



Coastline
newsletter
July - December

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COASTAL ZONE MANAGEMENT AUTHORITY AND INSTITUTE (CZMAI) IN PARTNERSHIP WITH THE UNITED KINGDOM'S NATIONAL OCEANOGRAPHY CENTER DEPLOYS AUTONOMOUS VESSEL TO CONDUCT OCEANOGRAPHIC SURVEYS IN BELIZE

By: Arlene Young, CZMAI Director



C-Worker operating off the coast of Belize City

The Coastal Zone Management Authority and Institute (CZMAI) hosted a team of Scientists and Engineers (15 persons) from the United Kingdom's National Oceanography Centre (NOC) from October 27- November 30, 2018 to conduct research activities along the Belize river and within the central Belize region.

On October 29, 2018, Scientists from the NOC began a multi-disciplinary program of fieldwork in Belize that aims to help characterize the impacts of changes in land-use management on coastal environments. This is a collaborative research program through the UK Government funded Commonwealth Marine Economies (CME) Programme which has resulted in NOC scientists working alongside those in the Coastal Zone Management Authority and Institute (CZMAI), the University of Belize, and the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in the UK.

Special Points of Interest

- Education and Outreach
- GIS Advancement
- Sportfishing
- Youth and the Environment
- Water Quality Monitoring
- Science and Technology

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Programme lead, Dr. Claire Evans, said “What happens on land impacts the ocean. This project will provide the best possible data on those impacts to support the management of natural resources by decision makers in Belize.”

Information being generated through this new project will be included in the updating of the Belize Integrated Coastal Zone Management Plan (2016)- thus the outcomes will facilitate informed evidenced-based policy geared towards balancing tradeoffs between different activities and services within the coastal zone, and conservation of the vital ecosystems services it provides. Planned activities involve comparing samples of river water taken in pristine natural environments with those taken from rivers flowing in areas that have undergone changes in land-use patterns. This will help inform decision makers about the impact of these changes in land-use on the quality of the water in rivers.

To assess the impact of changing land-use on the coastal environment, the team deployed a robotic unmanned boat to conduct oceanographic, bathymetric and hydrographic survey. This robotic boat known as the “C-WORKER” is part of the CAMEL (Containerised Autonomous Marine Environmental Laboratory) package of marine equipment, which also includes a mini Remotely Operated Vehicle (ROV) that was used to visually assess the impact of changing ocean quality on the health of coral reefs in the area. It is noteworthy to mention that this is the first ever deployment of the CAMEL.



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Training Room: 80 ppl
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Message from the CEO

Dear Partners, Colleagues, Friends:

I am pleased to share the final issue of our semi-annual Coastline Newsletter for 2018 as we draw close to the end of this fiscal year. CZMAI is grateful for your support, interest and commitment during the 2018/2019 fiscal period.

As I reflect on this year's accomplishments, I would like to share a few highlights that we at CZMAI are especially proud of:

- Commemoration of CZMAI's 20th Anniversary of service to Belize under the theme, "Celebrating 20 years of promoting the sustainable use and management of Belize's coastal zone"
- Initiation of the implementation of the 4-year regional project, "Climate-smarting Marine Protected Areas and Coastal Management in the Mesoamerican Reef Region" that will support CZMAI to explicitly incorporate climate-risk information into the resource management framework of a future revised version of the Belize ICZM Plan. This project is funded by the Germany's Federal Ministry for the Environment, Nature, Conservation and Nuclear Safety (BMU) and implemented through the World Wildlife Fund (WWF).
- Finalization of a Communication and Engagement Strategy & Implementation Plan with strategic priorities to be implemented under the upcoming fiscal period;
- Continued strengthening of the Institute's technical capacity to monitor and report on the state of the coastal zone through partnerships such as with UK's National Oceanography Centre (NOC) and Centre for Environment, Fisheries and Aquaculture Science (CEFAS) under the Commonwealth Marine Economies (CME) programme.

As we celebrate the accomplishments of 2018, we are keen to build on them for 2019 and beyond. CZMAI, under the leadership of its Board of Directors, looks forward your continued partnership and support, which is critically important for the successful attainment of improved coastal and marine area management in Belize. CZMAI encourages you to stay in touch with us throughout the year for updates on our accomplishments and the outlook for the foreseeable future. Sign up for our bi-annual Coastline Newsletter or connect with us on our website, Instagram and social media!

