

Belize Audubon Society

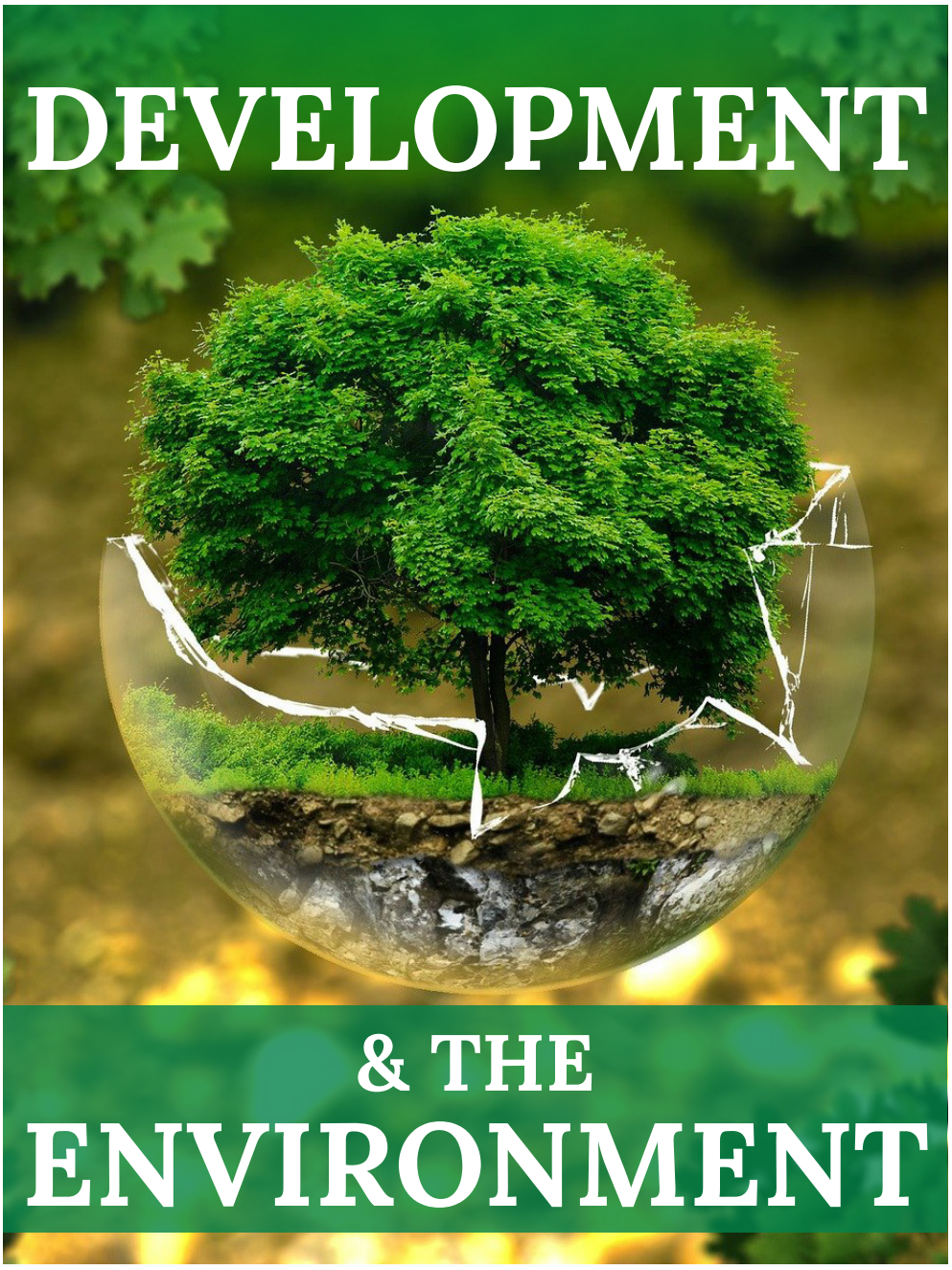
THE BAS Bulletin

Creating a balance between People & the Environment.



December 2021
Volume I Number 7

DEVELOPMENT & THE ENVIRONMENT



Peek Inside:

Staff Development

Sustainable Development in Belize

Alternative Livelihoods

Long-Term Volunteering with BAS

Stories from the Field

BIOPAMA Project Update

Kids' Corner

Membership Listing

About Us

VISION

The Belize Audubon Society is a national conservation leader and development partner that inspires people to live in harmony with and benefit from the environment.

MISSION

The Belize Audubon Society is a non-governmental, membership-based organization dedicated to the sustainable management of our natural resources through leadership and strategic partnerships with stakeholders for the benefit of people and the environment.

LOGO

One of our founding members, Dora Weyer, first designed the Belize Audubon Society's Logo inspired by the common symbiotic occurrence at Half Moon Caye.

The magnificent frigate birds with its seven-foot wingspan is unable to land on water and dive, therefore will harass returning Red-Footed Booby Birds after a day of fishing, forcing the Booby to drop its catch for the taking. Today, the Booby and Frigate continue to co-exist!

FEEDBACK?

We invite our readers to submit articles, photographs, or artwork for publication in the next ***Belize Audubon Society Bulletin***. Letters and emails are also appreciated!

What subject would you like to see covered in the next issue? What environmental issue is on your mind? What are your thoughts on this issue? We want to hear from you, our readers.

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SEE ANYTHING YOU LIKE?

Please feel free to quote or copy any information found within this issue. Kindly cite as the ***Belize Audubon Society Bulletin*** (Vol. No. p. date).

