In late summer, as the days get shorter, wood thrushes head to Central America's forests, seeking refuge in ancient strongholds that are facing modern pressures.

BY SUSAN MCGRATH/*Photography by Rob Howard*

Belize

"WOOD THRUSH!" pronounces Glenn Crawford in his melodic Caribbean burr. "Here we call that 'Jumping Joe.' "

Crawford draws two plastic chairs from under a pink-flowering shrub, tips one toward me and drops himself into the other. He's just returned from a post-church-service family luncheon to find this foreign interloper trespassing in his garden, at the edge of Crooked Tree Sanctuary in Belize. No doubt he had other plans for his afternoon, but birds eclipse all considerations, as far as Crawford's concerned. He's Belize's nonpareil birding guide.

"Speaking of the devil. That's Jumping Joe right there."

A wood thrush has hopped onto the lawn. Homely by tropical standards, it's slightly smaller than an American robin, long of shank, mousy of back, wing, and crown. It has a limpid brown eye, though, like a thoroughbred horse's, and a black-dotted-ivory breast, like a pale ocelot.

Obligingly, the thrush hops closer, dips its head to probe for a millipede, hops, dips again. Crawford beams at the bird, then answers the question I haven't gotten around to asking yet.

"You know, 15 years ago I'd see wood thrush all over the village at this time of year—February, March, just before they're heading back," he says. "Under the trees, eating the fruits other birds are knocking to the ground, gorging themselves for the trip north. Numbers have just dwindled completely since then."

Indeed bird-banding projects in Central America and Mexico and roadside counts in the United States confirm Crawford's anecdotal observations. Between 1993 and 2003, wood thrushes at a study site in Guatemala declined by 4.8 percent a year, though the past four years have shown a slight improvement. Data from the Breeding Bird Surveys indicate that over the past four decades, wood thrush numbers in Canada and the United States have dropped by 48 percent overall.

"I can't say why it is," Crawford remarks. "Belize still has forest—connected forest—from Altun Ha on the coast right to the Guatemala border. Almost a third of our land is protected as park or sanctuary or forest reserve. So is it something happening here, in Central America, or is it up north on their breeding grounds?"

That's a question ornithologists have been wrestling with for the past quarter-century or more. What factors underlie this beloved, once-common migratory songbird's alarming, disproportionate plunge? What have ornithologists learned? Dividing the wood thrush's seasonal ranges between us, *Audubon* field editor Frank Graham Jr. and I took to the woods to see for ourselves. Graham reconnoitered breeding habitat in the Green Mountain State of Vermont (see "A Tale of Two Habitats: Vermont," page 52), and I flew south to Belize, the Central American stronghold for wood thrushes and other neotropical migratory birds.

Belize is a country that's had little more than location in common with its neighbors in the past 400 years. No conquistadores, no dirty wars, no predominance of Spanish Catholicism, no vast estates on which thousands of indigenous people were pressed into serfdom. About a third of its land mass lies in parks or reserves. And its population density looks like a typographical error—34 people per square mile versus, say, El Salvador, which packs in 874 people in each of its square miles. Even the bucolic state of Vermont in Jumping Joe's nesting grounds has a density more than twice that of Belize. But that may be changing.

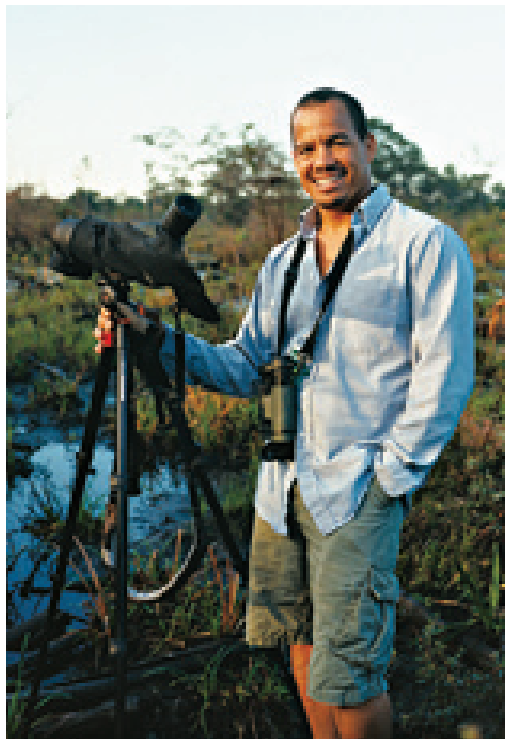
In recent years the Belizean government has rolled out the red carpet for the cruise ship industry, and it has encouraged the development of large-scale tilapia and shrimp farms, which pollute water and introduce invasive species. Fast-growing communities of Belizean Mennonites are stripping thousands of acres of forest at a rate heretofore unknown in this laid-back nation, planting chemical-intensive crops on every arable acre they can buy. Immigrants from Guatemala have cleared thousands of acres for farms within protected areas, and illegal logging is rampant. A 2005 report issued by the United Nations Food and Agriculture Organization singled out Central America as the region racking up the world's highest rate of deforestation of primary forest—1.2 percent a year—to the consternation of many Belizean and foreign conservationists.