With very best wishes,

Chantalle Samuels (Mrs.)
Chief Executive Officer

CZMAI attends Spatial Analysis Training Workshop

by Andria Rosado, Data Manager



Organizers of the of Spatial Analysis Training Workshop.

On October 29th to November 2nd, 2018, the Ministry of Natural Resources held a five-day training workshop at the Central Information Technology Office (CITO). The aim of the workshop was to build capacity of the Belize National Spatial Data Infrastructure (BNSDI) stakeholders. The workshop focused on practical applications which allowed participants to efficiently analyze geographical events and make strategic and organizational business decisions. The training was organized under the Belize Climate Resiliency Infrastructure Project (BCRIP). The project's overarching goal is to strengthen technical capacity for the increased use of spatial data in order to support climate resilience planning to mitigate against and recover from impact of natural disasters.

The main objective of the training workshop was to equip GIS officers or mid-level decision makers who have the responsibility of providing advice to top level decision-makers and drafting policy and program documents, with the knowledge and skills in understanding a collection of spatial data analysis techniques. These techniques include selection, transformations, manipulations, explorations and confirmation of applied geographic data to add value, to reveal patterns and anomalies that may not be immediately obvious and most importantly to support evidence based decision.

This training was crucial for strengthening the institutional capacity within the NGO/government and enhancing intermenstrual coordination that will advance data, information, tools and technologies. This will provide support to managers, planners, and government field officers in their efforts to build resilience in their communities across Belize through the successful and sustainable implementation of the BNSDI Project.

During the training participants were able to acquire more knowledge on network analysis, geospatial and image analysis, topology and data quality as well as creating 3D models and overall introduction to Drone2Map software.

Although, CZMAI is not an official member of the BNSDI, it's Data Centre holds a vast amount of spatial data in regards to coastal and marine areas of Belize.

In spite of Drone2Map being new to most participants, CZMAI is a valid license holder for the software and has been using it since June 2017. CZMAI uses Drone2Map to create high resolution ortho-rectified imagery using images from a DJI Phantom 4 Pro Drone. The images are then used to map our coastal structures, vegetation, and erosion over time as well as provide an overall snapshot coastal development within CZMAI's Coastal Planning Regions.

Sport Fishing 2018 in Review

by Victor Sho, Sportfishing Programme Coordinator

The 2018/2019 fiscal year has come to an end, so it is a good time to reflect on the triumphs and trials experienced by Belize's sport fishing industry. CZMAI and its stakeholders are looking forward to the 2019/2020 fiscal year with open minds and steady hands as we continue to work towards a sustainable sport fishing industry.

Trial: Illegal Catching and Selling of Protected Species

Permit, Bonefish and Tarpon are all protected under S.I. 114 of the Fisheries Act in Belize. However these fish species are still being harvested and sold at local fish markets across Belize. One of the main drivers behind this activity is lack of knowledge in relation to Belize's sport fishing regulations.

Triumph: Increase Education and Outreach Activities

In response to this growing concern, CZMAI has worked tirelessly to improve its education and outreach activities during the 2018/2019 fiscal year. These activities include attending science fairs and expos, launching multiple social media campaigns producing and sharing brochures and other educational materials. CZMAI will cap off these activities with launching a sport fishing sign campaign at the end of the fiscal year. The goal of the campaign is to place a sign at key local markets which will inform the general public of the protected status of these fish species to help encourage compliance with the sport fishing regulations.



Finalized Sportfishing Sign

Trial: Illegal netting activities

In 2018, the sharing and recording of illegal gill nets encounters has increased via social media platforms leading to their impact on protected species, marine mammals, sea birds, sea turtles and other fish species being brought into the eye of the public. There are plenty of anecdotal accounts of encounters by sport fishers with what appears to be illegal gill nets; stakeholders believe that these activities are having an adverse impact on the population of sport fishing fish species.