Proud Members of:

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by Natalie Blachford, BAS volunteer

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Our History

Since its formation in 1969, the Belize Audubon Society (BAS) has been Belize's foremost environmental organization protecting Belize's precious natural resources while educating the public about their value and sustainable use.

BAS has grown from an all-volunteer organization with 55 charter members to a Society of over 300 members with a staff of more than 40 dedicated professionals, along with a thirteen-member Board of Directors.

Throughout its history, BAS has been involved in the development of the legal framework and policy for environmental protection in Belize. From the initial Wildlife Protection and National Parks System Acts in 1981, BAS has been instrumental in the financing, development, and management of protected areas.

At the request of the Government of Belize, BAS currently co-manages seven of Belize's protected areas with a well-trained, knowledgeable staff; many of whom are from the surrounding buffer communities. Environmental Education, Advocacy, Community Outreach, and Biodiversity Research & Monitoring revolve around these protected areas and their buffer communities.

BAS Co-Managed Protected Areas

Blue Hole Natural Monument (BHNM)
1,043 acres – established 1996
Ramon Aguilar, Site Manager

Cockscomb Basin Wildlife Sanctuary (CBWS)
127,107 acres – established 1986
Nicacio Coc, Site Manager

Crooked Tree Wildlife Sanctuary (CTWS)
41,297 acres – established 1984; declared RAMSAR Site 1998
Derick Hendy, Site Manager

Half Moon Caye Natural Monument (HMCNM)
9,771 acres – established Crown Reserve 1928; Natural Monument 1982
Ramon Aguilar, Site Manager

St. Herman's Blue Hole National Park (SHBHNP)
575 acres – established 1986
Albert Augustine, Site Manager

Victoria Peak Natural Monument (VPNM)
4,487 acres – established 1998
Nicacio Coc, Site Manager

Guanacaste National Park (GNP)
50 acres - established 1990
Steven Coc, Assistant Site Manager

Welcome

On behalf of Belize Audubon Society Board and Staff, I would like to extend our warmest festive greetings to all of our members, in Belize and around the world.

2021 has been another challenging year for BAS, with the ongoing pandemic causing repercussions for our protected areas and our finances, not to mention the personal losses many of us have experienced.

However, as always, we push on and as we come to the end of the year, we celebrate the successes we have still achieved over the past 12 months, and look ahead to what we hope will be a better year for everyone in 2022.

In this issue of the BAS Bulletin, we're focusing on the theme of 'Development and the Environment', and what this means in Belize.

The recent case of the Stake Bank/Port Coral development has highlighted the need for consistency and transparency in decision making processes when it comes to balancing economic and environmental factors, and I delve deeper into this issue with an article on sustainable development and the need for good governance which you can read on page 8.

We also feature an article from The Nature Conservancy about the importance of the new Selva Maya protected area which was formally established this year, and we look at some of the important developments taking place in our own protected areas, including establishing environmentally-friendly solar power at both Half Moon Caye and Cockscomb Basin Wildlife Sanctuary.

Development is as much about people as it is anything else, and so we are proud to highlight some of our recent work in supporting training and development opportunities for both BAS staff and members of our buffer communities.

We also have an in-depth feature with one of our protected area site managers, who celebrates his 20th anniversary with BAS this year, as well as an article from our long-term volunteer, who has been working with us for the past two years.

I hope that you find the content of this issue interesting and informative, and I look forward to updating you all on our further progress next year.

Happy holidays!

Amanda Burgos-Acosta
Executive Director



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Drone training for HMC staff

Increasing Capacity
through PACT staff trainings

by Dominique Lizama

Well-trained staff is often hailed as an organization's greatest asset.

Continuous capacity building is important for succession planning, to refresh knowledge, to grasp new technologies and methodologies and to elevate new staff as they join our team at Belize Audubon Society.

By far the biggest investment this year was made in bird monitoring, which is a strength of BAS as an organization, both doing its own monitoring as well as serving as a mentor for other NGOs and community youths.

Through the PACT project, several staff were afforded the opportunities to enhance and gain new knowledge in bird identification and birding applications; undertaking a new monitoring methodology meant training all staff involved in data collection as well as staff who analyze the data and write reports and finally the staff involved in environmental education and bird guiding.

In building our capacity in birding banding to continue monitoring surviving migrant bird species over the winter, some staff are continuing existing training in bird banding, while others are being newly introduced. The renowned Hawk Watch Program offered by the Belize Bird Conservancy has also been on our "to-do" list for years – now, three staff are now certified in monitoring raptors.

Other notable trainings for the marine staff include learning how to operate a fixed-wing drone, reinforcing sea turtle nest monitoring and identification, and as we expand our bird monitoring efforts for Half Moon Caye staff are now better equipped to monitor sea birds and migrants during the winter months.

The assistant research and monitoring officer participated in a training coordinated by Healthy Reefs Initiative (HRI) on treatment of Stony Coral Tissue Loss Disease.

With trainers from HRI, University of Belize Environmental Research Institute (UBERI) and the Belize Fisheries Department, trainees were taught and assessed on correctly identifying SCTLD, demarcating affected corals along a transect, how to properly prepare the Core Rx and Amoxicillin mixture and finally how to apply the treatment to the affected areas (corals).

They also had the opportunity to observe and assess a site that was previously treated, so they know what to look for at their respective sites, post initial treatment.

Lastly, having our marine research and monitoring officer attend the 74th Gulf and Caribbean Fisheries Institute's conference, focusing on marine conservation efforts in the region, has expanded her knowledge on governance of coastal and marine resources, ocean financing, new innovations in addressing Stony Coral Tissue Loss disease and managing sargassum influx, just to name a few.