And now the latest: In 2006 wildcatters struck oil in central Belize. Although it was a modest strike, it has nevertheless prompted a paroxysm of activity—the granting of leases, seismic exploration, jostling for shares—none of it directed at safeguarding wildlife.

"The lowland tropical forests wood thrushes favor are precisely the places people want to put banana plantations and build houses and raise cattle," says Greg Butcher, Audubon's director of bird conservation. Clearing or altering those for-

Belize's Crooked Tree Sanctuary is composed largely of wetlands, but it also provides forest habitat that shelters wood thrushes and other migratory songbirds.

ILLUSTRATION BY DAVID ALLEN SIBLEY



Above, from left: Belize Audubon board member Lascelle Tillett, former board member Philip Balderamos, and Programme for Belize director Edilberto Romero are working to ensure that wood thrushes and other birds have territories to come back to. Right: Guide Glenn Crawford. Wood thrushes (opposite) return to the same winter territory year after year.

ests consigns woodland birds to marginal habitat, where they have to burn more energy evading predators and finding food. A habitat can support only so many birds.

One dicey reality of conserving the wood thrush in its winter range jumped out at me even before I stepped on a plane to Belize: the exigencies of geography.

The wood thrush's summer range encompasses southeastern Canada and the whole eastern half of the United States as far south as the Florida Panhandle—an area of roughly 1.3 million square miles. In late summer all the wood thrushes from across that enormous expanse funnel down across the Gulf of Mexico to squeeze into a narrow wishbone of land, from south-central Mexico and the Yucatán Peninsula along both coasts of the slender isthmus of Central America. This winter range includes an impressively lengthy list of countries—Mexico, Honduras, Guatemala, Belize, Nicaragua, El Salvador, Costa Rica, and Panama—but offers a scant 185,000 square miles of ground.

The mileage mismatch means one square mile of intact Central American forest must house six to eight times the number of wood thrushes that a square mile of North American forest does, along with its full complement of other migratory and resident birds. That means the loss of a single, bird-rich acre of primary lowland forest here is equivalent to the loss of approximately seven times its northern counterpart. Such a contrast holds "an unsettling implication," writes ornithologist John Terborgh, director of the Center for Tropical Conservation at Duke University, in his book *Where Have All the Birds Gone?*

Birds concentrated into these tropical forests can scrape by through the months of northern winter, September through April or May. Alexis Cerezo, a wildlife biologist at the Foundation for Ecodevelopment and Conservation, a Guatemalan nonprofit, has banded wood thrushes at sites in a protected area in Guatemala for the past 17 years. "Survival rates are high in our sites," he reports, "though we're detecting declines in total captures of wood thrushes. This probably means we're detecting declines caused in North America."

Clearly one reason Glenn Crawford is seeing fewer wood thrushes at Crooked Tree is because we northerners are doing a poor job of sending healthy numbers south. But when pressed, even Crawford expresses some concern about what's happening elsewhere in his country.

Northwest of Crooked Tree the land rises gradually out of the floodplain, providing year-round dry footing for crops. Farther west lie more protected lands, including forests favored by wood thrushes. Philip Balderamos, a former Belize Audubon Society board member who runs a United Nations small-grants program here, is picking me up at Crooked Tree for a state-of-the-wood-thrush road tour. He has sweet-talked board member Lascelle Tillett, co-owner of S&L Travel and Tours, into chauffeuring. It wasn't tough; in the 1980s Balderamos used to moonlight for Tillett. Despite their difference in age—Balderamos is in his early 50s, Tillett is pushing 70 now—the two men strengthened a warm bond through their passion for birds.

The route from Crooked Tree leads first through land farmed by mestizos, who in Belize are predominately of Spanish–Mayan descent.

The fields have the characteristically scraggly look of *milpa,* the traditional slash-and-burn agriculture system that leaves trees of any size standing, with crops, shrubs, and native grasses growing casually in between. We creep along here because the hedgerows twitch with songbirds, while small duck-and-heron-and-rail filled sloughs line the road. Balderamos and Tillett cannot be hurried in the presence of birds.

"This isn't good habitat for wood thrush and other deep-forest birds anymore," Balderamos says. "But you can see that there are still ovenbirds and magnolia warblers and orchard orioles." The milpa provides at least marginal habitat for migrants.

