

# ResQ IN PANAMÁ

## CAN WE SAVE THE FROGS?



Eva J. Pell



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*For Landon, Aspen and Hudson,  
whose views of the world  
inspire me every day.*

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Map of Panamá, PAT public domain map (modified)

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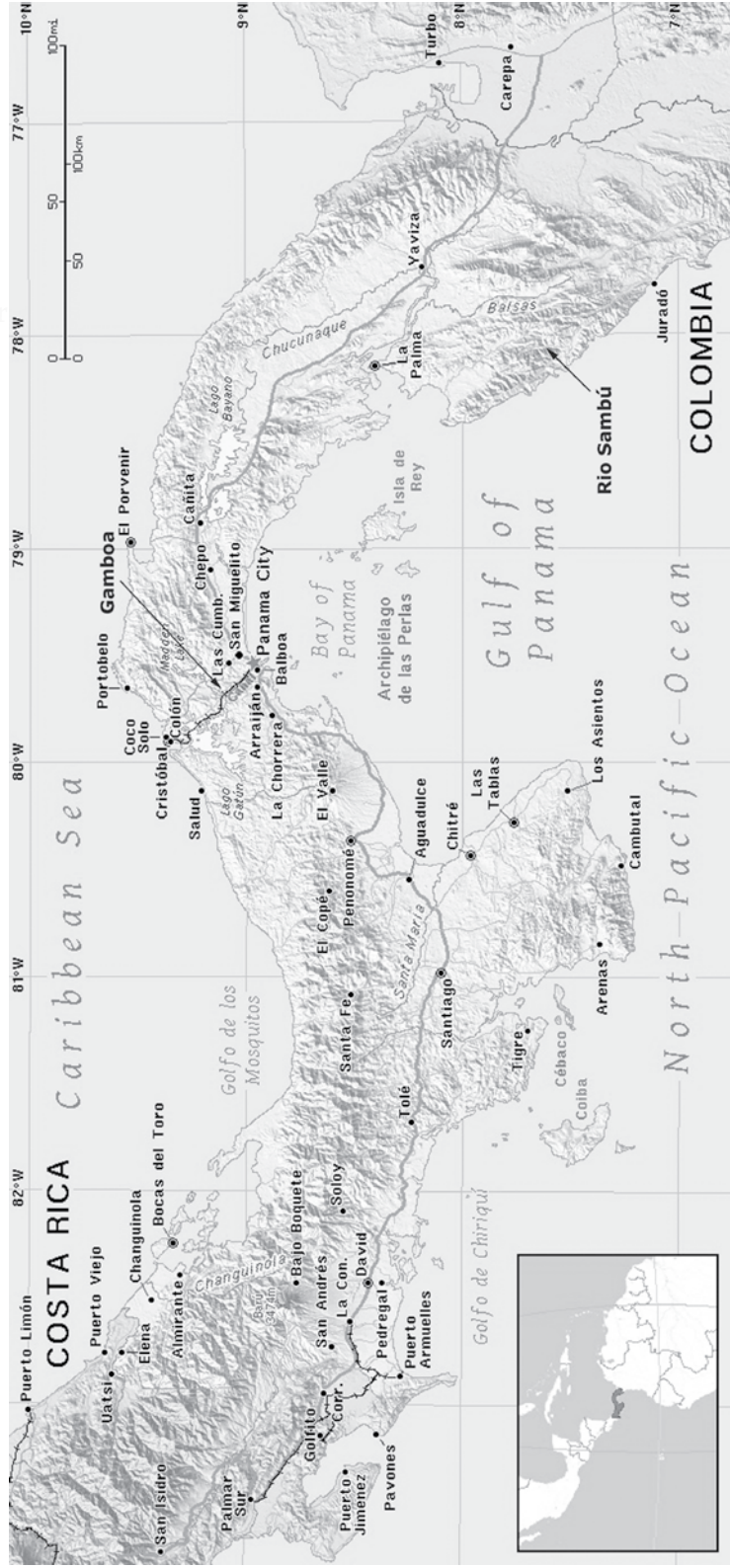
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# MAP OF PANAMÁ



## 1. NOT ALL FROGS LOOK LIKE KERMIT

“Look what I found, Stowe. Hurry.” Wheaton’s little brother Max jumps down, pointing at a black frog with neon-green markings he’s captured in his pail.

Max and Wheaton’s parents, my aunt and uncle, have rented a house in Gamboa for a couple months while they’re working on some architectural project in nearby Panamá City. Because I’m home schooled, I can study anywhere, so I got to come along.

It’s been raining since we arrived, but that hasn’t stopped the three of us kids from exploring. Today we’ve been checking out the banks of the Panamá Canal that open into Lake Gatún. Of course, my five-year-old cousin is always on the lookout for things he can collect.

“What ya got there, Squirty?” I squat down to Max’s level.

There in his yellow pail is a little black frog with neon-green coloring laced across its skin. It's less than two inches long.

"It's a frog, but what's with the weird color?" says Wheaton, peering over his brother's shoulder.

"Good job," I tell Max. "Looks like you've found some sort of harlequin frog. Remember them from the Amazonia exhibits at the National Zoo?"

We're so busy checking out this find that we hardly notice a small boat pull up to a nearby dock.

"*Buenos días. ¿Qué tienes ahí?*" a guy calls out as he walks over to us. He's around my height, which is now 5'5". He's got dark skin and eyes, and straight black hair almost like Wheaton's, but it's cropped close to his head. He's joined by a short dark-haired girl. They're older than us, I'm guessing around twenty. Both of them have on boots up to their knees, those broad-brimmed canvas hats people wear in the tropics, and long-sleeved safari shirts.

I'm not sure what they're saying. I only know a little Spanish.

"*Hablo only un poco español,*" I tell them.

"No problem," the guy says. "We speak English. You have something special there?" He sounds a little cocky.

The two of them lean over and check out what's in Max's pail.

"*Atelopus limosus,*" the girl says to the guy. "Remember they mentioned releasing some of these?"

She looks up at us. "I am sorry, we should introduce

ourselves. I am Oris Rivera and this is Carlos Aceveda. We are college students here on summer break doing research at the Smithsonian Tropical Research Institute. We call it STRI.” She holds up the ID that’s hanging around her neck to show they’re legit.

“Hi. I’m Stowe LeBlond, this is Wheaton Guinto, and this is our little Max.” Before I can explain anything about us, Max interrupts.

“It’s not summer. It’s snowing in New Jersey.”

“Honey, I think they may be from South America.” I look at the pair.

“Yes,” Carlos says, “we are from Colombia. Not too far away. We just finished our third year of college and are here to help with a frog rescue project.”

Hearing the word rescue, Wheaton gives me an elbow.

“You found a *limosa* harlequin toad.” Oris points into the pail.

“Toad, not a frog?” I ask.

“It is a true toad. But all toads are frogs, so you are right too. Lots of frogs all over the world are becoming endangered,” Oris says. “We are working here with a lab that collects healthy frogs and breeds them to be sure there are populations that survive for the future.”

Wheaton looks up from his brother’s pail. “Sounds a little like Noah’s Ark.”

Carlos points his finger. “You got it, my man. And when the breeding goes well—” he pauses and gestures with his hands like he’s slow bowling—“scientists release some

frogs to see how they do back in nature. I'm pretty sure a bunch of these limosas were set free in this area. We should take your frog back to the lab where we can check and see if it is one of them."

Max picks up his pail and makes a face. "This is my frog."