SCTLD treatment mixing



Bird Banding Training



Bird ID training for staff at St. Herman's Blue Hole National Park

Sustainable Development:
The need for good governance and a collective vision for the future of Belize

by Amanda Acosta

In recent months, the Belizean news has been covering the matter of the Ocean View/Stake Bank/Port Coral development.

The project and decision making surrounding the development have raised eyebrows, and a need for transparency and good governance practices has been highlighted in the decision making of the Department of Environment.

Consequently, Belize Audubon Society has joined a cohort of other national organizations in the demand for due diligence.

What is governance?

Governance should promote the expression of human potential. It should foster grassroots and non-governmental organizations, and collective groups organized for a cause such as cooperatives, associations, and women's groups.

The responsibility of governance is a joint mission, attaining desired national objectives through mutual support and facilitation. NGOs are tasked with being watchdogs of government, ensuring that accountability, transparency, participation, openness, encouraging public discourse, nurturing a free press and the rule of law is incorporated.

As the World Bank relates to the developing world, "Good governance is epitomized by predictable, open, and enlightened policymaking, a bureaucracy imbued with professional ethos acting in furtherance of the public good, the rule of law, transparent processes, and a strong civil society participating in public affairs.

Poor governance (on the other hand) is characterized by arbitrary policy making, unaccountable bureaucracies, un-enforced or unjust legal systems, the abuse of executive power, a civil society unengaged in public life, and widespread corruption."

Governance and the environment

Environmental management and its governance cannot be treated separately from other development concerns. Better management of natural resources and improved environmental governance are vital to reduce the incidence of environment related conflict.

The perception that sustainable management of the environment and economic development are competing priorities must be eliminated. The reality is that conservation efforts and those to reduce poverty will both fail, unless the causes and external drivers of poverty and biodiversity loss are both addressed.

The problem of governance, specifically environmental governance, is immense and the formulation of a national sustainable development vision document/policy is only part of the solution necessary to address those areas which rely on the use or exploitation of natural resources.

But this alone will not suffice; the regulation (governance) of environmental goods and services needs to be strengthened. Priority areas must be established and funded accordingly, building capacity and strengthening institutions and systems.

Governance issues such as rights to resources, uneven distribution in society to access and benefits from biological resources, appropriate levels of decision-making, transparency and accountability of institutions etc. should be at the heart of interventions seeking to conserve biodiversity and reduce poverty.

Establishing effective and equitable governance over natural resources can be a significant contribution to the empowerment of the poorer members of society.

Good governance implies the responsible use of political power and management of public resources. Governance is more than supporting the legal system; it sets in place the mechanisms necessary for it all to function together.



CGI image of the proposed Port Coral development (www.portcoral.com)

How can development be sustainable?

One of the first attempts to define sustainable development was by the United Nations in 1987 where they defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This idea resonates in the Native American Proverb: "We do not inherit the earth from our ancestors, we borrow it from our children."

The UN definition, however, is not universally accepted and has undergone various interpretations, because its goals and interpretations are vast. Some conservationists feel that the whole idea of sustainable development is an oxymoron, as development seems to always entail environmental degradation.

As ecological economist Herman Daly has asked, "what use is a sawmill without a forest?" From this perspective, the economy is a subsystem of human society, which is itself a subsystem of the biosphere, and a gain in one sector is a loss from another.

It is as a result of this we need to promote sustainable development, which is founded on three pillars: Environment, People and Economics. We cannot divorce one from the other. It is a difficult balance, but one we must strive to achieve. Without people there would be no discussion on sustainable development nor would there be any need to do so.

Thus, sound sustainable development is the goal. This involves resource management, proper assessment of resources before development (as this determines consumption/usage rate), assessment of environmental impact to resource - precaution and prevention being of greater value than loss of resource completely. Additionally, planning is vital to sustainable development; plans that encompass financial, socio-economic and environmental resources benefits and losses to each.

The promotion of sound development - sustainable development - has to come from all sectors. Every sector of our society and economy impacts nature and, as such, each must be responsible for wise use of resources they have come to depend upon.

Belize Audubon Society has actively advocated for properly planned development, particularly in cases where development is occurring in a sensitive area and either using or potentially causing irreversible damage to Belizean natural resources.

We call for developments that are properly planned and are sustainable, thus socially desirable and economically feasible, with the least negative impacts to the environment.

Belize has an abundance of laws, regulations, guidelines and policies, including their accompanied administrative systems (within our legal and institutional system), dedicated to environmental issues. And yet, gaps exist within governance mechanisms: long term planning and vision documents are lacking within the system.

Belize postures itself as a country which promotes and supports sustainable development; however, a national vision of what sustainable development means in regard

to economic, social and environmental policies (the three pillars of sustainable development) does not exist.

Master plans for the major players have been developed in some sectors such as tourism and agriculture; however, their implementation is lacking. These plans need to be revised with the mandate and vision of a post-Covid economy, if not then the ethos of sustainable development is only given mouthpiece.

"Earth provides enough to satisfy every man's need, but not every man's greed"

For sustainable development to become a reality there needs to be a coherent vision, a collective goal, for all contributing sectors, collated in a vision document that maps out the Belizean future towards sustainable development over the next 20 years devoid of party division. It is a collective, national vision for the nation of which all decisions are made up.

The bottom line…

It all boils down to our vision for the country. What do we foresee for our tourism product, export portfolio, agricultural sector, energy needs, etc., all essential to our future? What form of development in the coastal area are we looking for?

The best way we can address the issues of sustainable development is through the pursuit of a holistic and responsible vision for the nation, one that is sensitive to the socio-economic realities of the nation in addition to the natural resources we are blessed with.