Then a string of paper dolls appears silhouetted against the sky—six flaxen-haired, gingham-frocked schoolgirls skipping hand in hand. They make a charming introduction to the major threat to wood thrush habitat in this area: Mennonite land-use practices. Now we see no hedgerows, no shade trees, no native grasses or shrubs. Only fields, vast and manicured, their furrows adhering to Euclidean laws, not contouring to nature's designs.

"The Mennonites have by far the highest birth rate in Belize, and their culture drives them to constantly open up new settlements," explains Edilberto Romero. He directs the nonprofit Programme for Belize, which manages the Rio Bravo Conservation Area, a 260,000-acre protected area now ringed on the north and northeast by Mennonite lands. "Many are wealthy by Belizean standards, not like subsistence farmers. They're buying huge tracts of forest from the government and clearing them right to the ground, planting chemical-intensive crops like cotton and papaya."

Within the past 10 years several new Mennonite settlements have sprung up in this area, clearing 40,000 acres of forest, with no sign of slowing. Settlements butt right up against the Rio Bravo boundary now, whittling away at the crucial connectivity of habitat in Belize. Romero has been knocking on the doors of Mennonite leaders, trying to establish a rapport to lay the groundwork for introducing the precepts of sustainable agriculture and biodiversity.

"It's not entirely hopeless," he says. "But attitudes change very slowly, and the face of the land is changing fast." It's a conundrum, he confesses. Before Mennonites came to Belize, the country imported almost all its food from Guatemala and Mexico. Now Mennonites supply the entire country with chicken, eggs, milk, and corn.

At a whitewashed farmhouse Romero introduces us to David Wall, the leader of the new settlement of Indian Creek. It's a rare opportunity to learn something about the culture firsthand. While towheads in purple dresses peer around doorways, giggling at my trousered legs, Wall chats with us affably. Does clear-cutting for farmland make Wall

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LLOYD SPITALNIK

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worry about running out of wood for building, I ask? The absurdity of the notion prompts a chuckle. "No, we have cement and zinc; we don't need wood." The average Mennonite family numbers 10. Couples marry young, and it's not unusual for men to outlive several wives, having multiple children with each. Do farmers have so many children because they're needed to work the farms? Wall laughs again. "No, that's just nature! The factory is always open," he says with a farmer's unabashed bawdiness, "so out they come!"

Somewhat abashed ourselves, we continue on our way, at last crossing from open soybean fields into exuberant tropical forest. This is Rio Bravo, winter haven of innumerable wood thrushes and other forest-dwelling birds.

It's dusk. Songbirds have put themselves to bed. Forests here tend to be lower and leafier than the famous gloomy vaults characterizing rainforests farther south, though, so it's not too dark to stroll up a path into the woods. Loosely stitched up with vines, the louvered fronds of small palms and narrow trunks of understory trees and epiphytes line the open path. We don't go far. As darkness falls, nightjars and bats escort us back to the field station.

The Rio Bravo Conservation Area is the largest nature preserve in this country that doesn't belong to the government—a fact that recently gained significance with the discovery of oil in Belize. In 1985 a consortium including Belizean and American businessmen and Coca-Cola Foods acquired a 700,000-acre tract here along the Guatemala border. Coca-Cola announced its intention to clear its portion for citrus to supply its Minute Maid subsidiary. The international conservation community scrambled its fighter jets. Coca-Cola desisted and offered the land for sale.

Massachusetts Audubon set out to buy it. American schoolchildren emptied their pockets for an adopt-an-acre campaign. Later, five utilities in the American Midwest coughed up carbon-sequestration funds, and The Nature Conservancy's Edge of Appalachia Program solicited earmarked gifts. The money was enough to buy 210,000 acres and even pay for conservation and education programs. Coca-Cola topped that off with a gift of 50,000 acres. Massachusetts Audubon helped found Programme for Belize to manage the land, preserving in posterity its abundant biodiversity.

Or so they thought. Then came the 2006 crude oil discovery. The government of Belize retains the subsurface rights to every inch of this country. Since the oil strike it has leased seismic exploration rights to companies from the United States, Belize, and elsewhere, parceling out more than 90 percent of the country's landmass, waters, and barrier islands, including all of the protected areas.

Due south of Rio Bravo, Belize's first producing oil well is as tidy as a Potemkin village—five pump jacks swing endlessly on a fenced patch of gravel surrounded by miles of Mennonite farm. But producing oil requires all-weather roads and staging areas for storage tanks and truck-loading bays; it brings in heavy tanker trucks, puts pipelines across the landscape, sinks offshore wells, floats oil-laden barges on the seas. Damage to the natural environment is inescapable, especially in mostly roadless wild places like Rio Bravo and Crooked Tree.

