

TEXAS *Birds*
ANNUAL

VOLUME 7 (2011)



Ruby-Throated Hummingbirds: from Texas to the Neotropics—and Back!

By Bill Hilton Jr.

In the summer of 1982—after spending four very long, very cold, very dark winters in Minnesota researching behavioral ecology of Blue Jays—it was time to move the family back home to South Carolina and continue my career as a high school and college biology instructor. I also wanted to keep banding Blue Jays and other birds and near York South Carolina found an 11-acre tract complete with small pond and comfortable old farmhouse. Intent on studying all aspects of the local environment, wife Susan and I christened the place “Hilton Pond Center for Piedmont Natural History” (www.hiltonpond.org). Because the former farmstead seemed like a great spot to further my studies I immediately erected bird feeders, traps, and mist nets and started banding. Blue Jays did show up, as did a wide variety of resident species and Neotropical migrants—all of which received numbered aluminum bands that had potential to track them in migration and tell about longevity and site fidelity.



Beneath a shady Guanacaste tree in northwestern Costa Rica, master bander Bill Hilton Jr. (seated) and Ernesto Carman Jr. (checkered shirt) explain the intricacies of hummingbird morphology to citizen scientists Rita Heath (left) of Rock Hill SC and Gisele Norman of Calgary, Alberta while a local farmer looks on.

Photo courtesy Mary Kimberly



By the time adult male Ruby-throated Hummingbirds wander north to Belize in spring, they have attained pristine breeding plumage—including a full red gorget—and are preparing to head back to North America.

Photo © Bill Hilton Jr

I suspected I had about two dozen Ruby-throated Hummingbirds visiting my feeders and was astounded to band 75 of them in the next five days. (This gave rise to my “rule of thumb” that at a given site you probably have at least three times more hummingbirds than you think—a guideline that has been borne out by banding at several other locations.) By the end of migration that year I had banded what I thought was an amazing total of 114 RTHU, so in 1985 I hung the feeders in mid-March and started banding hummers during spring migration. That year I caught, banded, and released 144 more hummers, with 161 crossing our banding table in 1986. These kinds of numbers constituted a good sample size and I began to get really interested in all aspects of



Although site fidelity, longevity, and migratory behavior of hummingbirds are main emphases of Operation RubyThroat expeditions to the Neotropics, observers also are interested in learning whether native flowers such as this brilliant orange Combretum vine are pollinated by Ruby-throated Hummingbirds.

Photo © Bill Hilton Jr.

ruby-throats—so much so that I got “hooked on hummingbirds” and have spent nearly three decades monitoring their abundance and behavior at Hilton Pond and elsewhere.

To shorten the story considerably, from 1982 through 2010 (27 years) I banded 4,288 RTHU at my main study site in York, an average of 159 per annum—including some summers when I was away from Hilton Pond for all or part of the field season. (The average for 21 “complete” field seasons, March through October, is 178.) Of those 4,000-plus ruby-throats, about 12% have exhibited strong site fidelity by returning to Hilton Pond in at least one later year—with one female showing up in each of five consecutive years after banding.

My RTHU banding numbers at Hilton Pond are both significant and remarkable because nearly all ruby-throats from areas away from the Atlantic and Gulf Coasts depart the continental U.S.—apparently for Mexico and Central America. (A relatively small number of RTHU overwinter in Gulf and Atlantic Coast states.) I use the word “apparently” with good reason because of the 200,000 or so Ruby-throated Hummingbirds banded in North America in the



Ruby-throated Hummingbirds are the target species for Operation RubyThroat, but because mist nets are non-selective many other Neotropical migrants and resident tropical species are captured. Bander Bill Hilton Jr. reports (with tears in his eyes) that this Rufous-browed Peppershrike could bite harder than any bird species he had ever handled.

Photo © Bill Hilton Jr.



Ruby-throated Hummingbirds, drawn to a rich nectar source in commercial fields of Aloe Vera near Cañas Dulces, Costa Rica, are captured in mist nets erected and monitored by citizen scientists such as Rosalyn Fleisher of Rockville MD and Jim Lawhon of Polk City FL.

Photo © Bill Hilton Jr.



Four-foot-tall flower stalks of Aloe Vera—planted as a commercial row crop in Guanacaste Province, Costa Rica, proved to be a real magnet to Ruby-throated Hummingbirds. This female spent hours each day feeding on nectar from the aloe’s tubular yellow flowers.