Essentially, sustainable development demands that we be socially responsible for ourselves and future generations.

It is perhaps best put by Mahatma Gandhi who said "Earth provides enough to satisfy every man's need, but not every man's greed."

Sustainable development must be an interactive relationship between conservation and development; in essence a marriage of the two, where compromises are made and decisions are made out of mutual respect and kindness from both sides.



The unspoiled island and waters of Half Moon Caye Natural Monument

Alternative Livelihoods for Buffer Communities

by Lucito Ayuso

As part of BAS' ongoing work to support the buffer communities of its protected areas, $20,000 has been donated to support alternative livelihoods in the communities.

Four beneficiaries from the buffer communities surrounding St. Herman's Blue Hole Natural Monument (SHBHNP) and Cockscomb Basin Wildlife Sanctuary/ Victoria Peak Natural Monument (CBWS/VPNM) received the donations totaling $20,000, to help them implement new alternative livelihoods business models.

Alternative livelihoods business models range from promotion of animal husbandry and production of vegetables using agricultural best practices, cover structures and irrigation systems from wells, to the production of nurseries to grow ornamental plants and organic honey.

The implementation of these outreach activities will not only increase support within the communities for BAS' conservation work, but will also improve the socio-economic and wellbeing aspects of buffer communities surrounding BAS' co-managed protected areas.



Signing of the MOA

The donations were made and a MOA signed at St. Herman's Blue Hole National Park in early December.

This initiative is being financed under the PACT Targeted Investment Programme, "Improving the Management of BAS co-managed protected areas" which is being coordinated by BAS.



Presenting of the $20,000 donations

Long-Term Volunteering With Belize Audubon Society



In January 2020, British citizen Natalie Blachford joined the BAS team as a long-term volunteer, initially for a 12 month period which was later extended for a second year. Natalie has been working within BAS' Environmental Education & Communication team on a wide variety of projects, as well as assisting the membership program and managing BAS' social media pages.

As she comes to the end of her time with the society, Natalie shares her experience as a foreign volunteer in Belize.

Almost two years ago to the day, I left England with no idea what was to come – I had never been to Belize before, but I was moving my entire life here and hoping for the best!

People always ask if I was scared to move, but I really wasn't; I was excited to see a new part of the world, discover the Belizean culture and get stuck in to my work with Belize Audubon Society.

My background is in marketing, PR and communications, and before moving to Belize I was working in the hospitality sector, but for a while I had been feeling unfulfilled and wanted to do work that I thought had more meaning and impact.

I have always been passionate about conservation and the environment, so when I discovered BAS and started to learn about the work the society does, I realized that by becoming a volunteer, I could use my existing skills and experience to help a really important cause.

I joined BAS' Environmental Education & Communication team in January 2020, and was immediately made to feel so welcome by the whole team. I had a lot to learn and was quickly immersed, meeting with all of the program leads to find out more about their work and what I could do to help.

The opportunities that have been afforded to me during the time I have been with BAS have been incredible, both on a professional and personal level.

Professionally, I have been trusted with major projects that have challenged me and taken me outside of my comfort zone.

I spent 12 months working on a strategic communications plan for BAS that will guide the organization through the next 10 years; I discovered design skills I never knew I had, creating a 36-page hiking guideline for Victoria Peak; and I created a new branding guide for BAS that aims to define how the society presents itself to the public in 2022 and beyond.

One of the things that excited me about working for BAS before I joined was the variety of the protected areas they manage, and being able to visit all of those has been an amazing experience.





From hiking to the top of the Tiger Fern Trail and looking out over the Cockscomb Basin Wildlife Sanctuary, to staying on Half Moon Caye and scuba diving on the reef; it has been like a highlights reel of the best Belize has to offer.

Working in communications, one of the best things about the job is the conversations you have with people from all different backgrounds and walks of life, and getting to tell their stories to the world.

With BAS, I have had lots of opportunities to do exactly that; from meeting the staff at all of the protected areas, learning about their backgrounds and sharing in their passion for the sites they manage; to meeting members of the communities who BAS work with and who are directly impacted by the benefits and opportunities the protected areas bring.

Belize has such diversity in its people and culture, and I have loved discovering that during my time here.

I have gone from wondering what on earth 'Dis da fi wi chikin' means, to having at least a passable understanding of Creole and some Spanish; I've learned the secrets of making a good Johnny cake and have developed a mild addiction to meat pies (although I will sadly leave without having mastered proper rice and beans…)

I know that not many people can afford to give up their job, relocate to the other side of the world and become a full-time volunteer, and I am very privileged to have been able to do that.

However, for anyone who is in a similar position to the one I was in two years ago, of wanting to make a change and do something that has meaning to them, I think that if you are brave, you can do it.

Whether it's volunteering at the weekend, taking evening classes, or just reaching out to people who do what you want to do and having conversations with them, small steps can lead to big changes.

I am so grateful to have had this opportunity, and would like to thank everyone who I have met in my time here for making it so special.

Selva Maya:

Why conservation groups flocked together to save Belize's 'last chance ecosystem'



All photos courtesy of Tony Rath

by Julie Robinson, The Nature Conservancy

From above, the emerald shades of Belize's Selva Maya hint at the sheer diversity of life teeming both above and below the canopy of what constitutes the largest contiguous block of rainforest north of the Amazon.

Straddling the intersection of Guatemala, Mexico and Belize, the Selva Maya fans out across 38 million verdant acres (15 million ha) of pristine jungle, hosting some 400 bird species alongside 70 mammals, including the iconic jaguar and endangered black howler monkey.