Belize is a poor country. A third of its people live below the poverty level. Oil independence can help reduce poverty and raise the country's standard of living, so there's little doubt the government will drill wherever oil is found. Furthermore, although the country's leadership has demonstrated an uncommon understanding of the value of wild areas—setting aside hundreds of thousands of acres in parks and reserves of various kinds—it has on occasion displayed a troubling tendency to treat these priceless deposits as checking accounts.

More than once in the past dozen years the government has carved off a choice chunk of protected area for a private developer. In 2007, for example, word slipped out that the government was considering selling a piece of Bacalar Chico National Park, part of a World Heritage Site on Ambergris Caye. The ensuing local uproar failed to sway the government, and only after a concerted international effort was the sale rescinded. In 2004 a similar episode had transpired at the Cockscomb Basin Wildlife Sanctuary, though there the Belize Audubon Society and the local Mayan community succeeded fairly quickly in having the land returned. In 2005 it was Crooked Tree Sanctuary's turn. An influential Belize City businessman leased two plots within the sanctuary to expand his crocodile tourism farms. Follow-

From left: Belize has set aside a third of its land in parks and preserves, but wildcatters struck oil in 2006 and exploration teams operate all through the country, including in Rio Bravo. Expanding Mennonite settlements are clear-cut for intensive agriculture, leaving no habitat for wood thrushes and other migrants.

ing strenuous objections from Belize Audubon, the government assured executive director Anna Hoare that the leases have been revoked. Hoare is still waiting to see the official documentation.

As this story goes to press, Crooked Tree once again figures in Belizean headlines. A newly elected district official whose campaign slogan was "Clear the Land!" sent over a D-9 bulldozer to scrape and fill an all-weather road right through the sanctuary's western lagoon so that Crooked Tree villagers with farm plots on the other side of the sanctuary can cross the lagoon without canoes. The Forestry Department slapped a stop-work order on the project, but there's little doubt now that the road will eventually be completed, albeit with mitigating design features such as culverts that allow water to pass through it. Most Crooked Tree community members support the road; it will make their lives much easier.

Unfortunately, says Anna Hoare, "the institutional systems and frameworks we have here in Belize are weak. The country has some effective environmental laws, but because they are not synchronized with one another, it's too easy to sidestep them. We must shore them up. Otherwise, I fear that it's the environment that will pay the price, and, ultimately, the people of Belize."

Do you hear that?" Balderamos asks, his eyes luminous with excitement, his left hand already reaching back for the notebook tucked into his belt. "It says *quick, quick*! Then, *so quick*! Red-lored parrot. Call-and-response. And that—a sound like *ha-ha-ha-ha-ha*! Laughing falcon. I'll tell you, it's announcing a change of weather. Local people have used that for years."

We've climbed an ancient path to La Milpa, in Rio Bravo, an extensive Mayan city-state long since reclaimed by jungle, a scant half-mile from the field station. Near the base of a mahogany tree we flush a blue-crowned motmot. It bolts up from the ground to a branch at eye level, where it perches, irritably tick-tocking its blue, racquet-tipped tail. We examine the ground and find a shallow well. It's a *chultun,* a stone-lined cistern where, a thousand years ago, Mayans stored drinking water. You frequently find motmots nesting in them, my companion tells me.

Then: "Listen! Do you hear that call, *pet-pet-pet*?

"That," Balderamos announces triumphantly, "is a wood thrush."

I can easily see the bird in my mind's eye, tipping up leaves under the lianas and between mahogany buttresses, but its ocelot spots prove indistinguishable from the dappled understory, and I search for it in vain. I'd like to see a wood thrush here in a forested Mayan ruin so atmospheric it could double as a set for an Indiana Jones movie.

Twice a year this little wood thrush makes the gigantic journey between its two habitats. Ornithologists find the same individual birds coming back to precisely the same forested territories year after year. This La Milpa wood thrush could be the very one I hear in the White Mountains of New Hampshire on a summer's evening. I like to think it is.

It's up to us to make sure this bird finds both its forests still intact. If we can figure out a way to preserve these woods, north and south, a beloved, once-common migratory songbird may survive after all. ■

Susan McGrath's *most recent article for* Audubon *was about aplomado falcons in Texas.*

WHAT YOU CAN DO

The best way to bolster conservation in Belize is wonderfully painless: save up your pennies and take a holiday there. See the Belize Tourism Board's website (www.travelbelize.org). Also check out S&L Travel and Tours (www.sltravelbelize.com); Bird's Eye View Lodge at Crooked Tree (www.birdseyeviewbelize.com/home.htm; call 011-501-203-2040); La Milpa (www.pfbelize.org); Chan Chich (www.chanchich.com; 800-343-8009 or 011-501-223-4419); and Cockscomb Basin Wildlife Sanctuary (www.belizeaudubon.org/parks/cbws.htm).

National Audubon's International Alliances Program works with BirdLife International to protect Important Bird Areas in the region. For more, go to www.audubon.org.