

The Savegre: A Model of Sustainability

by

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Part I – The Most Spectacular Spring Break Ever!

Narrator: A group of college students gather to discuss their upcoming spring break.

Gregg: Bora Bora!

Narrator: Four faces quickly pan across the table like heads at a tennis match.

Elizabeth: Bora Bora?! We said affordable! How can we manage a place like that for spring break? We're poor college students!

Gregg: You said tropical, didn't you? My doctor just got back from there. He loved it.

Elizabeth: Your doctor?

Narrator: Elizabeth winces as she puts down her cup of coffee.

Elizabeth: Enough said.

Ramon: We don't have to decide today. Why don't we take a little time to think about it? We still have five weeks before spring break.

Naty: Good idea. Let's meet back here at the coffee shop in a week with ideas for the most spectacular spring break ever!

Ramon: Extreme sports!

Carter: Hold on, wild man, we have to survive this trip. I plan to graduate and tell my grandkids about it.

Elizabeth: Sounds good to me. As long as I get to see animals!

Narrator: The next day, Naty goes to the library to check out an article Elizabeth suggested reading for their ecology class. Elizabeth has told Naty that she was hoping to incorporate ecotourism into their spring break plan. After finding a quiet place to read, Naty soon becomes engrossed in the story of Efraín Chacón and a Professor Finkenbinder.

She reads about Efraín's journey on a game trail that ventured off of the Pan-American Highway into the valley of San Gerardo de Dota. He followed the Savegre River (sub-VAY-gray) in Costa Rica. Naty is so captivated by the story that she doesn't even notice Ramon sit down across from her.

Naty: Hmmmm. No way! Whoa!

Narrator: Naty begins to mumble as she reads the article.

Naty: I hope I can meet a man like Efraín someday. What a brave guy!

Narrator: Clearing his throat and with his best Hispanic accent, Ramon breaks his silence.

Ramon: Hola, my name is Señor Efraín...

Naty: Don't interrupt me! I just got to the part about the resplendent quetzal.

Ramon: The what?

Naty: The quetzal! The national bird of Guatemala that almost went extinct. Ramon, it's unbelievable. Has Elizabeth mentioned any of this to you?

Ramon: Mentioned what?

Narrator: Naty goes on to describe the incredible story of Efraín Chacón.

Naty: In 1954, Efraín hiked down through the cloud forest, searching for a place to build his family's home. His first house was a cave under a huge boulder. He settled in and started a dairy business in the Savegre valley.

Narrator: Naty returns to reading the article silently.

Ramon: Well... what happened next?

Naty: Efraín didn't stop with dairy farming. In addition to raising cattle, he made a pond off of the Savegre and stocked it with rainbow trout.

Ramon: Fishing! I didn't know they had trout in Costa Rica.

Naty: Efraín erected a fishing camp of rustic cabins for tourist fishermen. Then in 1977, he began growing a type of apple that tasted and sold better than others grown in the country. Soon the family Chacón became one of the leading agricultural innovators in Central America. Can you believe they started out with nothing? With Efraín's innovations, the dairy farm crept up the mountain to span 80 acres. The craziest part is that they cleared all that forest using axes! Back then, the trees were so large that only two or three would fit on the log trucks making their way down the new Pan-American Highway. I wonder how many it would take to fill a truck now that so many of the large ones are gone.

Narrator: Naty pulls out her laptop, Googles the Savegre, and becomes excited.

Naty: Look at this! There's a place we can stay called the Savegre Hotel Natural Reserve and Spa. It looks like it's run by Chacóns! Check out these amazing reviews.

Narrator: After looking at some incredible pictures that a "Felipe Chacón" had posted, they return to reading the article.

Naty: It says here that in 1982, a man from the United States, Professor Finkenbinder, arrived in the valley with students to study the cloud forest. He quickly became friends with the Chacón family and learned of their livelihood. The Chacóns were excited to share their new plan to triple the size of the dairy with Dr. Finkenbinder and his students. As an ecologist, he realized the immediate threat to this unique cloud forest ecosystem, including the resplendent quetzal, a threatened species in Central America.