But aerial images from recent decades show that even this timeless forest – one of Earth's "last-chance ecosystems" in terms of its globally rare ecological significance – is fraying at the edges, facing increasing pressure from illegal logging and slash-and-burn clearance for agriculture.

"Deforestation has been closing in," explains Edilberto Romero, executive director at the Programme for Belize (PfB). "If it's not protected, the forest will eventually disappear." And the threat is only becoming greater as climate change drives increased weather extremes, leading to hotter, drier conditions and with them, increased forest fires.

Between 1986 and 2018, forest stocks in Belize declined by more than 28 percent – and around the Selva Maya, deforestation rates outpace the national average nearly four times over.

That is why the recent acquisition of 236,000 acres of the Selva Maya's tropical forest of northwest Belize by a multisector coalition including BAS is so significant.

Together with the Rio Bravo Conservation Management Area established in 1989, the new protected area represents nearly a tenth of Belize's total land area and includes some of the most biodiversity-rich forest in the world.



"[The new protected area] allows us to fulfil further our goals of reducing pressures on biodiversity, improving mitigation and adaptation to the impacts of climate change as well as our goals of sustainable management of ecosystems for the goods and services they provide," says Hannah St. Luce-Martinez, director of Belize's National Biodiversity Office.

While the small Caribbean nation inherited a strong foundation of largely intact lands and waters from its Mayan ancestors, broad collaboration among public and private sector actors has proven essential to alleviating excess pressure on these resources—and a big part of the strategy is protection.

"When you look at our protected areas system, we have this amazing network that extends from north to south and east to west, ensuring connectivity and habitat representation across the entire country," says Julie Robinson, TNC's Belize Program Director.

After enduring centuries of colonial rule, Belize gained independence in 1981, and with it came a revolutionary national anthem rich with allusions to the "untold wealth" nature had bestowed upon the region.

With full sovereignty over their resources, Belizeans have surpassed each of the goals laid out by the UN's Convention on Biological Diversity (CBD) - with 36% of the territory under some form of legal protection and having recently secured the largest Blue Bond for Conservation deal to date, financing the conservation of 30% of its territorial waters through an innovative debt-for-nature conversion.

"Belize has a long history of appreciating our resources, both terrestrial and marine," says TNC's Robinson. "The country is very progressive in terms of sustainable development and natural resource management – a sentiment that has only grown with the surging interest from the global ecotourism sector."

Indeed, this growing acclaim as a vacation destination – with holidaymakers accounting for around 40 percent of national GDP and rain forest tourism alone generating some US$15 million annually – might explain why Belize is one of the few countries to boast its own National Biodiversity Office and Ministry of 'Blue Economy'.

Tourist dollars are of course a critical source of conservation revenue, but the real key to saving places like Belize's Maya Forest? Engaging the communities that live just outside their boundaries.

"I think if we work with the communities, they're really supportive of our conservation work," says PfB's Romero. "But they also need help."

Today, the people of Belize often refer to their homeland as 'the jewel', and it may indeed be among the most priceless resources on the planet – climate and biodiversity action cannot succeed if places of its kind disappear, but the collaborative effort to secure its survival brings fresh hope for other critical ecosystems worldwide.

Lush as it now appears, the last-chance ecosystem of Selva Maya is a living monument to resilience, and the wisdom to understand that nature represents the investment of our lifetime – and our most important legacy.



Partners who made Maya Forest conservation project possible through years of effort include: Bobolink Foundation, Cornell Lab of Ornithology, Cleary Gottlieb Steen & Hamilton LLP, Corozal Sustainable Future Initiative, International Tropical Conservation Fund, Gallon Jug Estate, Global Wildlife Conservation, Mass Audubon, Programme for Belize, Symphasis Foundation, The Nature Conservancy, The Rainforest Trust, University of Belize Environmental Research Institute, Wildlife Conservation Society, World Land Trust and Wyss Foundation.



Stories from the Field:

PROTECTOR OF THE PROTECTED AREAS

For the past two decades, Nicacio Coc has been managing two of Belize's most important protected areas - Cockcsomb Basin Wildlife Sanctuary and Victoria Peak Natural Monument. To celebrate his 20th anniversary, we spoke to 'Mr. Nic' to find out more about his time with BAS, the developments he's seen, and what it takes to be a Protected Areas Manager.

I first started to work for BAS at Cockscomb Basin Wildlife Sanctuary in September 2001, and my job title at the time was Assistant Park Director.

My responsibilities then were mainly manning the front desk, visitor meet and greet, explaining the trail map and educational tours. I became Site Manager in 2004, which is the position I still hold today.

Before working at BAS, I was a primary school teacher for 12 years. I applied for a study leave from the Ministry of Education, however at the last minute I decided to change my career, instead of studying primary education I chose to study agriculture and natural resource management.

After completing my studies, I wanted to be a part of the BAS team that was protecting and managing the Cockscomb Basin ecosystem and biodiversity near my home village of Maya Mopan. From knowledge and principles I gained from my study at the University of Belize, I was convinced I could contribute and be a team player to support the work of BAS.

As a site manager I am responsible for executing the CBWS yearly work plan, helping in developing an annual budget, supervision of staff, volunteers and researchers, and visitor management. I am also the site manager for Victoria Peak Natural Monument.

I plan the daily operation of the site, plan and conduct enforcement with in partnership with other enforcement agencies; report to the Terrestrial Protected Areas Manager; attend and represent BAS in meetings and workshops; secure BAS funds and assets; and, of course I am responsible for the safety of the protected area 24/7.

One of the biggest challenges of managing CBWS is the execution of compliance.

The safety of my staff is paramount, and the concerns we have to consider range from hunters and poachers to dangerous snakes and how rugged the terrain is.

