

BELIZE FOUNDATION FOR RESEARCH AND ENVIRONMENTAL EDUCATION

THE BLADEN REVIEW 2018



Letter from the Executive Director

It gives me great pride to present another edition of the Bladen Review for the many people who share in our mission to “conserve the biodiversity and cultural heritage of Belize.” This is our 5th annual edition, and GROWTH is the best word I can use to describe the past twelve months.

The field station has gone through major physical upgrades, including a state of the art solar system, which provides a renewable energy source for countless improvements around the field station; improved high speed internet; a dedicated classroom/conference room with a comprehensive library; and the completion of the Cacao Discovery Center equipped with a small tree-to-bar chocolate making factory.

Our work with the Hicatee turtle is moving forward at a tremendous pace in several ways: the breeding success at the Hicatee Conservation and Research Center; initiatives to help raise awareness and change people’s attitude towards the species; advocating for better policies to ensure the species’ long- term conservation. BFREE’s Chocolate Forests Initiative to promote organic cacao-based agro-forestry, tropical rainforest restoration, and biodiversity conservation has become a centerpiece for much of the work we are doing, and the research and environmental education programs we undertake often have a strong link to this program. Our outreach and education campaigns continue to expand as we engage more local and international audiences. We continue to offer world-class environmental education programs to high school and undergraduate students from all over the world, and serve as a research site for undergraduate, master’s, and Ph.D. students.

We have strengthened and formed new partnerships with like-minded conservation organizations, including Belize Wildlife and Referral Clinic, the Fine Chocolate Industry Association, Santa Fe College Teaching Zoo, Turtle Survival Alliance, Jacksonville Zoological Gardens, Oklahoma City Zoo, Heirloom Cacao Preservation Fund and University of California at Davis, among others. Along with Belize government agencies and local partners we are helping to establish wildlife and conservation policies to ensure the Maya Mountains remain forested and abundant with wildlife. These are just some of the many activities in which BFREE has been engaged this year. None of this would be possible without BFREE’s incredibly dedicated and talented staff, and I am so thankful and honored to be working with all of them.

The Maya Mountains, our backyard, is considered the largest continuous expanse of tropical rainforest north of the Amazon. Please help us to keep it that way. These rainforests serve as the lungs of our planet, contributing to carbon storage and helping to mitigate the effects of climate change. As the world continues to grapple with the effects of a rapidly changing climate, BFREE’s mission is more important now than ever. Together, we can make a difference.

In stewardship and gratitude,

Jacob A Marlin
Executive Director



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A Dedication to Richard Foster



This issue of the Bladen Review is dedicated to my good friend, Richard Foster. Richard and his lovely wife, Carol, were first introduced to BFREE when it was merely an idea back in 1993. Richard was an enthusiastic and active supporter of BFREE from those early days, sharing his strong conviction that the Bladen Nature Reserve was in desperate need of management and conservation. His firm belief that BFREE and its mission were the only things that would help achieve this important goal was much-needed fuel for and validation of our work. Since those early days, Richard was both a mentor to me, and one of BFREE’s strongest advocates. Whether it was teaching me which woods work best for certain building projects, divulging the location of the only store to get the best durable window screening, lending BFREE its first solar panel in 1995, or providing a resting place at their beautiful home during travel, the Fosters were always there for me, my family and BFREE - unconditionally. Rest in peace Richard, you are forever loved and missed.