Photo © Bill Hilton Jr.

past 100 years, not one has been encountered on its wintering grounds south of the U.S.-Mexican border. When inquisitive students or the public ask me “Where do our hummingbirds go?” I have to shrug my shoulders and respond with an apologetic “I don’t know.”

Despite the work of more than a hundred researchers now authorized to band Ruby-

throated Hummingbirds, there is much we do not know about this native species that occurs regularly in 38 eastern states and across southern Canada to Alberta. It is the most common hummer in east Texas, a region in which it breeds and/or passes through in large numbers during fall migration. Indeed, the annual Hummer/Bird Celebration at Rockport/Fulton annually attracts thousands of human visitors who come to see what must be hundreds of thousands of RTHU at backyard feeders in the area.

Some of the ruby-throats that come to Rockport have been observed departing the coast toward the southeast, but no one knows for sure their exact travel route to the Neotropics. They may be short-hopping and landing just a bit further south on the Texas or Mexican shoreline and flying overland the rest of the way, or they may be going across the Gulf of Mexico to put in on the Yucatan Peninsula before dispersing into Central America. One thing my work at Hilton Pond has shown for sure is that despite popular conjecture most East Coast hummingbirds probably do NOT go to Florida before attempting a trans-Gulf migration in autumn.

I now have four case histories that tell us much about migration of East Coast ruby-throats. Here’s the first: In 1991 veteran hummer banded Bob Sargent traveled to the Atlanta GA suburb of Loganville, where on 6 October at the home of Gina Pearson he



The first Operation RubyThroat Costa Rica hummingbird expedition in December 2004 encountered a major problem by unknowingly arriving BEFORE the bloom of Aloe Vera plants that were expected to concentrate nectar-hungry ruby-throats for banding. Fortunately, a small wintering population of RTHU could be trapped as they fed on the tiny red blossoms of a Jocote tree. Prior to release, this female was color marked with blue dye on her lower throat. Photo © Bill Hilton Jr.

trapped a young male Ruby-throated Hummingbird bearing a band inscribed “54512.” After contacting the federal Bird Banding Lab he learned I had banded this particular hummer just ten days earlier at Hilton Pond, a straight-line distance from Loganville of about 172 miles. It’s impossible to know exactly how long it took the bird to cover this distance but I suspect he didn’t do it all in one flight—choosing instead to fly perhaps 15-20 miles per day along the southwesterly overland route. This hummer was especially significant because he was the first Ruby-throated Hummingbird ever to be recaptured and released more than ten miles from the original banding site, and the first that showed migratory direction.

Since that auspicious event, three more of my banded RTHU from Hilton Pond have been encountered at distant sites: A female of unknown age recaptured and released at Robertsdale AL by bander Fred Bassett on 20 October 2000 (banded 3 October at York SC); an immature male found dead by Parrish Pugh at Thomaston AL on 1 October 2006

(banded 17 September); and a female of unknown age sighted by Judy Fruge on 21 September 1997 at Cameron LA near the Texas border (banding date unknown). All these birds were noticed and reported because they had a bar of green dye on their upper breasts, a color mark I apply to all RTHU banded at Hilton Pond. It is also significant that all these encounters came during fall migration, and all were at sites southwest of Hilton Pond—a strong indication they may have been aiming toward Rockport rather than going due south to Florida. Once again, the specific migratory route(s) they were taking after their encounters are anybody’s guess—which is why through “Operation RubyThroat: The Hummingbird Project” (www.rubythroat.org) I started leading hummingbird expeditions to Central America. This region truly was ripe for discovery; after all, during a hundred years



By late January in Costa Rica, virtually all young male Ruby-throated Hummingbirds are exhibiting some degree of throat molt. This individual already had about a dozen red gorget feathers, with three more “in quill.”

Photo © Bill Hilton Jr.



Ruby-throated Hummingbirds do not typically molt wing feathers on their breeding grounds in North America, so Operation RubyThroat has been able to document wing molt timing in the Neotropics. This female has clean, new primary feathers #1 through #6, a half-grown #7, and #9 through #10 that are faded and worn. Primary molt must be completed before the hummers begin their north-bound migration.

Photo © Bill Hilton Jr.

of scientific banding only 46 RTHU had been banded in all of Mexico and the seven Central American countries combined.

