairman, Board of Directors Pico Bonito Foundation www.picobonito.org

Francisco Urbina – Expert on the Ecology and Bio-Diversity of the Olancho area

The following includes: the official ornithology report by David L. Anderson; journal report by Robert E. Hyman; hummingbird references, data sources, acknowledgements, credits and other photos.

HONDURAN EMERALD CONSERVATION EXPEDITION

ORNITHOLOGY REPORT

DAVID L. ANDERSON – MUSEUM OF NATURAL SCIENCE, LOUISIANA STATE UNIVERSITY

INTRODUCTION

The Honduran Emerald (Trochilidae: *Amazilia luciae*) is a hummingbird whose range is restricted to the republic of Honduras, Central America. Prior to the 1980's very little was known about the species' distribution or ecology, and it was thought to be widespread in moist lowland forests in eastern Honduras (Monroe 1968). With increasing recent interest in both conservation and ornithology in Honduras it was discovered that the species occurred in isolated fragments of very dry tropical forest, and that these fragments are small and rapidly being destroyed for conversion to cattle pasture and agriculture (Howell and Webb 1989, Bonta and Anderson 2002). Prior to the current expedition the species was known from only two valleys in two Honduran departments, Valle de Agalta in Olancho and Valle de Aguán in Yoro, and is considered the most endangered bird in Central America and the most endangered hummingbird in the world. Because of its status as critically endangered, its unique habitat, and because it is the only bird endemic solely to Honduras, it has become a flagship species for conservation in Honduras.

The current expedition was designed as an effort to aid in the conservation of this emblematic species. The principle objective of the expedition was to try and locate additional habitat patches and emerald populations outside its known range. A secondary objective was to test the efficacy of over flights for finding isolated fragments of dry forest. The second objective was important because past efforts to find emerald habitat had been conducted solely from the ground and finding forest remnants far from roads and on private land with restricted access could be more feasible from the air. Flying also has the advantage of covering a greater area in less time.

METHODS AND RESULTS

Specimen data give the only historic perspective on the former distribution of the Honduran Emerald. Formerly the species was known from the departments of Olancho in eastern Honduras, Yoro in northeast Honduras, and Cortés and Santa Barbara departments in the west, based on specimen labels from as early as 1933 (Monroe 1968). Historic locality data was used to plan over flights in these four departments on 15 and 16 February 2007. On each day a team of five observers (plus pilot David Ruiz) flew three hours in a Cessna 206 at low elevation searching for patches of dry forest. We took waypoints at more than 50 forest remnants using a Magellan handheld GPS unit, cross-referenced with field notes. During the ensuing week the waypoints served to orient ground searching to confirm the presence of dry forest patches, their suitability for the Honduran Emerald based on the presence of endemic food plants and plant species characteristic of very dry tropical forest, and to search for new populations of the Honduran Emerald.

Ground truthing began in Cortés and Santa Barbara departments in the vicinity of the towns of Aguas Sucias and Naco on 18 February. At two sites that we visited we found remnants of very dry forest that looked suitable for the Honduran Emerald. Both sites were heavily intervened by humans. The Aguas Sucias site measured approximately 100 ha. and was found on rocky hilltops heavily grazed by cattle. Grazing pressure and human intervention were represented by a thick growth of non-native ground cover that was often impenetrable. The Naco forest was a 50-year old secondary forest re-grown in former cattle pasture. Both sites contained plant species characteristic of forest remnants where the emerald is currently known, and both appeared structurally similar to forests inhabited by the emerald.

At these sites we observed 40 species of birds that are widespread and characteristic of arid habitats throughout Honduras, but no emeralds and none of the species that are restricted to and indicative of very dry forests, e.g., White-bellied Wren *Uropsila leucogastra*, White-colored Gnatcatcher *Polioptila albiloris*, Green-backed Sparrow *Arremonops choloronotus*.

From 19 to 23 February the team investigated forest remnants in the departments of Santa Barbara, Olancho, and Yoro, respectively. Very good patches of forest were found in Santa Barbara near the town of San José Colinas that looked ideal for the Honduran Emerald, but again no emeralds were found. In the vicinity of San Esteban in the Valle de Agalta we found several patches of forest that had not previously been visited by conservationists and in which we found Honduran Emeralds. Finding emeralds in these sites was not altogether surprising due to proximity to known populations, but it is very promising to find new populations of emeralds. The team found forest patches and Honduran Emeralds in the Valle de Telica in Olancho. This valley had not been previously explored, and the discovery of a previously unknown population of the species is very important.

CONSERVATION SIGNIFICANCE

The forest remnants we found in northern Santa Barbara and southern Cortés looked promising for emeralds, and not finding the species in these forests is perplexing. Several hypotheses can explain the absence of the species in seemingly appropriate habitat. First, our time was limited and it is possible that we failed to find the species even though it still occurs there. A concentrated mist-netting effort would reasonably confirm the presence/absence of the species. Second, it is possible that the secondary forest remnants may lack key resources needed to maintain the species year-round, and potentially the species has not been able to persist.