Oris squats down and gives Max a smile. "Would you like to bring your friends and come see all the frogs we have? There are many different kinds in lots of colors."

Max gives an enthusiastic nod.

"Are we sure they aren't kidnappers?" Wheaton whispers in my ear.

"It's fine. They showed us their IDs before. But if it makes you feel better, google that STRI place."

Wheaton does a quick search on his phone and then gives me a half-hearted nod. "I guess it's okay."

"Lead the way," I say to the students.

We follow them to a compound with a bunch of buildings. Off to the side are what look like a couple of containers from a ship. But there's no boat around.

"Enter," Carlos gestures.

He walks us to the office and tosses his hat to the side. "A shipping company donated these containers," Carlos tells us. "Scientists had them redesigned to be controlled environment chambers for breeding frogs."

"They may not know why the frogs are being isolated this way," Oris says to Carlos. Then she turns to us. "Do you know what fungi are?" she asks.

“Yeah.” Wheaton says. “Mushrooms. What do they have to do with frogs? Unless you’re studying how often they sit on toadstools.”

Carlos looks puzzled. “Toad stools?”

“Don’t be such a smarty,” I give my cousin a shove.

“Aren’t a lot of fungi microorganisms?” I sort of want to let them know I have a science background.

“That’s right, Stowe. Now have either of you ever heard of a disease caused by a chytrid fungus?”

“Ah... no,” Wheaton says.

“Me neither,” I admit.

“Amphibians have been dying all over the world in amazing numbers, especially frogs, toads and salamanders. Some years ago, scientists discovered the cause—a fungus whose full name in Latin is *Batrachochytrium dendrobatidis*. We refer to it as *Bd*. Frog populations are declining at rates that could mean extinction,” Oris tells us.

“And if you are wondering why that is such a big deal,” Carlos says, looking down at Max, who’s busy scratching one humongous bug bite, “it’s because frogs eat lots of bugs, including mosquitoes.”

“They are also important in the food chain,” Oris reminds us. “Now go wash your hands and put these booties over your shoes. Then we can go take a look at the collection.”

We scrub up. Wheaton helps his brother reach the sink and makes sure he dries his hands. The students take us through a series of doors, and we walk into the first container, or pod, as they call them.

Max immediately spies a tank with the *limosa* frogs. “Those are the same as mine!” he squeals.

Oris takes his hand. “Yes, they are. Come see some of the other tanks.”

The animals are amazing. “Is that gold one with the black spots the Panamanian Golden Frog?” I ask.

“Yup. That harlequin is the national symbol of Panamá, found no place else. It is critically endangered—any worse and, *pow!*”—Carlos’ fist pushes into the air—“it goes extinct.”

We walk from tank to tank. There are at least twelve different types of frogs here. Their Latin names are posted on the outside. The common names are easier to remember.

Max has been running back and forth. “Look at this one. It’s blue, Stowe, like your eyes.”

“That is a poison dart frog, little man,” Carlos says.

“Poison? Are any of the other frogs poisonous?” Wheaton asks, putting his arm around Max. “My brother handled that *limosa* frog.”

“Only poisonous if you eat them...”

“Yuck.” Max wrinkles his nose.

Carlos continues, “We wear gloves so we don’t make them sick. If you touch these frogs without gloves, don’t rub your eyes or face, and be sure to wash your hands. You will be fine.”

“Weren’t you going to do something with that frog Max found? You said you wanted to figure out if it had been



released from here?" I ask.

"Thanks for reminding us, Stowe," Oris answers. Let's go to the outer room where we left the pail and check the limosa out."

We follow her as she scoops up the frog and carries it over to a table with a light mounted over a small box. She slips the frog in and turns it upside down. She hands us protective goggles and then turns on a purple light.

"Don't look into the light. Focus on the frog's toe pads."

We all peer in. Three of the toes look just the same as they did before she turned on the light, except with a purple haze.

"Look at that toe," Max squeals, pointing at the fourth one. "It's orange."

"You spotted the tag. Good job," Oris says. She turns off the light and gives us a more complete, adult explanation.

"Before releasing the animals, the scientists inject a material called an elastomer beneath the skin of the toe pads. It is liquid when injected but it becomes solid once in place. The elastomer was mixed with a dye that fluoresces orange under ultraviolet light."

"The tag doesn't hurt the frog, or mess up its hopping abilities?" I want to be sure the animal is being treated right.

"Good question, Stowe. The material used in those tags is not a problem, but scientists do have to pass these types of treatments by a formal committee to make sure they are not affecting the animals' well-being."

Oris walks across the room and pulls down a notebook. "Did you find the frog where we met you?" she asks.

"Right next to the puddle!" Max pipes up.

She points to an entry and says to Carlos, "The boss is going to be happy to hear about this little guy. It was released six months ago, and it looks like its moved three kilometers downstream."

I do a quick conversion to miles. "Three kilometers, that's around 1.8 miles right?"

"Yes," Oris says. "I think people here will be very surprised. These reintroduced frogs don't usually travel that far. We are going to swab it to see if it has chytrid. If it is healthy someone from the lab will return it to your special spot."

Max is beaming. "Can I help you return it? Please. Please."

Oris pats his head. "We will try, little one."

Wheaton's shifting from one foot to the other. He's not as interested in wildlife as I am. "What, exactly, are you guys here for?"

Carlos walks over to a map of Panamá mounted on the wall. He points to an area on the southern border next to Colombia. "That is the Darién Gap. Until recently, it was the only region in Central America still free of chytrid-infected frogs—no more."

"Our professor in Colombia arranged for us to come here. We are supposed to conduct a survey in a national park down there to see how many different species of frogs we can find, and then test them for the fungus," Oris says.

“We have been here learning how to do the collections.”

“In a few days we will be leaving on a *l-o-n-g* trek to our field site in the Darién.” Carlos does a little march in place. “First we have to take a boat down the western coast of Panamá. Then a man from the Emberá tribe will meet us to travel first on foot and THEN by canoe to his village. From there he will guide us while we do our collecting.”

Carlos is being a little dramatic, but it sounds like quite a haul. Wheaton and I lock eyes and smile—great minds are thinking alike.

## 2. CAN RESQ HELP?

“So, Carlos,” I ask, “how long is that trip to the Darién going to take?”

“Hard to know for sure—at least a few days.”

“Don’t think we’re crazy,” Wheaton says, “but Stowe and I are part of an organization called ResQ that works to rescue endangered species.”

Oris and Carlos lift their eyebrows. It’s obvious they’re having a little trouble believing this short eleven-year-old dude.

“Have you heard of Ariella Gordon, the wildlife photographer?” I ask.

“Of course,” Oris answers. “She’s famous.”

“Ariella is the founder of ResQ—” Wheaton starts to say.

“—And our grandma,” Max chirps.

“We’ve already been to Borneo and Mongolia on rescues. And I’ve designed a variety of vehicles and instruments to help with the missions,” Wheaton tells them.

“He’s got a college degree in material science and engineering, and he’s working on a Ph.D.” I want to make sure they realize my cousin is for real.

“Whatever.” Wheaton hates calling attention to himself. “If you’re interested, we have something called the HeliBoaJee, which converts from helicopter to boat to jeep, as needed. It sounds like we could get you into the field a whole lot faster and help with the logistics on site. We just have to get Ariella to bring the vehicle down from New Jersey.”

I notice Carlos is checking our website on his phone. “They aren’t making this stuff up,” he says to Oris.