Triumph: Government Appointed Gill net Task Force

This trial brought about more public scrutiny and outcry; partly leading to the government to appoint a gill net task force. This task force is comprised of members from the NGO community, Government Departments, Commercial fishing Stakeholders, and Sport fishing Stakeholders. The objective of the task force is to develop recommendations to guide the government on the way forward as it relates to the management of gill nets in Belize.

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Triumph: National Sport Fishing Association

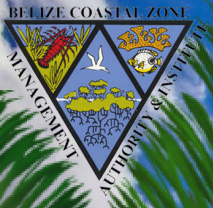
In the 2018/2019 fiscal year CZMAI successfully worked along with sport fishing stakeholders to form a national sport fishing association for Belize. This association has representation from all sport fishing stakeholder communities across Belize, the list of representative is as follows;

<i>Representatives Name</i>	<i>Stakeholder Community</i>
Dennis Garbutt	Punta Gorda
Eworth Garbutt - Eloy Cuevas	Placencia
Lincoln Westby - Lloyd Nunez	Hopkins
Misha Burgard - Debbie Burns - Stuart Doley	Belize City
Phillip “Billy” Leslie - Roberto Bradley	San Pedro, Ambergris Caye
Craig Hayes	Turneffe Atoll

These representatives were elected by the stakeholders of each location to represent them at the national association so that their concern can be voiced and we can plan our way forward together.

Triumph: Increase Technical Capacity of Sport Fishing Staff

In the 2018/2019 fiscal year CZMAI invested in its human resources, the team attended multiple trainings, seminars, workshops and other such educational activities in order to help enhance the technical capacity of the staff. CZMAI recognizes that in order for it to continue its good work on its way forward properly trained staff are needed.



March Madness PT. 2

Goff's Caye Excursion

Sunday, March 24th
Boarding at Radisson's Dock at 8:30 am

TICKET INFO

ADULT	CHILD
\$35.00 BZE	\$25.00BZE

FOOD AND DRINKS ON SALE

FAMILY GAMES

MUSIC ON THE ISLAND

TICKET LOCATION:

Princess Margaret Drive at CZMAI Office



Flood Prevention Training

by Delwin Guevara, GIS Technician

During the month of November CZMAI's Data Manager and GIS Technician attended a Flood Prevention training. This training was a collaboration between the Ministry of Agriculture, Fisheries, Forestry, the Environment and Sustainable Development with the Taiwan International Cooperation Development Fund. The training was held from November 26th to November 30th, 2018 at the Santa Ignacio/ Santa Elena Town Council building in the Cayo District.

The training focused on several areas that would aid in planning for future flooding events. Such areas included an introduction to and application of Remote Sensing, introduction of Geographic Information Systems, and the applications of flood potential maps, which all feed into the construction of flood warning capabilities in Belize. Additionally, as part of the training the participants had a crash course on HEC-HMS and HEC-RAS, which are programs used for hydraulic models and to create flood simulations.



Several organizations were present at the training, including representatives from the Belize Coastal Zone Management Authority and Institute (CZMAI), Forest Department, Department of the Environment, National Emergency Management Organization, Friend for Conservation and Development (FCD), BECOL, and the University of Belize. During the week of training a flash flood occurred in the Cayo District which reminded the participants of the importance of understanding flood and the importance of creating flood potential maps. Several locations such as Bullet Tree Falls, Georgeville and sections of the George Price highway were flooded with water. San Ignacio in particular had a lot of flooding which lead to several building inundated with water and debris materials were left on the street as a result of flood.

As we move deeper into the 21st century, we are experiencing unpredictable and extreme weather events. Global warming is shifting rainfall patterns, making heavy rain more recurrent in many areas around the world. The results of this training will aid stakeholders in preparing for these floods by using the several topics learnt throughout the course. This will better prepare stakeholders and communities by identifying potential flooding areas and use hydraulic models to aid in management decisions.

CZMAI Hosts the 4th Annual Coastal Awareness Week

by Ariese Briceno,



Coastal Awareness Week (CAW) 2018 was celebrated from October 22nd to 27th 2018 under the theme “Celebrating 20 years of promoting sustainable use and management of Belize’s coastal zone”. The purpose of the week of events was to:

- i.) To commemorate the 20th Anniversary of Coastal Zone Management Authority and Institute;
- ii.) To highlight the need for synergy among Belize’s economic, environmental and social development;
- iii.) To increase public awareness on sustainable development practices in various sectors.