On the other hand, one of the most rewarding aspects of my job is the enforcement work – I love conducting jungle patrols, and then if we come across any illegal activities, arresting the perpetrators and convicting to court.

We always have new projects taking place at CBWS, which keeps it new and interesting.

Right now, we have the renovation of the old conference room building into a new kitchen facility, which has been funded by PACT, and the construction of a research lab funded by PANTHERA, both underway and due for completion in 2022.

I have seen a lot of changes and developments in the 20 years I have been working for BAS, including taking eco-friendly solar power and internet to remote protected



Nicacio Coc leading an enforcement patrol

areas like CBWS and Half Moon Caye – before that there was no light at all!

Over the years I have also seen stronger stakeholder relationships being built, and we have hired and built field staff capacity to meet the growing demands of the protected areas.

I have also seen changes and developments in the local communities surrounding CBWS; we now have a stronger leadership and partnership with the communities, with emphases in environmental education, compliance awareness, safeguarding the integrity of the Protected Area's biodiversity, and its watershed functions.

Having worked at CBWS for so long, I have a lot of amazing memories, but the ones I will never forget are definitely my expeditions climbing Victoria Peak. It's one of the most exciting activities you can do and I'm very lucky to be able to do it as part of my job.

Being a protected areas manager is quite a rewarding feeling, knowing that you are contributing to the protection and management of a well-known protected area like CBWS. However, it is not as easy as it may look.

It takes a whole lot of dedication; it takes me away from my family, from my weekends and personal time. It has

taught me many life lessons, there are times it requires me to be a mechanic, a police officer, an educator, a father, an administrator, a driver, a hiker, an engineer of good judgment.

I love this job, which is why I take on all these roles, rain or shine, whether early or late, easy or tough, I go for it.

Being a site manager is really a demanding job, it will require your all, and to be an effective manager you must like and love what you do.

For anyone planning to visit CBWS, I would say – welcome to CBWS, the lush tropical forest and jaguar reserve!

Here in CBWS we have many attractions and so many things to do, like hiking to the waterfalls, river tubing, bird watching, and hiking on nature trails to look out for wildlife. Be sure to speak to our site staff when you arrive, who can help you plan your day.

When I think about the future of CBWS, one of the things I'm most passionate about is continuing our work in protecting the jaguar population in the protected area.

For many in Belize, the jaguar has become a symbol of conservation. It is a symbol of the effort being made to conserve our forest and the wildlife they support, so that they can be there for all the years to come, so therefore let's continue to protect it.





Educationg local school children about the importance of Protected Areas

NOMINATIONS OPEN

FOR THE

JAMES A. WAIGHT AWARD

Belize Audubon Society invites nominations from its members and the general public for the 2022 James A. Waight Award.

This award is presented annually in honor of one of the Society's founding members, Mr. James A. Waight, to individuals or organizations in recognition of significant contribution, nationally or locally, to the conservation and enhancement of Belize's environment.

The award nominees must meet the following criteria:

- Be a Belizean or resident of Belize
- Be involved in work directly related to the conservation and protection of the environment
- Be involved in one or more of the following areas: Ecosystem conservation such as forest, reef or coastal zone conservation, pollution control, waste management, ecotourism promotion and the socio-economic environment, indigenous rights, or socio-cultural protection
- The efforts of the nominee must have a social dimension and be innovative or non-traditional

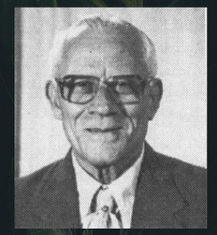
Nominations can be made by anyone – friend, family or colleague – but must provide evidence of how the nominee meets the above criteria, and should be supported by photo and/or video evidence where possible.

The deadline for nominations is midnight on Friday 31st December

BELIZE AUDUBON SOCIETY

SEND YOUR NOMINATIONS TO:

James A. Waight Award
Belize Audubon Society
16 Taiwan Street
PO Box 1001
Belize City
members@belizeaudubon.org



BIOPAMA
Project Update

The BIOPAMA project is a 2.5-year project which commenced in July 2020, and aims to build BAS' capacity to effectively manage its four highest priority protected areas – Cockscomb Basin Wildlife Sanctuary (CBWS), Victoria Peak Natural Monument (VPNM), Half Moon Caye Natural Monument (HMC) and the Blue Hole Natural Monument (BHNM).

The four protected areas are to be used as landscape and seascape models – Centres of Excellence – for other protected areas in Belize and the region, focusing on long-term biodiversity conservation, protection and provision of ecosystem services, and socio-economic benefits.

Education & Community Engagement

by Dareece Chuc

During July and August, a Knowledge, Attitudes and Practices (KAP) survey was carried out in eight of the protected area's buffer communities.

The purpose of the study was to gather current information to measure the level of awareness, perceptions, and support for protected areas and the laws that govern them.

BAS also seeks to identify possible natural resource-based livelihoods that can assist the households in the buffer communities with income generation.

The results of this KAP survey provides much-needed information to guide the environmental awareness, and community outreach programs.

Summary of Results:

- The study was carried out as a cross-sectional survey of 324 households in 8 buffer communities of CBWS/VPNM and HMC/BHNM.
- Results of the study indicated that families in the buffer communities are mainly Hispanic/Mestizo and Maya (Mopan and Ketchi) descent.
- The households are mainly in the poor and vulnerable categories and though they have electricity and water they lack certain amenities. Low education levels translate to low paying jobs.
- Though there is widespread support for protected areas and protected area managers, the knowledge level that would give a deeper understanding of the importance of protected areas falls short.
- The buffer communities see the benefits of the protected areas in conservation, education, employment, and tourism and recreation.
- There is high interest in animal husbandry and modern agriculture for income generation.