“We can ask our boss here in Panamá,” she says. “We will let you know if it’s okay.”

“Ariella needs to be consulted, too.” I’m as gung-ho as Wheaton, but we can’t go ahead without her approval. “Besides, none of our gear is here.”

Max has drifted off to look at the frogs, but his patience has worn out. “I’m hungry. Can we go home?”

Wheaton catches my eye. “We’ve gotta get my brother back for lunch.”

We say goodbye to our new friends and tell them that we’ll reconnect after everyone’s been consulted.

As soon as we’re finished with lunch, we FaceTime Ariella

and explain our morning's adventure.

"What do you think?" Wheaton asks. "If the people here are willing, do you want to bring everything down on the ECAPS and take on this rescue?"

"I've been working on a magazine article describing ResQ's work and was hoping to finish it before the holidays," she says, "but the chytrid fungus problem on frogs is very serious—the sort of thing we should be helping with. Wheaton, if you get the okay from the folks in Panamá, send me a list of everything we'll need, and I'll get down there in a few days."

We say goodbye to Ariella, and I call Oris to tell her the good news. She lets me know that their boss has also agreed, and once Ariella is down here, there will be a required briefing before our departure.

Wheaton gets busy organizing what we'll need for the rescue, and Max plays with his trucks, so I'm left to myself for a while. I grab a magazine about outdoor sports that the owners of the house left on the bookshelf and go out on the screened-in porch. There's an article about keeping hydrated. I start reading it, but it takes forever to finish a page. I can't be bothered, so I flip through the photos of happy people competing in everything from triathlons to skiing. Yeah, skiing, the sport I gave up. It's so humid that I'm hardly aware of the tears dripping down my face. Wheaton comes out and sits on the railing opposite me. "Hey, what's wrong, Stowe? Did something happen?"

I wipe the tears from my face and take a deep breath. "No. I'm thinking about where I am and where I'm going."

"You're in Gamboa and we're going to the Darién to save

endangered frogs.”

“I know. It’s so nice of your parents to include me on this trip, and the mission sounds awesome.”

“So, what’s the matter?”

“You know I walked away from competitive skiing? I was the best skier my age in the whole state of Vermont. Now I’m just a thirteen-year-old girl who still can’t read well.” I throw the stupid magazine off my lap and burst into tears.

Poor Wheaton. His big brown eyes give me a sad look. “Are you sorry about your decision?”

“No. The whole competitive scene was obnoxious. People think that you’re fabulous when you win and nothing when you lose. Of course, now I really am nothing. Not like you—you do so great at school, you’re so smart...”

“Stowe, stop it. You are NOT NOTHING. We could never have been successful in Borneo or Mongolia without you. And you’re plenty smart. Look at everything you know about the natural world. I’d be lost without you. Literally.”

“You’re being very sweet,” I say to Wheaton. “But face it, how could I ever be a vet if it takes me forever to read a book.” It’s hard for people without dyslexia to understand how frustrating it is to have to unscramble words and lose the thread of what you’re reading on every page. It’s exhausting.

Wheaton breaks out in a big smile. “Christmas isn’t for a few weeks, but I have something I made for you that might put you in a better mood. I’ll be right back.”

Wheaton and I have been best friends for a long time. It’s true he’s a brainiac. But it’s not easy for him either.

He spends a lot of time with Ariella, but she's not his age. At school, he's so much younger than the other graduate students that even though they're nice to him, they aren't going to be his friends. ResQ has been a great thing for both of us. Ever since Ariella founded the organization, we've had excuses to be together, going on missions. It's been those adventures that helped me realize there's more to who I am than being a competitive skier. At least I hope so.

Wheaton returns carrying a small box. "Happy late birthday and early Christmas."

I open it. "Glasses? I don't need glasses. This is your big surprise?"

He retrieves my magazine and hands it to me.

"Put the glasses on," he directs me. "And start reading."

These glasses are a little oversized, but the blue frames match my eyes. It's not likely Wheaton designed these as a fashion statement. I open to the article I was reading.

"What you need to do," he tells me, "is stare at a word that's giving you trouble and tap your right earpiece."

I start reading. After a few sentences I come on a word that doesn't compute. I recognize part of the word—"head," but decide to tap my earpiece rather than guess the rest.

Immediately a voice says "headache can be avoided by..." and then it stops.

"Wow this is strange. It told me the word I was getting stuck on and then the next few words too. How does it do that?"



“The glasses have a sensor that can train on the word you look at for longer than usual. Then when you tap, a processor uses artificial intelligence to read the problem word and the next few also. It sends a signal to small speakers in your earpieces that say the words so only you can hear it. If you use it for a while it should learn how fast you read and start pacing at your speed. Sooo, don’t get frustrated if you still feel slowed down for a while.”

“You know me pretty well, don’t you?” I give Wheaton a huge hug and whisper in his ear. “Thanks for this.” Of course, that embarrasses him.

He shrugs and changes the subject. “I didn’t name this invention. Thought you might like to do that.”

“Hmm. How about the Decoder? That makes it sound like I’m doing secret work, not trying to read like everyone else.”

“Decoder? I like it! Maybe I can find some other uses for it with that name.”

I think he’s referring to secret work he does at a military base in New Jersey. Because it’s secret, I have no clue what that’s about.

Wheaton’s phone buzzes. No more time to discuss my problems. It’s a text from Ariella.

GETTING ORGANIZED. I SHOULD BE ABLE TO LEAVE IN 48 HOURS. MAKE SURE TO ARRANGE FOR A LANDING STRIP FOR THE ECAPS. I WILL TEXT AGAIN WHEN READY TO DEPART.

It’s time to check in with our parents and pack for the Darién.

STOWE LEBLOND'S LOG

Gamboa, Panamá

December 2

2:00 PM

*During our first week in Panamá we've been exploring. Auntie Bianca and Uncle Alberto rented a cool house. It's in a small place called Gamboa not far from Panamá City and next to the Panamá Canal. More than 100 years ago, the United States, along with people from Europe, the Caribbean and South America built the canal to create a shortcut for ships sailing between the Pacific and Atlantic oceans.*

*The canal was created by digging through the jungle and damming up the Chagres River to form Lake Gatún. When ships come from the Pacific they move through locks, which lift them up to the elevation of the lake. Then they motor to the other side of the lake, where they enter another set of locks, which lower them so they can travel through the rest of the canal to the Atlantic. Of course, it works the same if they are going in the other direction.*

*The town of Gamboa was developed to house people from the Panama Canal Company responsible for dredging to keep the canal working well. We are staying in one of the original houses.*

*During the construction of the canal, some scientists from the Smithsonian did a biological survey of the area so there would be a record of what was there before water flooded the place. After Lake Gatún was formed and much of the tropical rainforest was underwater, some islands remained.*

*The largest, called Barro Colorado Island, is now a place where tropical biologists come from all over the world to do research. Today this area and many other locations in Panamá are part of the Smithsonian Tropical Research Institute, which everyone calls STRI.*

*We met some Colombian college students—Oris and Carlos. They are working with people from STRI who are running a big project on frogs that are going extinct. They are going to a place called the Darién Gap, located where Panamá connects with Colombia. Carlos told us about the Pan-American highway which stretches 47,000 kilometers from Alaska to the tip of Argentina. There is only one 100-kilometer stretch where there is no highway. You guessed it, the Darién Gap. And that is why ResQ is needed!*

*Ariella is coming down in a few days and then there will be lots more to tell.*

### 3. ARIELLA ARRIVES

I can't wait to start this expedition. I like Oris and Carlos already, and it'll be so cool to go to an indigenous village.