A Quick Look Back

2017	JUNE			JULY			AUGUST	
	BFREE chocolate bars are featured at an invite-only press tasting event at the Elevate Chocolate/FCIA event in NYC.	Flagler College in FL run the first field course focused on Hicatee conservation.	78 Hicatee turtles hatch at the HCRC.	For the 2nd year, Heather Barrett contributes annual monitoring data to the international Agami Heron Conservation Working Group.		BFREE co-hosts Belize's first Cacao and Agroforestry Forum.	Documentary film "Hope for Belize's Hicatee" is released at the Turtle Survival Alliance's annual conference.	
OCTOBER					NOVEMBER			500 copies of the Belize Cacao Agroforestry Handbook were donated to farmers.
BFREE and TSA launch Hicatee Awareness Month with over 20 partner events taking place around Belize.			Bird data from BFREE is included in publication on avian population dynamics in the scientific journal, Ecology, by authors Jamie Rotenberg, Pete Marra, et.al.		Jacob Marlin presents on conserving bird habitat via cacao-based agroforestry at the Congress of the MSBC in Costa Rica.	BFREE Board Meeting takes place in Gainesville, FL.		
2018	JANUARY		FEBRUARY					
	Tyler Sanville represents BFREE at the Zoos & Aquariums Committing to Conservation conference in Jacksonville.		Jaren Serano joins the BFREE staff as the new Science and Education Fellow.	Gainesville Brewery, Cypress & Grove, creates a special batch Chocolate Porter using BFREE's cacao.	Turtle Survival Alliance holds its annual board retreat at the field station.	Harpy Eagle sighting at the bunkhouse by Independence Junior College students.		Liz Getman leads first Yoga and Chocolate 'Cacaoga' Retreat at the field station.
16 Field Courses in 2018	MARCH		APRIL		MAY			
	Installation of the new solar power system.	Thomas Pop and Jacob Marlin attend the Mesoamerican Society for Conservation Biology meeting in Belize to present on the HCRC.	Jacob Marlin gives keynote presentation on Hicatee turtles during Herpetological Weekend in Kentucky.		Otterbein students assist in the rehabilitation of an infant howler monkey and help reunite it with its mother.		First recorded sighting in Belize of the Prevost Ground Sparrow by the BFREE kitchen on Global Birding Big Day.	
JUNE			JULY					
Sipriano Canti and Marcos Kuk encounter and photograph a tapir in the Bladen River.			Summer volunteers assist in the care of 180 Hicatee hatchlings.	UF PhD candidate, Nichole Bishop, spends the month of July at the field station to investigate digestive efficiency in Dermatemys mawii.	BFREE's annual staff retreat includes a tour of everyone's favorite hot sauce factory, Marie Sharp's.			
AUGUST			SEPTEMBER		OCTOBER			
Another Harpy Eagle sighting at BFREE, this time by Eyob Solomon of UC Davis.	Parr McQueen, undergrad researcher from University of Richmond, returns to BFREE to continue his study of soil nematodes.	Columbus Zoo and Jacksonville Zoo staff join the bi-annual Hicatee health assessment	Dr. Elliott Jacobson of UF Veterinary School offers professional development to HCRC staff.	2nd annual Hicatee Awareness Month is met with tremendous enthusiasm including dozens of partner events and significant media attention leading to 5 television interviews.	Jacksonville Zoo and AAZK members host a Hicatee event at the zoo using BFREE chocolate turtles.	Sipriano Canti, Thomas Pop, Nelly Cadle, and Liberato Pop take part in a Wildlife Ambassador training program hosted by the Belize Wildlife & Referral Clinic.		

2018 field station volunteers include: Jacob Franzak, Cassandra Bianco, Miles Kim Parr, Mary Marchaterre, Nason Mes, Denice Ryan, and Brett Bartek.

Chocolate Rainforests

Heather Barrett

Chocolate as a commodity has the great power to destroy or protect rainforests. Chocolate grows in tropical climates and many of those areas are or have been biodiversity hotspots. For example, the Ivory Coast was densely covered by rainforests in the 1960s when the country boasted one of the highest biodiversity rates in Africa. However, the chocolate industry's unsustainable sourcing practices have contributed to the elimination of much of this forest, impacting critical habitat for wildlife such as elephants, chimpanzees, and countless other species. As a chocolate-growing country in the tropics with high biodiversity, Belize could easily follow the path of the Ivory Coast or it could choose a more sustainable future.