In the past three months, BAS has also been working with the Maya Center Women's Group (MCWG) who have benefited from a series of training workshops including sewing, business development (record keeping, leadership, customer service, sales and marketing) product pricing and development.

To further support the group, a business plan, consisting of an operational plan and visibility actions, will be developed with the assistance of BELTRAIDE.

Six sets of sewing machines, 10 sewing kits, fabric and furniture were donated to the women's group to facilitate the growth of their sewing services and leading to additional income generation.

It is the hope that the capacity building and support to the women's group will aid them in improving their business operations and in turn result in increased income benefiting the women and their families.



Presentation by BELTRAIDE



Ladies from the Maya Center Women's Group taking part in trainings



Research & Monitoring

by Dominique Lizama

As a mature organization at 50+ years, Belize Audubon Society has gone through several phases of development and growth in all its programs.

Funding from the BIOPAMA project has helped our Science Program to remain focused on monitoring key conservation targets, as well as allowing growth in new areas with the advancement of technologies, training opportunities and availability of equipment. BAS has also been placed in a position to serve as a mentor for smaller sister NGOs.

For the marine monitoring activities, in the second half of 2021 the team has focused on monitoring in new locations within the Lighthouse Reef Atoll, capturing a wider representation of the atoll's habitat types and species.

In addition, with the onset of the lethal Stony Coral Tissue Loss Disease (SCTLD), it has challenged our Research and Monitoring team to quickly learn about this disease, how to combat it to save our reef and to spread awareness to all users who depend on the resources of Lighthouse Reef Atoll.

To date, SCTLD continues to spread across the atoll. Monitoring is continuous as it allows us to track progression and the rate of disease spread, and strategic treatment of colonies has begun to increase chances of recovery and to assess efficacy of treatment methods.



Reef Health Monitoring



Cross-fertilization Training

Coral colonies selected for treatment depend on the species, size and a percent mortality no greater than 30%.

Treatment involves the application of a mixture of antibiotics and Core RX to corals exhibiting lesions. This mixture is applied to the margin of the infection area to create a barrier between live and infected regions.

Subsequently, revisiting treated coral allows the team to determine if disease spread on individual corals is continuous or if treatment is effective.

A spread of 75% cover on the coral indicates that efforts should be applied to other colonies.

Pre-season conch monitoring was restricted to only a few sites and the results show a total of 577 conch were recorded across the seven sites with majority being in the general use zone.

Of all these, only 21% reached or were greater than the harvestable shell length size limit (178mm).

Observational data from October and November shows that coral bleaching levels were low with most evidence occurring in the form of 'paling'.

There were minimal levels of partial and whole bleaching seen at the sampling sites.

Monitoring coral recovery will be done in Feb to allow for comparison across all survey months.

For the Terrestrial component of the program, we have embarked on developing our Water Quality Monitoring Program, including creating a manual, identifying sampling sites, training staff and beginning data collection in September 2021.

Cockscomb Basin is an important site, providing clean water to several communities downstream, and is the pilot site for this project, with plans to expand data collection to other sites in the near future.

In this pilot phase, through partnership with another project, we have also included 10 youths from the buffering communities to learn and participate in this process.

Our hope is that they will now join in future data collection efforts and advocate for best practices on water resources in their respective communities, creating a new generation of environmental stewards.

Elsewhere, the funding from BIOPAMA has helped us to work on developing our Data Management System and securing a server to host our data.

Our US partner, National Audubon Society has provided us with licenses to access and use the ArcGIS Online platform to store specific research data and site-oriented surveys.

The online server will allow us to share up-to-date data with the public in multiple formats such as web map, web app, dashboard and story map.

The licenses for ArcGIS Pro and ArcGIS Online can be used to summarize and analyze spatial data through maps.

Additionally, we hope to finalize securing a monitoring related storage server (Microsoft Azure); however, for the time being the SMART Connect software has been downloaded for staff to have access to dashboard monitoring for data collection on turtles, lobster and conch.

Lastly, in serving as a mentor for our sister NGOs, the Southern Environmental Association (SEA)'s staff capacity was strengthened in marine monitoring.

Through theoretical and practical sessions, the information shared focused on standardized marine monitoring protocols for sea turtle identification, nest monitoring and relocation; beach profiling; and fisheries independent commercial species (lobster and conch) monitoring.

Plans for 2022 include strengthening the capacity of the Sarteneja Alliance for Conservation and Development (SACD) staff's capacity in bird monitoring, with a particular focus on waterbirds.



Cross-fertilization Training with SEA

Infrastructure Development

by Shane Young

Going Green at Half Moon Caye and Cockscomb Basin Wildlife Sanctuary

Two of Belize Audubon Society's co-managed protected areas are going green with renewable energy.

Photovoltaic (solar) systems have recently been installed on Half Moon Caye Natural Monument and at Cockscomb Basin Wildlife Sanctuary.

Each system boasts a photovoltaic array of 24 KW, a charge controller with output of 7 KW of continuous electricity, and six lithium batteries.

The system at Half Moon Caye is designed to produce electricity to supply the ranger's facility, campground, restrooms, and accommodation facilities.

At Cockscomb, it will supply all of the accommodations, restrooms, kitchen, conference room, ticketing office and visitor center.

This much needed upgrade aligns with the protected areas management plans that aim to improve the quality of life for staff at remote sites, enable efficient administrative processes, upgrade tourism infrastructure and enhance the visitor experience.

This activity is made possible through financial support through the BIOPAMA funded project titled: "Improved management models at four of Belize's highest priority protected areas".