After what seems like the longest wait of my life, Wheaton's phone buzzes with a text from Ariella. "She's going to be in Panamá City in two hours. Let's get out to the airport."

"Can I come too?" Max asks.

"Sure, little guy. Let me call Oris and Carlos. They said they'd give us a ride to pick her up."

Through Wheaton's connections with the U.S. military we've arranged for the ECAPS to land at Tocumen International airport, and for the four of us to go out to the runway to help Ariella after she lands.

We arrive just in time to see the ECAPS, our mini-SPACE shuttle, cruise down the runway, slowed down by

a series of parachutes. This is the perfect way to transport the HeliBoaJee, our all-terrain vehicle for getting around in Panamá.

“Here she comes,” Max squeals.

When the ECAPS comes to a halt, Ariella opens the hatch and steps out. She’s in one of the blue space suits Wheaton designed for us. She removes her helmet. Her long white braid flops down, but the static electricity from the helmet has the shorter hairs going in every direction.

We race out to meet her. The three of us give her hugs and then introduce her to the students.

Wheaton doesn’t want to waste any time. “There’s a hangar we can use over there.” He points. “Why don’t I go park the ECAPS and load up the HeliBoaJee with all the gear you’ve brought.

“Afterwards I’ll fly us to Gamboa in the HeliBoaJee so we can get ready to go from there.”

“That sounds like a plan,” Ariella says.

Wheaton takes care of the transfer and zooms back in the HeliBoaJee.

“Wow, this is different,” Carlos says, walking around our vehicle.

“Double wow,” Oris echoes. “You say this thing can fly and run in the water, too?”

“Yup.” Wheaton can be a man of few words.

The students stare at the squat craft with its pointy front and a tail where the hatchback would be on a regular jeep. Oris glances at Carlos and raises her eyebrows. But before

she can develop what might be skeptical thoughts, Wheaton jumps into action.

“Let’s get into Heli mode.” He punches some commands into his ever-present laptop.

The vehicle elongates, wheels retract, landing skids emerge, and rear and upper rotors extend.

Carlos lets out an impressive whistle.

“Can I go in the Heli with Wheaton?” Max begs, breaking the awe-inspired silence.

“Why not,” Ariella says. “Wheaton, take your brother and Stowe with you. I’ll ride with Carlos and Oris. We’ll stop at STRI so I can meet with their boss. I’ll see you at the house when we’re finished.”

With no more conversation, we all climb into our respective vehicles and take off.

Max doesn’t get many chances to ride in the HeliBoaJee, so he’s in orbit. “Rrrrrrrr,” he hollers, imitating the sound of the rotor.

As we leave the airport, Wheaton swings over Panamá City, avoiding all the traffic down below.

He turns the HeliBoaJee and, for a moment, hovers over the mouth of the Panamá Canal where it meets the Pacific Ocean. The ships are lined up to make their trip across to the Atlantic.

Nothing’s going to slow *us* down. Next stop the Darién.

## STOWE LEBLOND'S LOG

Darién, Panamá

December 4

3:00 PM

*This rescue feels different from the others we've been on. In Borneo, we were dealing with orangutans critically endangered because their habitat is being destroyed and people poach the babies as pets. In Mongolia, the takhi are endangered because people captured the horses. Put that together with harsh climate and competition with domestic animals for food, and bye-bye, takhi. This frog problem is something completely different.*

*There are so many pieces to this puzzle. I've been reading this book about frogs which Oris let me borrow. Wheaton designed these cool glasses for me that help with my dyslexia. (I'll explain more later.) They came in handy—there were a lot of words I didn't recognize. Of course, that might not just be because of the dyslexia—you'll see.*

*First, there's the disease. It's called chytridiomycosis. (See what I mean.) It's caused by a fungus with the Latin name Batrachochytrium dendrobatidis (Bd). What happens is the fungus attacks the skin of the amphibian—actually it goes after keratin, a protein found in the skin. That is a real problem for the amphibians since they use their skins to breathe and regulate uptake of water and important salts, like potassium and sodium. Their bodies get out of whack, and if it's bad enough they are done for.*

*I found this cool website describing amphibians <https://amphibiaweb.org/>. There are A LOT of amphibians in*

*the world—more than 8,000 species. They are found everywhere, from subarctic places to the tropics. Supposedly 500 species of amphibians, including frogs, salamanders and toads, have been attacked by this disease, with over 90 species going extinct. It's a BIG problem.*

*This Bd fungus is really infectious. A diseased frog touches another one, or the spores float in the water and another amphibian comes along. Before you know it, you have an epidemic. The disease is spreading around the world, sort of like what happened with Covid-19.*

*It's very bad in Central and South America, and in Australia, and it's also been found in parts of North America, the Iberian Peninsula (that's where Spain and Portugal are), and in some of the Caribbean islands. There are plenty of amphibians in Asia and Africa, so it's odd that the disease isn't such a big deal there. Scientists think that Bd comes from the Korean peninsula in East Asia and has lived there for millions of years. Maybe the amphibians that live there have evolved with the fungus and can tolerate it. The disease started moving around the world sometime 50-120 years ago. That's around the time frogs started to be imported for the pet trade. Odds are they carried Bd on their skins, and when they found their way into the water they passed on the disease to local amphibians.*

*Bullfrogs from North America are another problem. They are farmed in Asia and Central and South America for frog legs—yuck. Turns out bullfrogs are very tolerant to Bd, so they don't get sick but build up large loads of spores. When the water from the farms is released it isn't treated, and the spores can infect native frogs. And some farmed frogs escape and spread the disease that way.*



*Our job is to find as many different species of frogs as we can and bring them back to STRI. The scientists will test them for Bd and if they are sick, try and cure them. If they are healthy, they will breed them in a safe place with no Bd, and then release a lot of disease-free frogs someday. They will maintain these offspring in a modified ship container at STRI in Gamboa which is kind of a Noah's Ark.*

*This rescue could turn out to be a really big deal.*

#### 4. PREPARING TO GO TO THE DARIÉN

In the late afternoon Wheaton's parents return from Panamá City, and Ariella is dropped off by Carlos and Oris.

"You made it, Mother. How are you?" Auntie Bianca gives Ariella a big hug and keeps asking questions without taking a breath. "Did you meet these people from STRI? Is this a safe mission to go on?"

"Maybe we should let Ariella unpack," Uncle Alberto suggests. "I am sure she can answer all our questions over dinner."

"No worries. Yes, I did meet the folks at STRI, and because this trip is under their supervision," Ariella explains, "we will have to take formal safety training."

"We've already been in the rainforest. We know what to expect," Wheaton blurts out.

“There’s lots you don’t know.” Auntie Bianca is fabulous and super brainy. She has the focus of a high-powered telescope, so there’s never any escaping the list of all potential problems. “Like, what to do if you are bitten by a snake.”

Max looks up from his tractors. “Did you know a viper is a type of snake?” He’s quite a fact machine.

“That’s right, honey,” his mom says before turning back to us.

“It’s the rainy season. What do you do if it floods?”

“You might need an ark. Oris has an ark.” More input from my little cousin.

Auntie B gives us a piercing look. “How do you avoid insect bites?”

At the mention of insect bites, we both start scratching. I guess we haven’t figured that one out yet.

Wheaton throws up his hands. “I get it. We’ll report for basic training in the morning.”