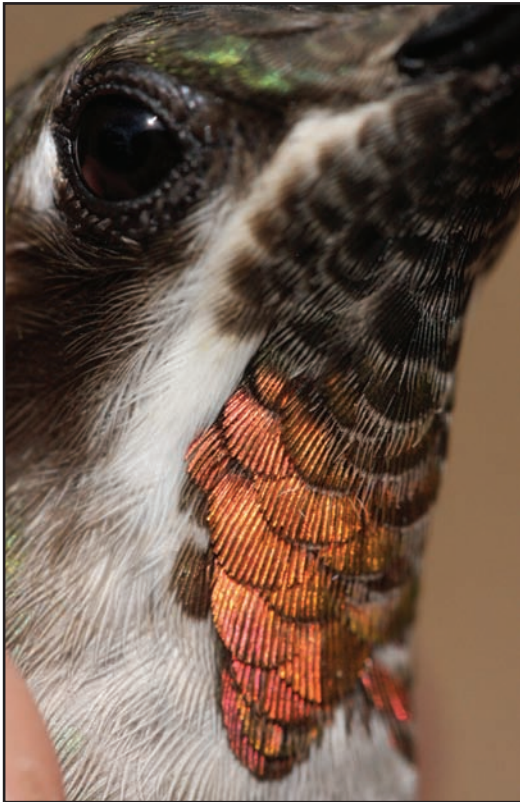
In late December 2004 I assembled a group of citizen scientists who journeyed with me to Guanacaste Province in the north-western corner of Costa Rica. We selected this Pacific Coast province because Ernesto Carman Jr., an up-and-coming young tico ornithologist, had observed good numbers of Ruby-throated Hummingbirds feeding in Aloe Vera plantations near the small town of Cañas Dulces. That first group of “Pioneers” included Susan Beree of Rockport, who at that time was a hummingbird banding sub-permittee studying under Dr. Brent Ortego of Texas Parks & Wildlife. Unfortunately, when we got to Cañas Dulces in late December that first year we weren’t aware Aloe Vera wouldn’t bloom until late January, so ruby-throats weren’t concentrated in the fields for easy capture. We did, however, find a small assemblage of RTHU feeding on tiny nectar-rich blossoms of a Jocote tree, where Susan Beree pulled the string on a trap that captured our first ever Ruby-throated Hummingbird

in Costa Rica. A second group of citizen scientists came in after the Pioneers departed and altogether that first year we banded 15 hummers around Cañas Dulces. This was a small number, but we were satisfied because it was the first time anyone had tried to systematically capture, band, and study RTHU on their wintering grounds in Central America.

The next year we went to Costa Rica much later in the season—the third week in February 2006—in the hope aloe would be blooming. We weren’t disappointed and in five days in the field banded 51 ruby-throats drawn to the heavy nectar load

of aloe blossoms. Each winter since I’ve taken a new group of U.S. and Canadian adults to help with observations and the banding process, and I now have several different study sites in Guanacaste Province. I also visited El Salvador in 2009 where I banded two RTHU at a training workshop for Mesoamerican biologists and then went on to Lake Atitlan in Guatemala to handle 57 more. Remarkably, these were the first ruby-throats ever banded in those two countries.

To further expand my work in the Neotropics, I’ve taken additional groups of citizen scientists to observe Ruby-throated Hummingbirds at new locales: Crooked Tree Sanctuary in northern Belize (2010 and 2011) and Guatemala’s Los Trrales Reserve (2011). The bottom line for all these trips is that through March 2011 my teams and I have captured, banded, and released 762 Ruby-throated Hummingbirds in Costa Rica, 72 in Belize, 61 in Guatemala, and two in El Salvador, bringing the Central American total to 897—quite a few more than those 46 that had been banded before I began my Operation RubyThroat expeditions in the winter of 2004-05.



Although hummer bands from the U.S. federal Bird Banding Lab may be used only on Ruby-throated Hummingbirds in the Neotropics, Bill Hilton Jr. and his citizen science teams have incidentally mist netted more than 20 hummingbird species. This Plain-capped Starthroat in Costa Rica has a two-inch bill and is nearly twice the size of a ruby-throat.

Photo © Bill Hilton Jr.

It's interesting—and not unexpected—that our Central American study sites have yet to yield any Ruby-throated Hummingbirds banded in North America, but I'm hopeful that day will come. One exciting encounter did occur in June 2009 when a banded female RTHU was found in a truck bay at Baxley GA, just west of Savannah. When Stacy Carter reported the dead hummer to the Bird Banding Lab, he learned I had banded this bird at Cañas Dulces during one of my mid-winter expeditions to Costa Rica. As such, C51599 became the first hummingbird of any species ever banded on its wintering grounds in the Neotropics and later encountered

within its breeding range in North America. In a sense, then, this was the first real “proof” of long-distance northbound hummingbird migration; all previous evidence had been merely circumstantial.