Photo: Tyler Sanville

Elmer Tzalam has been managing BFREE's cacao demonstration farm since 2011.

Cesario Pop delivers harvested cacao pods to the Cacao Discovery Center for processing.



Photo: Tyler Sanville

In the past few years, increased attention has been given to rainforest loss due to large-scale farming of full-sun cacao (cacao trees that are grown without any shade). Strong lobbying efforts and advocacy by environmental groups are targeting the major chocolate-growing countries and corporate chocolate-makers to commit to non-deforestation cacao production. The largest chocolate companies in the world are signing on to this 'chocolate forests initiative.' In 2018, BFREE joined this international movement and is advocating for the country of Belize to sign-on as well.

Over the past 10 years, BFREE has investigated the possibility of cacao as a viable and valuable shade crop on our private reserve and in other parts of southern Belize. We first researched cacao agroforests as "bird-friendly" habitat and have ultimately determined what we had suspected - that cacao grown amongst intact forests under the shade of forest canopy is simply more hospitable to all wildlife than the alternative, full-sun monocultures.

Equipped with this knowledge and the goal of continuing to promote forest protection, we push forward. In 2018, with funding from the Heirloom Cacao Preservation Fund, we began a cacao nursery and farming project to produce an heirloom fine flavor cacao, while restoring acreage in the BFREE reserve that had been damaged prior to our tenure on the property - likely due to farming. We are also pursuing a cacao agribusiness to help BFREE's financial sustainability over the long term. We recognize the delicate line between destructive agricultural practices and sustainable ones and we also know from our experience that we are not choosing the easy path. However, as the population of Belize expands and pressure increases on the natural resources, the country needs models for environmentally sustainable development and farming practices, and we are trying our best to meet that need.



Photo: Jacob Marlin

Guatemalan cacao expert, Erick Ak, visited BFREE to offer training on grafting techniques and cacao farm management with the goal of increasing production.

2018 Field Courses and Groups:

University of the Cumberlands, Williamsburg, KY
State University of New York at Potsdam, Potsdam, NY
Sterling College, Craftsbury, VT • Independence Junior College, Independence, Belize
Lees-McRae College, Banner Elk, NC • Keene High School, Keene, NH
Western Michigan University, Kalamazoo, MI • Otterbein University, Westerville, OH
Winona State University, Winona, MN • Lakeland University, Plymouth, WI
Carson Newman University, Jefferson City, TN • Delaware State University, Dover, DE
Turtle Survival Alliance Board Retreat • Clean Energy Events • Cacaoga Retreat

The Rainforest Is Our Classroom!

Tyler Sanville

For more than 20 years, BFREE has offered incredible opportunities for students and professors to learn about nature, science, and the culture of Belize, while exploring a remarkable rainforest setting. Field courses are curated to meet the requirements and goals of each class and include tours and practical experiences with BFREE's current research and conservation projects.

While being immersed in a tropical rainforest, it is often the completely unexpected that leaves the most significant mark on anyone visiting the BFREE field station and privately protected area. And there was no shortage of the unexpected in 2018!

University of the Cumberland students rang in the New Year under a sky full of stars while sitting around a campfire (no matter that it was a tad early at 10pm because most were tired from a long day of travel). Otterbein College students took advantage of the once-in-a-lifetime opportunity to nurse a baby howler monkey to health after it was found on the ground having fallen from a tree – they were later able to reunite it with its mother. Several students from Sterling College spotted a tapir at night and confirmed the sighting on their game camera the next morning. And perhaps the most unexpected of all, students from Independence Junior College spotted a Harpy Eagle perched in the Ceiba tree next to the bunkhouse.

There is no greater reward than hosting these field courses and providing the opportunity for the unexpected, leaving a life-long impact on everyone involved.



Lees-McRae College students designed jungle costumes for their last night at BFREE.