“Good. That’s settled. And remember that you need to stay together and listen to the adults—”

“We promise,” I say, even before my aunt has finished talking.

Ariella takes over, providing more detail about what to expect. “The Darién team will include the three of us plus Oris and Carlos and a guide from one of the Emberá villages.”

She shows us a detailed map of where these indigenous people live, not far from the Colombian border. “Our guide comes from a village that sits on the Sambú river.”

Wheaton puts his face almost on top of the map. "I can't see any villages."

"They exist," Ariella says, "but they're so small a satellite map will only pick them up if it zooms in very close. Our hosts will provide basic food and we may have a chance to catch some fish for dinner, but other than that we need to take everything with us."

"Fish? Are we going fishing?" Max comes zooming over.

"No," Ariella tells him. "Wheaton, Stowe and I are taking a little trip. It's only for bigger kids. We'll be back soon."

Max sticks out his lip and stomps across the room.

"Maybe we can bring you something," I offer.

"I'm not talking to you," he yells, as he exaggerates a frown and charges out to the porch.

"Sorry," I say to my aunt.

"Don't worry. He won't stay mad for long."

I start to walk out of the room, but Auntie B isn't finished. "One last detail." She looks in my direction.

"I know. Call my parents for permission."

It's a short call. I explain about the rescue and the related training to my mom's satisfaction. Of course, she isn't letting me off the hook about writing logs as part of my home-school assignments.

"I know. I've written a few already," I tell her. Lucky for me, Wheaton designed a headset that corrects my spelling and grammar when I dictate logs. The search feature helps me find great facts to keep my mom happy.

For the next few days we go back and forth to STRI to get our safety training. It's pretty interesting. They talk about all the things to watch out for and what to do if something bad happens. Wheaton takes lots of notes and seems to be looking up stuff the whole time. At the end he takes a memory stick into the office and gets some notes printed out. Wonder what that's about? I'm guessing he's worrying about something, since his leg is doing its shaking dance.

Ariella has told us both to make sure we shower tonight. Might be the last one we get for a while. Wheaton's gone first and through the open door I can see that he's left his notes on his nightstand. I notice he titled the briefing page, "Things to be scared about." Sitting down on the floor I look through his list.


Phew. I heard all that stuff too, but when you put it down on paper it does sound a little scary. But really, how much can happen to one person...?

### Safety Briefing for Trip to the Darién

Or

#### Things to be scared about

1. Fer-de-Lance. A pit viper & the most dangerous thing out there. Can be huge—up to 6 feet long and can weigh 13 pounds. Most active at night & hides under leaf

litter. Sometimes can be found in trees. Not interested in humans—rats and mice preferred prey. If surprised, can get defensive & attack. Venom is  toxic. If bitten by one of these snakes, get to a hospital FAST. There are other dangerous snakes like the Coral snake, the Eyelash viper and the Bushmaster snake.

2. Biting Ants. Bullet ants are an inch long and when they bite it feels like you are being hit with a bullet. Acacia ants help the trees but they are big biters too. They are only 1/8 inch-long and they live in acacia trees. Best to steer clear.
3. Scorpions—16 species of scorpions in Panamá. None deadly. Worst one is called the Colombian scorpion; Latin name *Tityus pachyurus*. If stung, wash with soap and water. Take Benadryl (or another antihistamine) and acetaminophen.
4. Big cats. Three big ones—Ocelot, Puma and Jaguar. Two smaller ones—Jaguarundi and Margay. Probably won't see any. If we see a big cat, don't disturb if it doesn't see you. If it sees you, DON'T MAKE EYE CONTACT.
5. Disease—malaria. We are taking pills.

Diarrhea—we know to be careful with what we eat. And I will bring my laser-sterilizer.

6. Water issues—Don't get vehicle stuck!!!  
Flash floods (make sure HeliBoaJee in boat form if it rains.) Area around waterfalls slippery.

## 5. ARRIVING AT THE EMBERÁ VILLAGE IN THE DARIÉN

The sun rises around 6:00 AM. I'm up and ready to go. Peering into the boys' bedroom, I can see that Wheaton's bed is empty. I head to the kitchen and grab some breakfast.

"Good morning," Ariella says. "Come join us."

She and Wheaton are eating bananas. "Make sure you eat a few. They'll help keep your electrolytes in balance."

She doesn't have to ask twice. I never had any bananas in Vermont that tasted so good.

"And make sure you hydrate before we leave." Ariella says. "Wheaton, did you pack the laser-sterilizer? There won't be any bottled water where we're going."

"Oh yeah. You know my mom wouldn't let me forget it." Wheaton's dark brown eyes twinkle.

As we finish breakfast, the rest of the household comes



alive. “Don’t leave without saying goodbye,” Max hollers as he barrels in, still in his Monster Truck shorty pajamas. Wheaton’s parents join us too.

“Of course not,” I say as I lift him up for a kiss and a hug.

Auntie Bianca and Uncle Alberto help us get everything packed into the HeliBoaJee.

Wheaton reviews the list of supplies and equipment with Ariella.

She double checks to be sure we have our satellite phone for emergencies. “We’ll have spotty cell service, so don’t count on regular communication.” That’s code for telling her daughter to avoid imagining a catastrophe if she doesn’t hear from us.

Then Ariella looks in our direction. “Extra batteries?”

We give her a thumbs-up.

“I think we’re all set,” she says.

We wave goodbye and take off in Jeep mode to pick up Oris and Carlos.

The college students are waiting for us with a couple of duffel bags full of gear for the field work, and their personal backpacks. They seem to like those tall rubber boots.

Wheaton jumps out first and, using his great spatial relations, gets everything packed away. Then he converts our vehicle back into Heli mode.

Carlos pats Wheaton on the back. “I still can’t believe you created this.”

Wheaton shrugs off the wonder boy treatment. "It's not raining now. Let's get going."

Ariella is in the pilot seat, and Wheaton takes the navigator position. I pile in the back with the students.

"Sorry"—he looks at us—"but it might be a bit of a tight squeeze for the three of you."

"No worries. We didn't eat a big breakfast." Carlos sucks in his belly to make his already thin body look even skinnier.

Oris laughs and puts her arm around me. "We don't mind a little togetherness."

Once we're all belted up, Wheaton gives Ariella the coordinates for the flight. "The fastest way is over the Pacific, but looks like storm clouds if we go that route. Let's fly right down the spine of the country."

"You call that the isthmus," Ariella says, as she powers up. We're on our way.

Carlos is looking down. "This is the way to travel. See that road? That's the Pan-American Highway."

A while later Oris points below. "There's Yaviza, the town where the road ends. Unless you want to hike, there is no way to get from there to where we are going, except with your HeliBoaJ..." She reaches forward and gives Wheaton's shoulder a squeeze.

Ariella turns us in the westerly direction toward our destination in the Emberá-Wounaan *Comarca*—the region where these two groups of indigenous people live.

"The town of Sambú sits at the junction of two rivers,

the Sambú and the Sábalo,” Wheaton says. “We could land there on the paved runway and get the HeliBoaJee over to the river. Then we can make our way to the village.”

“I like the idea of landing on a hard surface,” Ariella says, as she banks the HeliBoaJee and brings us down. Our grandmother may remember hearing about the time Wheaton and I landed on a too-soft bog in Indonesia.

Once on the ground, Wheaton retracts the rotors and landing skids and engages the wheels. We’re now in Jeep mode for the short drive to the banks of the Sambú River. Ariella puts us in gear and, with Wheaton’s directions, gets us to the water’s edge.