New photovoltaic panels installed at Half Moon Caye

Victoria Peak Natural Monument

by Arvin Coc

Over the past 18 months, BAS has commenced the updating of the Victoria Peak Hiking Guideline in an effort to improve the hiker's experience, primarily in relation to safety and preparedness for the expedition.

Hikes to Victoria Peak have become more and more popular in recent years, with the majority of the hikers being local Belizeans.

In order to provide as much information as possible to hikers before they tackle Victoria Peak, BAS decided to update the guideline with information that would be very useful for both hikers and Victoria Peak tour guides.

This additional information includes tour guide licensing and special training, updates on ratios and intervals, compliance, and updates on penalties and fines.

With this new information, tour operators, tour guides, and hikers will have a better understanding of the Victoria expedition, how it is managed, and what is expected from tour guides and hikers while on the hike.

As part of sensitizing tour operators and tour guides of this updated guideline, BAS held a sensitization and validation session with Victoria Peak guides and tour operators in collaboration with the Belize Tourism Board (BTB) on November 25, 2021.

The updated guideline was presented to tour operators and guides, where each section of the guideline was explained to them.

The tour operators and guides appreciated the new information integrated into the guideline since it provides more clarity as to how Victoria Peak expeditions are to be conducted.



Familiarization for Victoria Peak guides

They provided recommendations as it relates to special training for guides, which was noted and will be integrated as part of the training required for Victoria Peak Guides.

BTB also took the opportunity to present to tour operators and guides information related to the rules and regulation governing tour operators and tour guides. The session was productive with fruitful discussions aimed at improving Victoria Peak expeditions.

Special trainings will be provided for these guides during the first quarter of next year just before the opening of the 2022 Victoria Peak season.

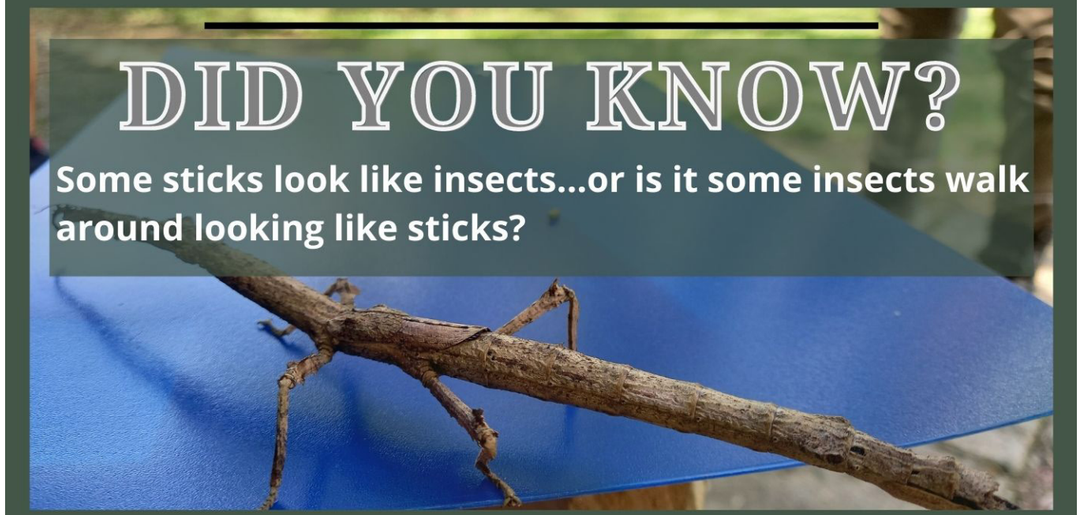
These are added and improved measures BAS is implementing as part of improving the safety of hikers and as well enhancing the visitor's experience.

About BIOPAMA

The Biodiversity and Protected Areas Management (BIOPAMA) programme aims to improve the long-term conservation and sustainable use of natural resources in African, Caribbean and Pacific (ACP) countries, in protected areas and surrounding communities.

It is an initiative of the Organisation of African, Caribbean and Pacific States financed by the European Union's 11th European Development Fund (EDF), jointly implemented by the International Union for Conservation of Nature (IUCN) and the Joint Research Centre of the European Commission (JRC).

Building on the first five years of activities financed by the 10th EDF (2012-2017), BIOPAMA's second phase provides tools for data and information management, services for improving the knowledge and capacity for protected area planning and decision making, and funding opportunities for specific site-based actions. www.biopama.org



DID YOU KNOW?

Some sticks look like insects...or is it some insects walk around looking like sticks?



Pterinoxylus spinuosus also known as 'walking sticks' or 'stick insects' are found in the Neotropics and are herbivorous. They are **sexually dimorphic** (male and female has different characteristics) and this one which was found in Cockscomb Basin Wildlife Sanctuary (CBWS) is a female. Males have a slender and elongated body with large wings while females look larger and more robust with smaller wings (left photo). At maturity, both have a **tactile stimulation** (reaction to touch) where the wings of males will maintain in an erected position of about one minute and the females will display a sudden lateral extension of the wings when threatened; this can be interpreted as anti-predator display.

Another defense against predation is **crypsis**, which includes camouflage, nocturnality, and mimicry. To avoid predation, *P. spinuosus* extends its front legs forward beside the head (seen in right photo) and the other two pairs of legs folded tightly to resemble side twigs on a dead stick so that it remains unnoticed during the day.

This specimen found at CBWS was approximately 8 inches in length from the tip of its antennas to the end of its abdomen! It's one of the longest insects you will ever see!



by Roberto Rivero

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Liany Ayuso
Shanine Bainton
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CREATING A BALANCE BETWEEN PEOPLE AND THE ENVIRONMENT

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