Although little can compare with the excitement of having a hummer banded in Costa Rica show up 1,500 miles north in Georgia, my 28-year long-term study of Ruby-throated Hummingbirds has been filled with interesting results. For example, of the 4,000-plus RTHU banded at Hilton Pond more than 12% have returned in at least one later year—a conclusive demonstration of hummingbird site fidelity in the Carolina Piedmont. Interestingly, I now have evidence of similar site fidelity for this species on the Costa Rica wintering grounds; nine of my banded RTHU have returned to exactly the same site within the aloe fields—ample justification for environmentalists, governments, and landowners to protect habitats on BOTH ends of the species' migratory path.

My citizen science teams also have spent quite a bit of time observing Ruby-throated Hummingbirds both before and after I've banded the birds. We've learned a lot about molt sequencing and another thing we now know for sure is that adult male RTHU are just as territorial on their wintering grounds as they are within their North American breeding territories. And because we've seen ruby-throats feeding on more than two dozen native Neotropical plants—including many that are neither red nor tubular—we have reason to believe RTHU may be more important as pollinators of tropical herbs, vines, and trees than anyone suspected.

Despite all this work, there's still plenty to learn about Ruby-throated Hummingbirds in South Carolina and Texas and the rest of North America; what these birds do during the “other” six months of the year when they're south of the border is wide open for discovery. To better understand these long-distance hummingbird migrants, in future years I'll be taking still more citizen



All Ruby-throated Hummingbirds banded at Hilton Pond in York SC also receive a necklace of temporary green dye to minimize recaptures. RTHU banded in the Neotropics are also color marked according to this scheme: Costa Rica (turquoise), Belize (purple), Nicaragua (orange), and Guatemala (black). Observers in Texas should look for green-marked birds during fall migration and the other colors during spring.

Photo © Bill Hilton Jr.

science groups to the Neotropics when the ruby-throats are “down there.” In November 2011 I’ll lead my first-ever Costa Rica group excursion to San Jose, where ever-vigilant Ernesto Carman Jr. has observed a population of ruby-throats in Chayote plantations near Paraiso—far east of where the species was believed to overwinter. Then, in January 2012 I’ll take two expeditions back to Guanacaste Province in western Costa Rica, followed by my maiden trip in February to Montibelli Forest Reserve in Nicaragua. The winter season ends up with two more excursions to Crooked Tree in Belize during early March.

As 2011 unfolds I’ve already been banding and recapturing more Ruby-throated Hummingbirds at Hilton Pond and am looking forward to the upcoming nine-day trips to Costa Rica, Nicaragua, and Belize. No experience is necessary for teachers, senior citizens, backyard birdwatchers, nature photographers, and other interested adults who’d like to participate in these exciting citizen science expeditions, all of which are described in detail on my Hilton Pond Web site in pages linked from www.hiltonpond.org/TropicalTripAnnounceGeneral.html. Field work is not physically demanding and there are a multitude of opportunities to watch birds and all the local flora and fauna, from butterflies to orchids and

monkeys to strangler figs. (Costs are reasonable, and because Hilton Pond Center is a non-profit organization a significant portion of your trip expense is tax-deductible.) Join me this fall or next winter in the warm, sunny Neotropics and perhaps YOU will be on hand when we finally encounter a banded Ruby-throated Hummingbird that has migrated 1,500 miles from Rockport or Hilton Pond.

Along with Susan Beree of Rockport, other

Texans who have signed on help in Costa Rica are Twyla Miranda (Arlington) and Laura Templeton (Abilene). I’m pleased that I now have quite a few Operation RubyThroat “groupies” who have been with me on more than one hummingbird expedition.

If you can’t join me for one of my Operation RubyThroat trips organized through Holbrook Travel, don’t forget in this

and future autumns to watch throughout eastern Texas for that odd-looking Ruby-throated Hummingbird with a bright green color mark on its upper breast or throat. And during spring migrations be on the lookout for my northbound RTHU from Costa Rica (marked with turquoise), Belize (purple), and Nicaragua (orange). Please let me know immediately research@hiltonpond.org if you see a color marked bird and likewise report it to the Bird Banding Lab by phone at 800-327-BAND or via the Web at www.reportband.gov. (Use the same contacts to report a banded native bird of any species.) You never know when your observation of migratory Ruby-throated Hummingbirds will help unlock an important secret about these tiny balls of fluff that fly from Texas to the Neotropics—and back.

By Bill Hilton Jr.
research@hiltonpond.org