We put on our life jackets and step out as Wheaton performs one more conversion, this time into the Boat form.

“What’s that tank for?” I point to a big metal cylinder strapped to the back of our craft.

“Oh. A methane generator, in case we run short of fuel. I’ve seeded it with some garbage with the right microbes. I’ll fill it as needed, but it’s only for emergencies.”

No time for a science lesson now. I’ll find out more about this later.

We push the HeliBoaJee into the water. Carlos and Oris secure it while the three of us climb in. They step in last and push off. Wheaton assumes the helm and steers us south toward our destination.

We’ve been winding our way along the river for thirty minutes when in the distance we see a clearing and what looks like a village.

“Is that it?” Wheaton’s low pitch has a disappointed ring to it. Not sure what he was expecting. A megalopolis?

“Sí. Here we are,” Oris confirms.

Wheaton pulls up to the riverbank just as the skies open. That doesn’t stop the locals from running out to see who’s in this strange boat.

“Let me go out first,” Carlos suggests. “They know we are coming, just not in this vehicle.”

He jumps down and walks over to a guy who looks forty-ish—my dad’s age. He’s short with slick black hair peeking out of a black felt hat with a white ribbed ribbon wrapped around it. He’s wearing a red and black vertically striped shirt, kind of like a referee back home. They shake hands, and Carlos beckons for the rest of us to join him.

“This is Luís Berrugate. He will be our guide and host. He speaks good Spanish, but no English, so Oris and I can translate for you.”

“¡Buenas! Gracias por su hospitalidad,” Ariella says. “Le presento a mi nieto Wheaton y mi nieta Stowe.”

“¡Buenas, buenas!” I say.

I hear Wheaton whisper “¡Buenas, buenas!” He can be pretty shy sometimes.

Luís beckons for us to follow him. The village has quite a few huts called *tambos*, I’m guessing at least twenty-five. They are all built on stilts to avoid flooding, and the thatched roofs of palm leaves are cone-shaped. The *tambos* are partly enclosed, with what look like three-foot openings on a couple of sides to let the air flow through. I wonder if there’s netting to keep unwanted visitors out. I also notice

a few really tiny enclosed huts sitting on concrete pads that are even higher off the ground. Maybe they are for single people.

Children are playing at the river's edge, laughing and squealing like kids everywhere. There are some women dressed in bright, colorful skirts weaving baskets.

"Those baskets are works of art," Ariella tells us.

We see some men fishing from dug-out canoes, and off in the distance people working on what looks like a banana farm.

"Some time ago we arranged for Luís to be our guide," Oris tells us. "The Emberá think we're a little crazy worrying about these frogs. They are more concerned with saving their forests—the place that supports their entire way of life. Scientists have been working with this community to study changes in their environment, so they trust us and are willing to help, even if they think frogs are no big deal."

Carlos and Oris unfold a map and review different locations with Luís. They are speaking really fast, but I do pick up the word *noche*, which I know means night.

When they are done Carlos and Oris lay out the plans.

"We will have the rest of the afternoon to get organized," Oris tells us. The villagers are letting us sleep in a *tambo* reserved for visitors. Luís says the best time to find frogs will be at night, so after dinner we will go on our first collecting trip."

"I am going fishing with Luís' son. Want to try your hand at it?" Carlos has a grin on his face. Something tells me this isn't the usual hook, line and sinker approach...

## 6. FISHING ON THE RIO SAMBÚ

“Fishing? Sure,” I say, glancing over at Wheaton who is silent as a clam. “Come on. It’ll be fun.”

“I don’t know,” he says. “That water is so brown.” He wrinkles his nose. “We could fall in. Who knows what’s in there.”

“The *piraguas* are very stable.” Carlos points to the dug-out canoes.

Wheaton takes a deep breath. “Okay, but we have to wear our life jackets.”

Ariella’s been listening. “That’s a good idea, kids. And you better put on sunscreen.”

“Why? It looks like it’s about to rain.” I don’t usually think of our grandmother as the overprotective type.

“Oh, it will rain, off and on all the time. But we’re not far from the equator, and you can get burned, even when it’s

cloudy. Especially you, missy, with your fair skin.”

“Got it. Sunscreen at all times.”

Carlos has been listening. “One thing about sunscreen and bug spray, they are bad for amphibians. Make sure you wash your hands well before we go looking for frogs.”

“Got it,” I say. If only my skin was more like Carlos and Wheaton’s.

I know he wasn’t putting me down, but it’s time to change the subject. “Ariella, are you coming with us?”

“No. I’m going to work on that article I’m writing. You go get us something good for supper.”

With that we race ahead of her and up the ladder to stash our gear in the guest *tambo*. As we come back down, we hear a cry.

We look in the direction of the voice and see our grandmother on the ground, her leg twisted in an unnatural position.

“Oh no, Ariella are you okay?” Wheaton dashes over with me right behind him.

“Darn it, I’m such a klutz. My foot got caught on that tree root. I’m fine, but Stowe, please take my pack and Wheaton, give me your hand so I can get up.”

We do as we’re told but as Ariella tries to put weight on her leg, she winces.

“Oh boy,” she mutters. “I’m sure I’ll be okay in a couple of hours, but no way can I make it up there right now.” She points to the *tambo* ladder.

Seeing what's happened, Carlos and Oris have joined us.

"Anything we can do? Oris asks.

"Yes. I don't think I can climb any ladder right now. Could you please go and ask Luís if there is some place I can go for a few hours?"

"Of course, I'll be right back," Oris says.

A few minutes later she returns with Luís and his wife, Evelina.

"They have suggested that we get you to the schoolhouse where you can rest. Later you can decide if you have the strength to go up to the *tambo*," Oris tells Ariella. "It's close by but Luís and Carlos will help you get there."

"Gracias," Ariella says.

She puts one arm around each man and they pretty much carry her to a concrete building not far from where the fall happened. We follow behind with her gear.

"This is the school," Oris explains, "but now is summer vacation so you can use one of the rooms as long as you need to."

We help Ariella get situated and once her leg is propped up, she sighs, rubbing her ankle. "Kids, I'll be all right. Go with Carlos and catch us some dinner."

"Are you sure?" I ask. It doesn't seem right to leave her.

"Positive. There's nothing you can do for me at this point."

Wheaton doesn't move. He wrinkles his eyebrows and tilts his head, locking eyes with our grandmother.



"Don't worry. I'll be fine. Now get going, the both of you."

It's clear Ariella wants to work this out without our help, at least for now. So we go off with Carlos in search of Luí's son Martín.

"There he is." Carlos points to a boy, around fifteen, standing at the bank of the river. He's taller and skinnier than his dad. He's got on a green baseball hat and sort of matching t-shirt, and camouflage shorts.

We follow Martín to the *piragua* and he steadies it while we climb in. After pushing off he stands up and uses a large pole to move us out onto the river.

"You are now going to see what a real fisherman does," Carlos says to us.

Martín hands Carlos the pole while he puts on a face-mask and grabs a spear. With little warning he dives into the water and disappears.

"How long is he going to be down there?" Wheaton asks. "Are there things out here to worry about?"

"There can be *cocodrilos*..."

"Crocodiles?" Wheaton hisses.

"Sí. But you can see them coming." I don't know if Carlos is messing with us, but Wheaton squirms in his seat.

I figure Martín knows what he's doing, but it's starting to seem a little long to me too.