In an effort to share this information to the public in a manner that was both thought-provocative and easy to understand, CZMAI hosted four major activities. The events were a huge success and garnered support from both the public and private sectors. Most notably we would like to acknowledge the tremendous support from our main sponsors; The Inter-American Development Bank, Protected Areas Conservation Trust, Wildlife Conservation Society, Go Fish Belize and Belize High Sea Fishing Unit.



CAW 2018 Coastal Champions

The following are the major highlights from the week’s events.

Coastal Awareness Trivia Challenge

On Tuesday October 23rd, CZMAI held the Fourth annual Coastal Awareness Primary School Trivia Competition at the Bliss Institute for the Performing Arts. The purpose of the event was to raise awareness through knowledge building and provide a forum for primary school students to learn about the Belizean Coastal Zone in a way that was both informative and fun. This competition featured participants from 10 primary schools throughout Belize City who competed for the grand prize of \$500. Participating primary schools and student representatives included:

<u>School</u>	<u>Participant</u>	<u>School</u>	<u>Participant</u>
All Saints Anglican School	Amanda Balderamos	St. John Vianney R.C.	Kenric Logan
Belize Elementary School	Aspen Peralta	St. Joseph R.C. School	Caleb Williams
Holy Redeemer	Shalynee Cowo	St. Luke Methodist Primary	Zaphir Barela
Queen Square Anglican	Nelson Hill Jr.	St. Martin’s De Porres	Phillip Kisling
St. Ignatius Primary	Shelia Ayala	St. Mary’s Anglican School	Jaslynn Liu

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After the Final round was completed, points were tallied and the victorious student was Miss Shelia Ayala, who represented St. Ignatius Primary School. Miss Ayala earned the grand prize of \$500 and a tablet. The second prize of \$300 and a tablet went to Miss Aspen Peralta, from Belize Elementary School and Mr. Caleb Williams of St. Joseph R.C. School took home the third prize of \$200 and a backpack. CZMAI would like to thank all the participants, teachers, parents, sponsors, and judges for helping to make the event a success. We believe that through this competition we were able to share information on major topics that relate to the sustainable use and management of Belize's coastal zone.



1st Place Winner: Shelia Ayala



2nd Place Winner: Aspen Peralta



3rd Place Winner: Caleb Williams

Tertiary Level Competition/Coastal Informational Fair

On Thursday October 25th, CZMAI hosted the second Tertiary Level Competition and Business Fair. The competition, which was held at the Falcon Field in Santa Elena Cayo, focused on inspiring students to take a proactive approach to environmental issues by preparing an implementable research proposal to investigate and mitigate a problem facing their community. CZMAI invited one group from each tertiary level institution across Belize to submit a Research proposal addressing a coastal issue impacting their community. Groups were judged on the areas mentioned using criteria developed by a small focus group. The competition was coupled with an informational fair during which participants gave their presentations. Simultaneously, CZMAI invited various organizations to host informational booths in an attempt to disseminate information to the general public on their work. These organizations included:

- Turneffe Atoll Sustainability Association (TASA)
- Pesticide Control Board
- Belize Audubon Society (BAS)
- Inter-American Development Bank (IDB)
- Department of Environment (DoE)
- Oceana Belize
- Forest department
- Belize Fisheries Department
- Center for Environment, Fisheries and Aquaculture Science (CEFAS)
- Solid Waste Management Authority
- A&S Covers



CZMAI received submissions from two junior colleges. These persons were competing for a first prize of \$1500, second prize of \$1000. The participating schools and their research idea were as follows:

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First Place: Narciso Sho Jr.

The Research proposal that he submitted was geared towards addressing the erosion problem being faced by the Dangriga town. The paper discussed the drivers behind the erosion issue as well as potential solutions for each driver.



First place cheque being presented to Mr. Sho by Dr. Sanders

Second Place: Adrian Witzil

The Research Proposal that he submitted was centered on tackling the erosion issue being faced by the town of Corozal as well as the need to re-enforce the sea wall. He discussed the impacts of erosion on both the sea-wall and the town folks and discussed the financial requirements needed to fix the sea-wall.