Third, the forest remnants in this area may be too few and too heavily impacted to retain the necessary resources to sustain the species over the long term. Elsewhere in Honduras it is suspected that the species undergoes seasonal movements to track key resources, a common phenomenon in tropical birds and especially hummingbirds. If a mosaic of available remnants does not contain all the resources needed for long-term survival, the species will eventually go extinct. This may be the case in this part of the species range.

The discovery of previously unknown emerald populations in Olancho is the most significant finding of the expedition. It confirms the suspicion that more populations remain to be discovered elsewhere, a fact that would greatly enhance the possibility of conserving the species. The finding also validates the methods and justification for the present expedition, including the use of small aircraft for surveying potential forest remnants.

The current expedition should be considered a first step in the conservation of the species. More over flights are needed for a thorough survey of forest remnants, and considerable effort on the ground will be required to verify the condition of forest remnants and presence of the emerald in them. This expedition offers firm hope of finding such remnants and populations in areas where the species is not known or thought to have gone extinct.

LITERATURE CITED

- Bonta, M., and D. L. Anderson. 2002. *Birding Honduras: A Checklist and Guide*. EcoArte, Tegucigapla. 185pp.
- Howell, S. N. G., and S. Webb. 1989. Notes on the Honduran Emerald. *Wilson Bulletin* 101:642-643.
- Monroe, B. L., Jr. 1968. *A distributional survey of the birds of Honduras*. Ornithological Monograph 7.

HYMAN EXPEDITION JOURNAL:

From the north coast airport of La Ceiba, we conducted two days of flights over Honduras recording GPS coordinates of possible Honduran Emerald habitat and transferred this data to 1:50,000 scale maps. This was a quick and effective way to explore large areas of Honduras and our team was the first to do this type of reconnaissance in two of the areas we explored.



Consulting with our pilot David



Members of our reconnaissance team



Transferring GPS points to maps

Using two 4x4 pick up trucks supplied by The Pico Bonito Foundation and REHDES the eight of us drove to the Santa Barbara area arriving in the town of Trinidad and checked into the Estancia El Pedregal where we stayed for two nights. This area north of Santa Barbara near Naco in the state of Cortes, has suitable remnants of dry forest habitat for the Honduran Emerald even though the bird has not been seen here in seventy years.

We spent the day exploring our GPS coordinates observed from the air and spoke to residents of nearby villages for information. While we saw many universal indicator species of plants that could sustain the Honduran Emerald, we did not actually observe the bird. Of the 34 species of flora observed in this area, Paul House did identify an unusual tropical evergreen holly and possibly a new Honduran species of flowering shrub. Another area that looked promising from the perspective of having semi-arid habitat that the bird likes was a new discovery of habitat that was at least 100 hectares in size. We received permission to access this plateau area through a porcelain mining concession and spent significant time in separate groups searching this area but no emeralds were observed.



Porcelain mine impacting habitat



Team members at new habitat site



Monkey Comb plants

Our second day exploring the river valley north of Santa Barbara yielded plenty of cactus, monkey comb plants and remnants of suitable habitat. We drove to the villages of Lomas Largas and La Isla asking questions of locals we encountered. While we did observe many species of birds we saw no emeralds. Expedition members agreed that more time and as much as a week should be spent in this area on a future expedition.

Our expedition team proceeded through the Honduran capitol of Tegucigalpa in route to the Agalta Valley and specifically the town of San Esteban in the state of Olancho. While this segment was a very long drive over mostly paved roads, much of what we traveled on were uneven dirt roads limiting our speeds to 20-40 mph. In fact our team would drive more than 1,100 total miles throughout Honduras over the duration of the expedition which resulted in four flat tires which destroyed two tires and two inner-tubes.

From the “cowboy town” of San Esteban, where residents still carry hand guns on their hips and horses are the main form of transportation, we spent two days looking for suitable habitat in the hopes of finding the emerald. As we drove the back roads of the Agalta valley we came upon a patch of habitat with flowering cactus next to a homestead that had a cattle operation on former dry forest habitat. We received permission to park our vehicles in their driveway and explore further on foot. As we followed the cattle trails along the fenced property line, Ross Hawkins whispered that he had just seen the Honduran Emerald! We had now established another new habitat site and this time with the Honduran Emerald presence confirmed on film.



New habitat patch discovered



evidence of the Honduran Emerald



Rob Hyman & Deb Atwood

From San Esteban our next area to explore was the Rio Talica valley. We recorded all the habitat locations observed with our hand held GPS unit and even though there have been no known sightings of the emerald in this area, the presence of plants called “Babies Foot” & “Monkey Comb” near the water source of the Talica River gave us hope. We staked out the area on the side of the road and waited. Soon both Ricardo Steiner and hummingbird specialist H. Ross Hawkins had independently confirmed sightings of the emerald. This was incredible news because this was the first time that the Honduran Emerald had ever been sighted in the Telica River valley!