The two of us shift from side to side looking into the murky water. We glance at Carlos, who doesn't seem worried.

I'm about to ask how long you wait before diving in after the guy when we see a fish on the tip of the spear, followed by Martín's arm and then his whole body.

"Cena," he shouts.

"Dinner," Carlos translates.

We stay out on the river for a while as Martín spears a few more fish. Then he ferries us back to the shore. "*¿Te gusta el cangrejo?*"

"He wants to know if you like crab," Carlos tells us.

"Mmm. Love it," I say.

"You do? So you gave up skiing and being a vegetarian?" Wheaton always has to comment on my dietary habits.

"I still don't eat meat, but I've started eating fish and seafood. You can call me a pescatarian, wise guy."

We follow Martín to the shoreline. He takes the pole and shows us how to dig into the riverbank for crab.

"There's one." I bend down to pick it up. Martín reveals some more. We get them and the fish loaded into a couple of pails. I help clean the fish. Wheaton has conveniently walked off to check on something in the HeliBoaJee. I chase after him with the guts—good fuel for his methane generator.

Martín's mother, Evelina, has a clay pot already on an open fire in the middle of the *tambo*, and we add the fish and crabs for the evening meal. She is so pretty. Her hair is black, like everyone else's—long and pulled tight behind her ears. Her hot pink-colored shirt sets off her huge almond-shaped brown eyes.

“We better go check on Ariella,” Wheaton says.

We tell Carlos that we are heading to the school, and dash down the ladder.

The school is this simple concrete building. It isn’t cool looking like the *tambos*, but I guess it’s built this way to withstand flooding. We push open the heavy front door and head to the back of the building where we left Ariella a few hours ago. The place smells. Maybe from the moisture on those concrete walls.

We find our grandmother sitting with her leg stretched out on an adjoining seat.

“How are you doing?” Wheaton asks.

“Not great,” Ariella admits.

“Do you think you broke a bone?” Wheaton wrinkles his forehead and looks at her. The guy does have the kindest eyes.

I sit down on the floor to take a look. Not that I’m a doctor, but I’ve had plenty of spills on the ski slopes, so I know some of the questions to ask. “It’s pretty swollen. Can you bend it?”

Ariella moves her foot a little in all directions, wincing when she makes certain motions.

“I don’t think it’s broken,” she says to us. “But I’m not going to be able to get to the *tambo* anymore today. Besides, there is no way I can go up and down to the toilet.”

Those little huts I thought might be for “singles” turn out to be compostable toilets. They’re more than five feet off the ground, so I see Ariella’s problem.

"The school has a squatting latrine outside the back door. It won't be easy, but I can manage. Hopefully by tomorrow morning I'll be able to resume normal activity."

"You could use an ice pack, but I don't think we'll find any here," I say. I bring over a crate that's standing at the side of the room. "Maybe this will work better for propping up your leg."

Wheaton helps Ariella get positioned so she's a little more comfortable.

"Can we bring you some dinner?" I ask. "Evelina's making a stew from the fish Martín caught and the crabs we dug."

"I'm not very hungry. Just bring me a small plate when you're done."

Wheaton's been quiet. He spends a lot of time with Ariella and knows how unusual it is for her to give in to anything. "Luís said that we should go on our first frog collecting trip tonight. Sounds like you can't go?"

"Afraid not."

"Do you mind if we go with the others tonight? We promised them the use of the HeliBoaJee to move around out here. No way they can take it without you or me."

"I guess that's the way it will have to be," she says. "I'll see you both after dinner. We'll discuss the evening plans more when you return."

"Rest up." I lean over and give our grandmother a kiss.

"Love you," Wheaton says, as we leave.

The family members are already seated on pieces of tree trunks that serve as stools. They gesture for us to join them

at the table. Oris explains that Evelina and Luís have three children. Martín our fisherman, Teresa who's around our age, and one little boy, José, who's six or so—about Max's age. We all get plates of the delicious fish and crabs, along with a big helping of plantains and something that looks a little like an empanada.

“¿Que es?” I ask.

“*Carimañola*,” Carlos says. “So good. It's mashed yucca stuffed with meat.”

This is going to be tricky. I don't want to be rude, but not sure I can eat this. Maybe I'll nibble the end and avoid the stuffing. Anyway, best to change the subject. “This fish is so great. Please ask them to tell us what it is, and let Evelina know it is so good.”

Oris turns to the family and fulfills my request.

“*Gracias*,” Evelina says.

Then Luís cracks up. “*El pez se llama berrugate como nuestro apellido*.”

“*Es un pez muy feo*.” Martín says, joining in the laughter. “*Cuéntales la historia del pez berrugate*.”

Oris tells us, “The name of the fish is berrugate like their family name. Martín says it is an ugly fish. He has asked Luís to tell us a funny story about the fish.”

Luís proceeds, with lots of hand motions. Everyone is laughing.

“Let me give you the short version.” Oris begins.

A woman and her maids were shopping for fish to make ceviche, a popular dish of marinated raw fish. They came to a stand at the market and asked for sea bass. The fisherman who ran the stand said he only had berrugate. He told the ladies it was better for ceviche and less expensive, only 60 centavos per pound. (That's around 60 cents in U.S.A. money.) The woman said, "No. The berrugate is ugly and disgusting." After the three women left to look for sea bass, the fisherman filleted the unappreciated berrugate. The women were unable to find a sea bass, and they came back past the fisherman. He stopped them and said, "You are in luck. I found these fresh sea bass fillets." The woman asked how much per pound and the fisher responded, "for you, five dollars."

Oris repeats the punch line in Spanish, "*para usted, cinco dólares.*"

Everyone claps knowing that we are now in on the joke. After that the meal continues. Luís passes Wheaton a glass of water. "Don't drink it," Carlos warns.

"I know," he says, whipping out his tool. In no time the laser causes the water to boil. "Who else wants some hot water?"

Evelina brings over some dry leaves. "¿Quieres té?" she asks.

I look at Oris.

“She’s offering you some tea.”

“Oh, sure.” The family may know why we’re boiling the water, but no reason to hurt anyone’s feelings. I take the leaves and let them steep in my cup. It tastes good enough.

We finish up. Luís looks at his watch and says something to Oris and Carlos.

“Luís wants to leave in about an hour, so let’s go back to get our gear,” Oris says. “We brought boots for the two of you. Where we’re going there will be lots of water.”

## STOWE LEBLOND'S LOG

Darién, Panamá

December 7

6:30 PM

*We're staying in the Darién Gap at the southwestern tip of Panamá that borders on Colombia. There are no roads down here and the population is very small. Most of the people are from one of two indigenous tribes, the Emberá and the Waounan. There are seven different groups of native peoples in Panamá. They represent about 12% of the total population. We are staying in an Emberá village. These people have lived in this region for many thousands of years.*

*The locals really know how to fish. Martín fishes with a spear, almost like a harpoon. It seems big for a regular-sized fish, but it works. Along with fish, plantains are central to people's diet. They eat a lot of other things from the jungle—fruits, hearts of palm, roots and tubers. They set traps for birds, wild boar and other animals. I'll stick to the fish, fruits and veggies.*

*When you live this close to a river, and you are in the tropics, the rainy season means a risk of flooding. That's why the houses are built on stilts. It also helps keep nasty insects that nest in the grasses from invading. There is no indoor plumbing, but the village received a grant a few years ago to build composting toilets. They're designed so you can pee and poop in them, and with some treatment the waste turns into compost over time. Same principle as our garden composter. To protect against being flooded, that's*