Ramon: There's that strange word again; I thought being bilingual was going to help on this trip!

Narrator: Naty laughs, and they both agree that the story of San Gerardo de Dota is drawing them in to see what this vacation destination has to offer.

A week later at the coffee shop, the conversation gravitates back to the topic of a spring break destination. The students have narrowed their choices down to options that are somewhat exotic, but still have safe drinking water. And, of course, it has to be affordable! After Naty shows the group the Savegre website, the decision is made.

Naty: This is great! We can hike primitive trails and look down at the clouds rolling in!

Elizabeth: That sounds cool!

Carter: You're right about that—we'll have to pack jackets. The temperature can dip down into the low 50s during the night.

Elizabeth: There's horseback riding!

Gregg: I can almost taste all of the fresh fruit!

Ramon: I have to zip line. It's on my bucket list!

Narrator: *The friends talk over one another like a group of excited school children.*

Carter: There's even a field station so Elizabeth and Naty can be right at home! They call it QERC.

Gregg: QWERRRK? Sounds a little quirky to me!

Ramon: And all this where there used to be a dairy farm?!

Narrator: *Ramon and Naty give their friends a few more websites to look at to prepare for their trip to San Gerardo de Dota, Costa Rica. As they part ways for class, Elizabeth smiles to herself.*

Elizabeth: Pura vida!



Questions

1. What types of outdoor activities would you want to do during a tropical spring break?
2. What steps would you take to transform the dairy farm to an ecologically sustainable industry?
3. What does “pura vida” translate to, and what does it mean to Costa Ricans?

Assignment

Finish reading the rest of this case study on your own. Also read “The Chainsaw and the White Oak: From Astrobiology to Environmental Sustainability” (2001) by E. Neuenschwander and L. Finkenbinder. This article can be accessed at http://digitalcommons.olivet.edu/biol_facp/1/.

Part II – San Jose

After arriving in San Jose, the students checked into Hotel Don Carlos, a quaint little inn rich with the history and culture of Costa Rica. Carter, Ramon, and Elizabeth were instantly drawn to the art and architecture that spanned from floor to ceiling.

“Hola! Only staying one night? Where are you kids off to tomorrow?”

Looking back they saw a smiley, smallish man leaning out of the concierge window. He introduced himself as “Steve.”

“The Savegre, in San Gerardo de Dota,” Elizabeth responded.

When Steve asked how they found out about the Savegre, Elizabeth mentioned the article she had read in her ecology class that sparked the idea for a spring break destination. “We thought the area had all the makings of adventure and exploration that appealed to each of us. And the funny Finkenbinder name kind of stuck.”

“The Finkenbinders?” Steve exclaimed, “I know them well! Leo y Zana. Why, Zana stayed here for months at a time while building the research station, QERC. Leo came back and forth with groups of students. They would stay here at the hotel for the first night and then camp in the valley for two weeks. During their stay, the students spent time researching plants, animals, temperature, and rainfall in the cloud forest. In addition to helping students with their studies, Leo has spent the last 30 years researching the quetzal. Have you ever seen a quetzal?”

“Seen one?” Carter exclaimed, “We have plenty of pretzels in United States!”

“The quetzal is an endangered bird, knucklehead,” Elizabeth chided, “but no longer as endangered in Costa Rica because of the Finkenbinders and Chacóns.”

“Carter, didn’t you read the article we told you about?” Naty asked impatiently. “Don’t you realize that an endangered species is in a precarious position? With a decrease in population comes a decrease in the gene pool. The bird could easily become extinct, and that could change an entire ecosystem—food chains, nutrient cycles, and more!”

“Sometimes I don’t get you non-bio majors,” Elizabeth said as she grabbed her suitcase and headed to her room.

Steve called for Bernardito to get the bus prepared for the next morning. They needed an experienced driver to take them through the Talamanca Mountains, over the Cerro de la Muerte, “the Mountain of Death,” into the valley of San Gerardo de Dota.

“Well then, get some sleep,” Steve said chuckling. “Your bus will be ready before you are. Breakfast is served at 7 *en punto*. Hope you will enjoy our *gallo pinto*!”