Jaren Serano (left) and Tom Pop with 2018 Hicatee hatchlings.



The BFREE In Me

Jaren Serano

As far back as my mind allows me to reminisce, I can picture 8-year-old me waking up early every Saturday morning just to watch Steve Irwin's show: The Crocodile Hunter. Memories of me being caught in school saving crickets in my pencil case, still brings a grin to my face.

I was born and raised in Belize, a jewel of a country blessed with an abundance of natural resources. I am the middle child out of four siblings and growing up I was the one who preferred being outside barefoot, poking around in the soil aimlessly with a stick.

I've always had a deeply rooted infatuation with conservation which led me towards wanting to help protect and preserve Belize's resources not only for future generations but also because I firmly believe that there should be harmony between man and land. To me, conservation is not just a job, it's a lifestyle.

Little did I know that my passion would lead me to BFREE. I first visited the field station while on a field course in college and was inspired by the conservation work I learned about. I knew that I had to be part of it.

An internship, two Harpy Eagle sightings, and countless muddy 6-mile treks on the BFREE entrance road later, I am now BFREE's

Science and Education Fellow. This is a two-year fellowship program where I hope to diversify my pallet when it comes to biodiversity and soak in as much knowledge as possible from the abundance of seasoned minds at the field station. I later plan to continue my studies abroad before returning to give back to my country. I hope to inspire Belizeans from all walks of life to want to care for and take pride in preserving mother nature's best-kept secret.

At BFREE, I am assigned to the HCRC to assist in the care and management of the Hicatees. I also collect data for a variety of research projects. I've always said that I never wanted to work in an environment where I would see the same four walls every day, but instead have an office that is dynamic and alive. I have found that at BFREE.

The field station and its landscape continues to mold me into the conservation biologist that I hope to be. BFREE offers the right conditions for me to blossom into just that by placing me in an environment that makes it clear that even if what I do does not necessarily impact me directly, I should still do it wholeheartedly.

This year I've realized life is random, addictively awakening, and strategic with the opportunities it gifts you. I know in my heart this is the beginning of something greater than me, something moving, something beautiful. I guess it's just the BFREE in me.

Turtles In Trouble

Heather Barrett

After its fourth year in operation, the word “successful,” used to describe the Hicatee Conservation and Research Center (HCRC) is an understatement. Having started with 22 adult and sub-adult turtles in 2014, we have now overseen four successful laying seasons producing close to 30 nests which have yielded nearly 300 Hicatee hatchlings. We are expecting another 200 eggs in the coming months.

The strategy to save the species goes beyond simply breeding lots and lots of turtles. It's part of a larger more comprehensive plan under development with the Belize government and other stakeholders under the umbrella of the National Hicatee Working Group, which is a Belize Government Ministry initiative. For our part, we are advocating for: 1) a 10-year moratorium on hunting Hicatee to allow stakeholders time to develop and implement an integrated management and recovery plan, 2) encouraging national pride in this rare and unique species by seeking to establish the Hicatee as the national reptile of Belize, 3) working to designate a National Wildlife Sanctuary and Hicatee Reserve, creating a safe home and release site for Hicatee, and 4) facilitating much-needed field work to help identify release sites and gain data about the species in the wild.

The 2018 edition of “Turtles in Trouble: The World's 25+ Most Endangered Tortoises and Freshwater Turtles,” identifies the Hicatee turtle as among those with the highest risk of extinction. A range of high priority conservation measures are urgently needed to preserve the future of this species. Our work taking place at the Hicatee Conservation and Research Center is just one piece of what should be a much larger plan. The Hicatee is disappearing but together we can save it.

180 turtles hatched at the Hicatee Conservation & Research Center in 2018.



Photo: Tyler Sanville

Tybren Vialdores joined the Spring 2018 Hicatee health assessment team.



Photo: Parr McQueen



Photo: Mrs. Serano

Students from St. Francis Xavier RC School in Cayo District created posters for the Hicatee Awareness Month poster contest.