Second place cheque presented to Mr. Witzil

Judging for the competition was done by a small panel made up of individuals from organizations outside of the CZMAI. This panel included Dr. Robin Coleman, IDB; Mr. Aldo Cansino, Department of Environment, and Dr. Matthew Sanders, Centre for Environment, Fisheries and Aquaculture Science. At the end of the competition the points were allotted and was tallied and the winner was determined.



Judges of the tertiary level competition: L-R Dr. Robin Coleman, Mr. Aldo Cansino, Dr. Matthew Sanders

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Coastal Awareness Week Award and Closing Ceremony

On Friday October 26th, the CZMAI hosted the Coastal Awareness Week Awards and Closing Ceremony at the CZMAI's Training Room in Belize City. Our host for the evening was Mr. John Palacio. The purpose of the event was to celebrate the official close the week of activities and to recognize close partners/collaborators that have been integral to CZMAI's work over the years. This year's awardees are as follows:

In gratitude for their unrelenting support for the CZMAI and the advancement of the organization's objectives the following individuals were honoured:

Dr. Manuel Esquivel
Hon. Henry Young
Ms. Janet Gibson
Mrs. Imani Fairweather Morrison
Mr. Vincent Gillett
Dr. Leandra Cho-Ricketts
Mr. Colin Gillett



In gratitude for their generous Sponsorship of Coastal Awareness Week 2018 the following organizations were honoured as Champion Sponsors:

Wildlife Conservation Society
Belize High Seas Fishing Unit
Protected Areas Conservation Trust
Inter-American Development Bank
Go Fish Belize



In gratitude for their generous Sponsorship of Coastal Awareness Week 2018 the following organizations were honoured as Coastline Guardian Sponsors:



Run for the Coast

To cap off the week CZMAI hosted the fourth annual Run for the Coast. The run took place in the wee hours of Saturday October 27th from 5:30 am to 7:00 am. This event was done in an effort to raise awareness about the value of the Belizean coastal and marine resources. Through this 3 mile leisure run/walk from the BTL Park to the Baron Bliss Lighthouse and back CZMAI aims to encourage Belizeans to appreciate services that the coastal zone provides. In this case that service is the aesthetics it provides to personal well-being. There were approximately 205 participants and tons of awesome prizes that were raffled. At the conclusion of the run refreshments were provided to all participants.

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Scenes from the 4th annual Run for the Coast

New Faces at CZMAI



Miss Azelea Gillett

Azelea Gillett was born in Belize City and at the age of two moved to San Ignacio, Cayo with her mother. She then attended high school in Belize City. After she then pursued her Bachelor's Degree in Biology from the University of Belize. While pursuing her studies, she took a class called Coastal Zone Management which opened her eyes to the importance of sustainable use of Belize's coastal resources. Azelea wishes to contribute to the informed management of Belize's coastal resources through her post as a Coastal Planning Technician at CZMAI.



Mr. Delwin Guevara

Delwin is currently the GIS Technician for the Coastal & Marine Data Centre. Delwin holds a Bachelor's degree in Natural Resource Management from the University of Belize. He is responsible for providing technical support to the CMDC to maintain a centralized and accessible center for information that will guide planning and decision making for sustainable use and management of Belize's coastal resources. Prior to CZMAI, Delwin has taken many opportunities which have ranged in scope and discipline; from working with bats in Southern Belize, Volunteering for national GIS conferences and events, to collecting data in various forests of Belize as a Forest Research and Monitoring Intern. Delwin aspires to make great contributions to CZMAI.