Questions

1. What impact does being endangered have on the future of that species? What impact does this have on other components of the ecosystem?
2. Between commercial logging and land cleared for the dairy and orchards, what parts of the ecosystem may have been affected?
3. How do you think deforestation affected the water cycle?

Part III – San Gerardo de Dota

As they pulled up to the resort at San Gerardo de Dota, excited voices echoed throughout the bus leaving Bernardito chuckling.

“Look at the river!”

“And all these flowers!”

“There are the cabinas we read about! We’re gonna stay in one!”

“Did you see that volcano hummingbird?” exclaimed Naty with her nose in her Skutch bird guide. “I have another one to add to my ‘life list.’ All of the birds I’ve ever identified I’ve written down, and I love growing my list with each adventure!”

As Bernardito unloaded their backpacks, Gregg looked up over his shoulder to the steep slope of the mountainside.

“Are those tiny dots up there people?!”

“Wait a minute. That looks like an orchard! Are those apple trees?”

“Ana apples,” Naty confirmed.

“*Manzanas*,” Ramon added.

“*Bien!*” responded Bernardito, as he unloaded the last bag. “All of that land where you see the orchards was part of the pasture for the dairy cows. Most of the forest has grown back. Now the Chacón family uses that land in ways that preserve and protect the cloud forest. I’m sure you will get to learn more about ecotourism on this trip. Let’s get you checked in, *mis amigos*.”

The covered walk to the office was lined with flowers in every color imaginable.

“Succulents!” Naty cried out excitedly as she stooped down to get a closer look. “My favorite type of plant!”

“Are you going to be like this the whole trip? We’ll never get anything done,” Carter groaned jokingly as he pulled Naty by the arm.

After the group checked in and settled into their rooms, they met at the hummingbird feeders near the office to plan out the rest of the day.

“Let’s take some time to explore the resort. Tomorrow we can go zip lining and hiking,” Elizabeth suggested.

“Good idea,” Naty agreed.

“Hey, do you guys see the size of the lenses on those cameras?” Gregg whispered.

As if on cue, one of the heads attached to the long scope turned and exclaimed, “Hola Gringos! What brings you to this area?”

After the students talked about college life, they mentioned their spring break and how the White Oak Model article brought them to the valley. The man looked stunned. Then a huge smile spread across his face.

“How would you like the backstage pass to the rest of the story?”

With all heads cautiously nodding in waves, the man said, “Well then, my name is Marino Chacón, the eldest child of Efraín and Caridad, and you are standing in front of their home. Now about that story...”

Questions

1. In the 1950s, Costa Rica was both geologically and culturally young, with much of the area untouched by humans. What is the ecological significance of Efraín Chacón’s journey into the valley of San Gerardo de Dota?
2. How is the Savegre Resort an example of ecotourism?

Part IV – A “Tail” to Remember

The students recognized Marino by name and asked him what it was like 50 years ago when his family settled the land. Walking up a gravel path, Marino told them about the early years when his dad arrived in the valley.

“In the early 50s he’d lived in a cave, the first mountain home he brought me and my mother to. My mother and I went back to our old home and lived there with my father visiting from time to time.”

Years later when Marino was old enough to help with the farm, his father built a simple house with palm leaves and his mother and siblings made their final move to the valley.

“I missed my friends from school.” Marino said as he looked up the path. “My mom taught us at night and we wrote with charcoal. I remember how excited I was when I got my first pencil! We worked hard, but it was a good time of life for us all.”

As the group continued walking, Marino reminisced about his childhood. “We woke up at 4:30 in the morning to milk the cows and turn them out to graze. Then, we had to gather them again in the afternoon, even in the cold months.”

Marino squinted his eyes, wincing as he looked at the students. Waving his finger back and forth, he whispered, “In these cloud forests, the temperatures can dip down below 50 degrees, but we had no shoes. Sometimes we walked in the stream on the way home because the water felt warmer than the ground!”

Marino continued, “I worked each day beside my father, and we had cleared 80 acres with our axes. Each night we would lay our axes at the base of the first tree to go down the next day. We would have continued if we hadn’t...” His voice trailed off as he looked into the forest.