Hicatee Awareness Campaign

Because the Hicatee turtle's decline across its range is due to overharvesting for human consumption, it was critical that we launch a strong awareness campaign. To that end, Hicatee Awareness Month was established during October 2017 with the release of the natural history documentary “Hope for Belize's Hicatee: Central American River Turtle.” With helpful feedback and many lessons learned, we were prepared and excited to embark on the Second Annual Hicatee Awareness Month this year.

The month of recognition began with BFREE's largest outreach project to date. Curated packages of educational resources were mailed directly to 100 pre- and primary schools in Belize and emailed to nearly 500 principals and educators. Our goal in sharing the materials is to inspire a future generation of leaders that recognize the significant cultural and historic value of the Hicatee.

In just one year's time, the impact and influence of Hicatee Awareness Month is beyond anything we could have imagined. When we discovered that a Standard IV class in Belize City were so inspired by the educational materials mailed to their school that they established a Hicatee Committee, we felt these words ring true, “the hicatee is disappearing, but together we can save it!”

Donors

Thank You to All Our Donors

We are grateful for both the financial and in-kind donations received from Summer 2017 – Fall 2018.

Please let us know of any omissions or errors on this list.

\$10-\$99 Princess Cone Snail

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\$10,000 + Hicatee Turtle

Jacksonville Zoological Society
David and Jackie Marlin
Heirloom Cacao Preservation Fund
Turtle Survival Alliance

Renewable Energy At Work In the Rainforest

Jacob Marlin

Having reliable and environmentally-friendly power has always been a mainstay of BFREE, but also a challenge. Though BFREE has been utilizing small, remote solar systems for over two decades, rarely has power been sufficient for our needs, and often we have resorted to gasoline powered generators in times of rain, overcast weather, or heavy electrical loads. Thanks to our donors and the expertise and hard work of Pro Solar Engineering Belize and Clean Energy Events out of Wilmington, North Carolina, things have changed in a big way since March.

BFREE now has a new and significantly improved 7.4 kw solar powered electrical system. The system is large enough to power the entire field station. Two racks of solar panels gleam in the sunlight from the center of the garden and all visitors benefit from this critical and timely upgrade. Most importantly, it burns no fossil fuel, it is silent, there are no brownouts, and it serves as another important teaching tool for all visitors.

Since installation, numerous improvements around the field station are popping up here and there, including charging stations, more fans, improved lighting, upgraded kitchen appliances, and to many people's great pleasure, an endless supply of ice! Life can be luxurious in the rainforest, with just a little help from the sun.



Photo: Heather Barrett

Pro Solar Engineer, Marcos Valle, offered a personalized training session to BFREE staff after the new system was installed.



Photo: Tyler Sanville

Two racks of solar panels are now located in the BFREE garden and orchard.



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Cacao + Yoga = Pure Bliss at BFREE

In February 2018, BFREE hosted its first yoga retreat with Cacaoga creator and Gainesville resident, Liz Getman. Cacaoga, which unifies sacred cacao with yoga and meditation, begins with everyone sitting comfortably on their yoga mats, sipping warm ceremonial cacao drink and then flows into a gentle, heart-centered yoga and meditation practice. Twelve women joined Liz for the inaugural week-long eco-adventure.

Due to the success of the 2018 retreat, three Cacaoga retreats are being offered in 2019. These retreats are for the curious and adventurous while still leaving plenty of room for R&R. Yogis will have the opportunity to participate in daily, guided yoga, and meditation practices, create chocolate from bean to bar, cook delicious meals using chocolate from an award-winning chef, experience a lush, tropical rainforest and even swim in the Caribbean Sea.

Space is still available! To join a retreat email contact@bfreebz.org for more info.

2019 Cacaoga Retreats: February 16 - 22 • April 13 - 19 • April 28 - May 4