Photo at newly discovered habitat where the emerald was sighted for the first time

Our team headed north from San Esteban on a rough road that still had the obvious effects of Hurricane Mitch that devastated Honduras in October 1998. Most of the villages we passed had no electricity and we could see why Honduras is the third poorest country in the Western Hemisphere. Our destination was the town of Olanchito in the state of Yoro where we could resupply and then go to the research center in the Aguan Valley. Our team would be the first to stay at the new research facility still under construction. There was no running water or electricity but we had a roof over our heads and a base of operation for a few days. Next to the center is the only official governmentally protected dry forest habitat area of the Honduran Emerald in Honduras known as the “Poligino”. The Poligino was previously used as a Honduran Air Force base and former Contra airstrip but has not been used since the 1990’s, with the only visible remains of the airport being the control tower.

The Aguan valley is extremely hot and dry with the Honduran Emerald’s thorn forest habitat being cleared for cattle grazing and agriculture at an alarming rate. In addition, there are plans to pave the road that currently passes through the Aguan Valley further impacting the environment. This known area is where you can find the Honduran Emerald existing in its natural habitat.



The Poligino, Aguan Valley



Research Center



Team members at the center

We arrived at the research center, set up our equipment to sleep either on the floor or in hammocks for two nights and established a latrine for a toilet. We had containers of water, a propane tank and stove to cook on and coolers with food. The next day part of our team explored the south side of the Aguan River while I stayed at the research center area with our armed guard. I decided to venture into the dry forest surrounding the research center looking for habitat that the emerald might be feeding on and recorded one of the best pictures of the Honduran Emerald taken on the expedition. After a week of early morning starts and returning at dusk or later, our team was tiring. We decided that it was time to return to our starting point of La Ceiba to celebrate a safe and successful expedition.

After spending almost a year researching this species of bird, its habitat, identifying the foremost ornithologist and botanist of the region as well as a hummingbird specialist, I thought that we had a great team. Although you never know how people will interact and what obstacles you may encounter, this expedition was one of the best trips I have ever been on! No one was injured or became seriously ill. Participants were professional and eager to work or help and serious about their participation. Every one got along very well with no testy moments except when I barked out that I did not need any help changing our fourth flat tire. I would like to thank everyone who participated and hope to work with them again in the future. A special thanks to Ricardo “Fito” Steiner who worked tirelessly to prepare for and make this a successful expedition, we could not have done it without him.

MEDIA COVERAGE:

Our expedition was interviewed and filmed by Alfonzo Martinez who is a TV reporter for channel 39 in La Ceiba. Mr. Martinez is producing a documentary on the very dry forest habitat and its destruction. Gentleman Quarterly Magazine has a planned article on explorers that will include our expedition.

EXPENSES /BUDGET:

Some participants paid their own way to Honduras to join our expedition. Some of our Honduran participants donated their time and expertise without compensation. Our vehicles were loaned to us by two local non-profit organizations, Pico Bonito Foundation & REHDES. Expedition leader, Robert E. Hyman, paid for all transportation, fuel, repairs, food, lodging, supplies and materials as requested or needed. A detailed itemized list of expenses was recorded by Robert Hyman in his expedition journal and the total cost of the expedition did not exceed \$9,000 US dollars.

PHOTOGRAPHS:

All photos are by Robert E. Hyman unless otherwise noted and are copyrighted.

REFERENCES AND DATA SOURCES:

Collar and Andrew 1988 *Birds to Watch*
Howell and Webb 1992
Collar, Crosby and Stattersfield 1994 *Birds to Watch 2*
Baillie and Groombridge (compilers and editors) 1996
Anderson *et al.* 1998
M. Bonta *in litt.* 1999
Birdlife International 2000 *Threatened Birds of the World*
IUCN 2004 *Red List of Threatened Species.*
Preliminary Information: Honduran Emerald Hummingbird and its habitat
By Sherry Thorn, Paul House, Dora Elisa Perez *et al.* December 2000.
Peter Alden *Birds of Northern Honduras* (unpublished)
Map of Honduras – www.maps-only.com

ACKNOWLEDGEMENTS:

The Explorers Club – www.explorers.org
American Bird Conservancy – Dr. George Wallace, www.abcbirds.org
David L. Anderson – www.birdinghonduras.com www.museum.lsu.edu/anderson
Birdlife International – www.birdlife.org
International Union for Conservation of Nature (IUCN) – www.iucnredlist.org
Ecologic Development Fund – www.ecologic.org
Pico Bonito Foundation – (FUPNAPIB) - www.picobonito.org
Honduran Ecologist Network for Sustainable Development – www.rehdes.org
The Hummingbird Society – www.hummingbirdsociety.org
Tierramerica
Honduran Roads Agency (SOPTRAVI)
Thorn, House, Perez *et al.*
The Hummingbird Conservancy - www.thc-fc.org
The Lodge at Pico Bonito - www.picobonito.com

OTHER INTERESTING PHOTOS

Photos by Robert E. Hyman ©



Jumping Viper *Atropoides Nummifer*



Howler Monkey



Butterfly



Military Escort



Emerald in nest by Fito Steiner



Pilot using Google Earth Image



Dr. House with rare orchid



Basilisk Lizard
Basiliscus Vittatus



TV Interview



Turquios-browed Motmot