“Well why did you stop?” Gregg chimed in.

“By 1982, we had planted more orchards, began thinking about more cabinas, and had plans to triple the size of the dairy. We shared those plans with Professor Leo, who had come with students, much like yourselves, to study tropical biology in our valley.”

The students were puzzled for a moment. They then hesitantly asked, “What was Leo’s last name?”

“Finkenbinder,” Marino exclaimed.

Laughter erupted in the students’ voices as they explained that the name had stuck with them after reading the White Oak Model article.

“Ahhh, I see,” Marino smiled. “*Pura vida!*”

Marino continued his story, “For a year after Leo and his students left our valley, they wrote us letters telling us about the intricate nature of ecosystems, our cloud forest, and sustainability. I spoke with Leo on the phone nearly every month. And then it happened.”

Marino went on to explain the pivotal moment that changed everything. While finishing work with his father one evening, they laid their axes at the base of the next tree that would be chopped down in the morning, a large white oak. When they turned to go home for the day, Efraín noticed the lights of the homestead 1000 feet below. Suddenly it hit him. They had cleared all of the land in between. Contemplating all they had learned from Leo and the students, Efraín and Marino questioned the dairy expansion for the first time. Efraín told his son to pick up his ax and that night, they carried them home. Efraín called a family meeting that very night. The family met and voted to proceed with the business in ways that would preserve their forest.

“I called Leo to tell him that we had decided to end the dairy business, move in the direction of ecotourism, and expand the orchards. We began selling off the herd and took down the last fence in 1987. There is a picture of Leo and my father in the QERC building. They are shaking hands at the last gate to be taken down. By then, Leo had spent his

eight-month sabbatical with us and introduced us to his wife Zana. When she visited, they had quite a life changing experience with a bird native to us, but already on its way to extinction: the resplendent quetzal.”

Marino began to slow his pace as he pointed out the QERC. The students had arrived at a large, two story research building.

“The Quetzal Education Research Center was a labor of love for Zana,” Marino explained, “She built lifelong relationships and memories with many of our family in the process.”

The students stopped walking and saw the name on the field station, “Leo and Zana Finkenbinder Hall.”

“Look over there! The iridescent blue-green in that tree with the little green berries!” Ramon exclaimed.

Naty and Elizabeth quickly pulled out their binoculars and Skutch field guide to Costa Rican birds.

When he saw the book, Carter groaned, “You’re kidding! You’ve got one of those just for Costa Rica?”

“Skutch! The best and nothing less! Wait until you see my Mueller’s mushroom book,” Elizabeth gloated.

“Humph! Nothing offends these nerds. I think they like the attention,” said Carter.

“I’m counting on it,” Ramon whispered back to Carter. “Hey, Naty! Can I see your life list?”

While the students were chatting excitedly by the avocado tree, Marino placed the scope on his tripod and focused on the male quetzal.

“See that long tail feather?” Marino asked.

As they took turns peering through the scope, they heard a jovial drawl calling from the porch of the QERC, “Yer lucky he hasn’t dropped that tail feather yet, y’all!”

Marino swung around toward the familiar voice. “Leo!”

As the two embraced, five shocked voices whispered, “FINKENBINDER!”

Questions

1. How might the story have been different if Efraín had owned a chain saw?
2. What factors do you think influenced the decision of the Chacón family to stop clearing their land for more cattle?
3. How was the decision of the Chacón family and their influence in the area an example of sustainability? How did it embody environmental suitability, social acceptability and economic viability? Be specific.

Activities

1. Identify an ecosystem in a specific area of the world where non-sustainable practices are occurring. (Think of some crops; Google for ideas.) Note the latitude and longitude. What are the characteristics of this ecosystem? What are the industries or uses that are threatening the ecosystem?

2. Propose some alternative uses of the ecosystem and potential consequences. How will the people in the area be affected? How can the industry be re-shaped to support the people of the area as well as protect the ecosystem? Include environmental suitability, social acceptability and economic viability.

3. Based on your new understanding of sustainability, what steps would you take to transform an environmentally sensitive area into an area that could ecologically sustain an industry?

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