*a gross thought, the toilets are built on concrete blocks and are elevated more than five feet off the ground. There is one building in the village that isn't elevated—the school. It's made of concrete with an aluminum roof. I hope the kids can concentrate when it rains. The government built it, and while it's probably sturdier than the tambos in a storm, it seems almost out of place in this rainforest.*

*The forests in the Darién are full of magnificent tree species. Some of the trees, like the cocobolo (Latin name Dalbergia retusa) are spectacular and worth tons of money for furniture. It is illegal to take these trees unless they are already dead on the ground, but that doesn't stop some people. The Emberá value these trees, which have supported their lives for many generations. They seem happy to have us here, since they know we care about the environment.*

*I noticed that people have what look like tattoos all over them. Ariella told me this is a form of body painting that is traditional for the Emberá. They use the juice of the jagua fruit as the dye for this art form. The good thing is it's temporary. It only lasts around two weeks, so if you don't like it you can wait, and it will wear off. Then you can get another one.*

*The Emberá speak Spanish, but they also have their own native language which is completely different.*

## SPANISH ENGLISH GLOSSARY OF PHRASES

Spanish	English
<i>Adiós</i>	Goodbye
<i>Ah-cheh, beh, hota</i>	HBJ
<i>Aquí</i>	Here
<i>¡Bastante impresionante!”</i>	That is pretty impressive!
<i>Bien</i>	Okay
<i>Bueno</i>	Good or okay
<i>Buenos Días. ¿Qué tienes ahí?”</i>	Hello. What do you have there?
<i>¡Buenas! Gracias por su hospitalidad.</i>	Hello, thank you for your hospitality.
<i>Comamos</i>	Let's eat.
<i>Comarca</i>	Region
<i>Cómo</i>	How
<i>¿Cómo hiciste?</i>	How did you do that?
<i>¿Cómo se dice?</i>	What do you call this?
<i>¿Cuál es?</i>	Which is it?
<i>Cuéntales la historia del pez berrugate.</i>	Tell them the story of the berrugate fish.
<i>Cuídala.</i>	Guard her.
<i>Deténgate aquí.</i>	Stop here.
<i>¿Dónde está el nido?</i>	Where is the nest?
<i>¿Dónde está Teresa?</i>	Where is Teresa?
<i>¿Dónde quieres el tatuaje?</i>	Where would you like a tattoo?
<i>El cocodrilo</i>	crocodile

<i>El pez se llama berrugate como nuestro apellido.</i>	The fish is called berrugate like our name.
<i>El río continúa a subir.</i>	The river continues to rise.
<i>Entonces, hablaremos español juntos.</i>	Then we will speak Spanish together.
<i>Es hora de irnos.</i>	It is time to go.
<i>¿En inglés se dice—WOW?</i>	In English you say—WOW?
<i>¿Es legal?</i>	Is it legal?
<i>Es la hora del almuerzo.</i>	It is lunch time.
<i>¿Es necesario? Apúrate.</i>	Is that necessary? Hurry up.
<i>Es posible que tengamos irnos.</i>	We may have to leave.
<i>Es un pez muy feo.</i>	It is a very ugly fish.
<i>Es una mariposa morfo.</i>	It is a morpho butterfly.
<i>Eso es mío.</i>	That is mine.
<i>¡Espera!</i>	Wait!
<i>¿Está bien?</i>	Is that okay?
<i>Este es nuestro árbol nacional, y le llamamos árbol Panamá.</i>	This is our national tree, and we call it the Panamá tree.
<i>Estos gatos están en peligro de extinción.</i>	These cats are critically endangered.
<i>Estos son un regalo. No hay costo.</i>	These are a gift. There is no cost.
<i>Gigantesco</i>	Gigantic
<i>Gracias por la ayuda.</i>	Thank you for your help.
<i>Gracias por toda la ayuda.</i>	Thank you for all your help.
<i>¿Habla inglés?</i>	Do you speak English?

<i>Hablo only un poco español.</i>	I speak only a little Spanish.
<i>Hasta mañana.</i>	Until tomorrow / See you tomorrow (colloquial).
<i>¿Hay más?</i>	Are there more?
<i>Hola. ¿Dónde está el paciente?</i>	Hello. Where is the patient?
<i>La caca</i>	poop
<i>La cena</i>	dinner
<i>La chica</i>	girl
<i>La Madre Poderosa</i>	Powerful Mother
<i>La noche</i>	night
<i>Las piraguas</i>	Dugout canoes
<i>Le presento a mi nieto Wheaton y mi nieta Stowe.</i>	This is my grandson Wheaton and my granddaughter Stowe.
<i>Los árboles son importantes para el secuestro de carbono.</i>	The trees are important for carbon sequestration.
<i>Los cayucos</i>	canoes
<i>Los Doce Molinos</i>	The Twelve Windmills
<i>Los niños me van a dar problemas.</i>	These kids are going to give me trouble.
<i>¿Luis, qué pasa?</i>	Luis, what's happening?
<i>Me alegro de que estés aquí.</i>	I am so glad you are here.
<i>Muchas gracias.</i>	Many thanks.
<i>Muéstrame las fotos que acabas de tomar.</i>	Show me the pictures you just took.
<i>¡Muy chévere!</i>	Very cool!
<i>No comprendo.</i>	I don't understand.
<i>¡No dejes a esta chica fuera de tu vista otra vez!</i>	Don't let this girl out of your sight again!

<i>No hay problema.</i>	No problem.
<i>No más.</i>	No more.
<i>No te vayas muy lejos .</i>	Don't go too far.
<i>No tomará mucho tiempo.</i>	It won't take long.
<i>Para usted cinco dólares.</i>	For you five dollars.
<i>“¿Por qué saliste del pueblo, niña tonta?”</i>	Why did you leave the village, stupid girl?
<i>PROYECTO REDD—LA PARCELA 123</i>	REDD PROJECT—PLOT 123
<i>¿Quieres té?</i>	Do you want tea?
<i>Ranas! Ranas!¿Ahora? ¿Y que tienen de importante las ranas?”</i>	Frogs! Frogs! Now? And what is so important about frogs?
<i>Río Sambú</i>	Sambu river
<i>Sí.</i>	Yes.
<i>Sí. Azul por un lado. Marrón por el otro.</i>	Yes. Blue on one side. Brown on the other.
<i>Siéntate.</i>	You sit down.
<i>Siéntate. No hay culebras.</i>	You can sit down. No snakes.
<i>Silencio.</i>	Be quiet.
<i>Tatuaje</i>	Tattoo
<i>¿Te gusta?</i>	Do you like it?
<i>¿Te gusta el cangrejo?</i>	Do you like crab?
<i>¿Terminaron?</i>	Are you finished?
<i>Tienes razón.</i>	You got that right.
<i>Tíralo al guiso.</i>	Throw it into the stew.
<i>Un jaguar se comió una buena cena.</i>	A jaguar had a good dinner.

<i>Un perezoso</i>	A sloth
<i>Uno punto dos metros</i>	1.2 meters
<i>Vamos a mostrarles a todos tus tatuajes.</i>	Let us show everyone your tattoos.
<i>Ven a ver el tatuaje de Stowe.</i>	Come see Stowe's tattoo.
<i>Ven rápidamente. Le han disparado a una águila arpía.</i>	Come quickly. A harpy eagle has been shot.
<i>¿Viste la cosa azul y brillante que pasó volando?</i>	Did you see that shiny blue thing fly by?

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