Latin American & Caribbean Symposium on Ocean Acidification

by Gilbert Andrews, Environmental Lab Technician



Latin American & Caribbean Symposium on Ocean Acidification Participants

Ocean acidification (OA) – the unprecedented decline in the ocean’s pH as a result of carbon dioxide emissions – poses significant threats to ecosystems and economies in the Latin America and Caribbean region. This is especially true for Belize since two of our major contributors to GDP, tourism (coral reefs) and fisheries (conch and lobster), are highly susceptible to the potential negative effects associated with Ocean Acidification. In line with this realization, two CZMAI staff, namely, the Coastal Planner and Environmental Lab Technician were selected along with an Assistant Professor from the University to Belize, to attend “The Latin American and Caribbean Regional Symposium on Ocean Acidification” held at INVEMAR in Santa Marta, Colombia from January 21st – January 24th, 2019. It was carried out under The Ocean Foundation’s International Ocean Acidification Initiative, with support from The U.S. Department of State, The Swedish International Development Agency, The Global Ocean Acidification Observing Network (GOA-ON), and The Latin American Ocean Acidification Network (LAOCA) and hosted by INVEMAR.

The symposium brought together scientists, industry practitioners, and policymakers from throughout the region to discuss and discover strategies for building resilience to ocean acidification. Specifically, the symposium highlighted strategies for building low-cost monitoring systems, techniques for building resilient seafood supply chains including through technological interventions, and policy frameworks for building economic and social resilience at regional and national scales. Finally, the symposium focused both on existing practices and future options for researching the impacts on and the development of adaptation plans for coral reef ecosystems. Therefore, participants gained an understanding of the implications of ocean acidification; the tools available to integrate ocean acidification monitoring, mitigation, and resilience into their work; and opportunities and avenues for interdisciplinary regional collaboration.



Participants attending opening plenary

Over the four days, discussions were divided into three major categories, Biology, Chemistry and Policy, and participants were asked to attend the sessions that were aligned with their interests. Generally, the Biology discussions were focused on understanding the effects of OA on species that rely on carbonate compounds to produce a part of their structures, i.e. corals and shellfish.



Demonstration of methodology for live biological monitoring

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Facilitators presented several case studies which demonstrated how people from the private sector managed to overcome adverse effects from localized acidification events and outlines practical ways of carrying out live lab studies. Chemistry sessions, on the other hand, focused on how carbon emissions from human activity has caused an imbalance in the global carbon pump leading to OA. Additionally, it examines the different methodologies used to measure parameters for OA, including pH, Total Alkalinity, pCO₂, and Total Inorganic Carbon both through lab analysis and in situ measurements.



CZMAI Env. Lab Technician viewing demonstration of carbonate chemistry calculations



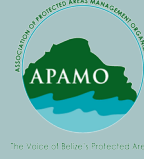
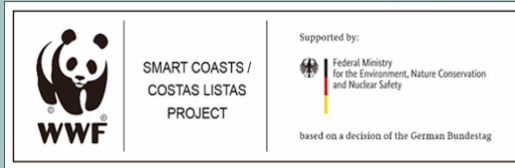
Coastal Planner attending policy discussion

Finally, the policy sessions looked at strategies to address OA on the local, national and regional levels through management interventions and addressing capacity needs.

Attending the Latin America and Caribbean Interdisciplinary Symposium on Ocean Acidification provided valuable training for CZMAI's staff to incorporate OA in coastal zone management. Through this training, CZMAI's Coastal Planner and Environmental Lab Technician developed the skills necessary to then practically tackle these issues in Belize and to complement ongoing research collaborations in OA. Most importantly, however, was that CZMAI was able to network with like-minded experts from around the region with similar concerns and objectives and join with them to investigate this problem and potentially identify practical solutions.

Climate- Smarting marine Protected Areas and Coastal Management in the Mesoamerican Reef region

by Samir Rosado, Coastal Planner



The World Wildlife Fund, in conjunction with Stanford University through Natural Capital Project (NatCap) and Columbia University presented a regional project to the International Climate Initiative (IKI), which is managed by the Ministry of Environment of the Federal Republic of Germany. The proposed project focused on mainstreaming climate-smart principles into Marine Protected Area Management and Coastal development policies in countries bordering the Mesoamerican Reef (Mexico, Guatemala, Belize and Honduras) with a view to improve the adaptive capabilities of coastal communities in the region. The project proposal was approved in May 2018, to be implemented over the next 4 years. There was an initial meeting held with sub contractors from all countries in November 2018 at the Radisson Hotel in Belize City. During the meetings the participants were introduced to the project and project objectives and participated in activities that will be replicated in during the project.



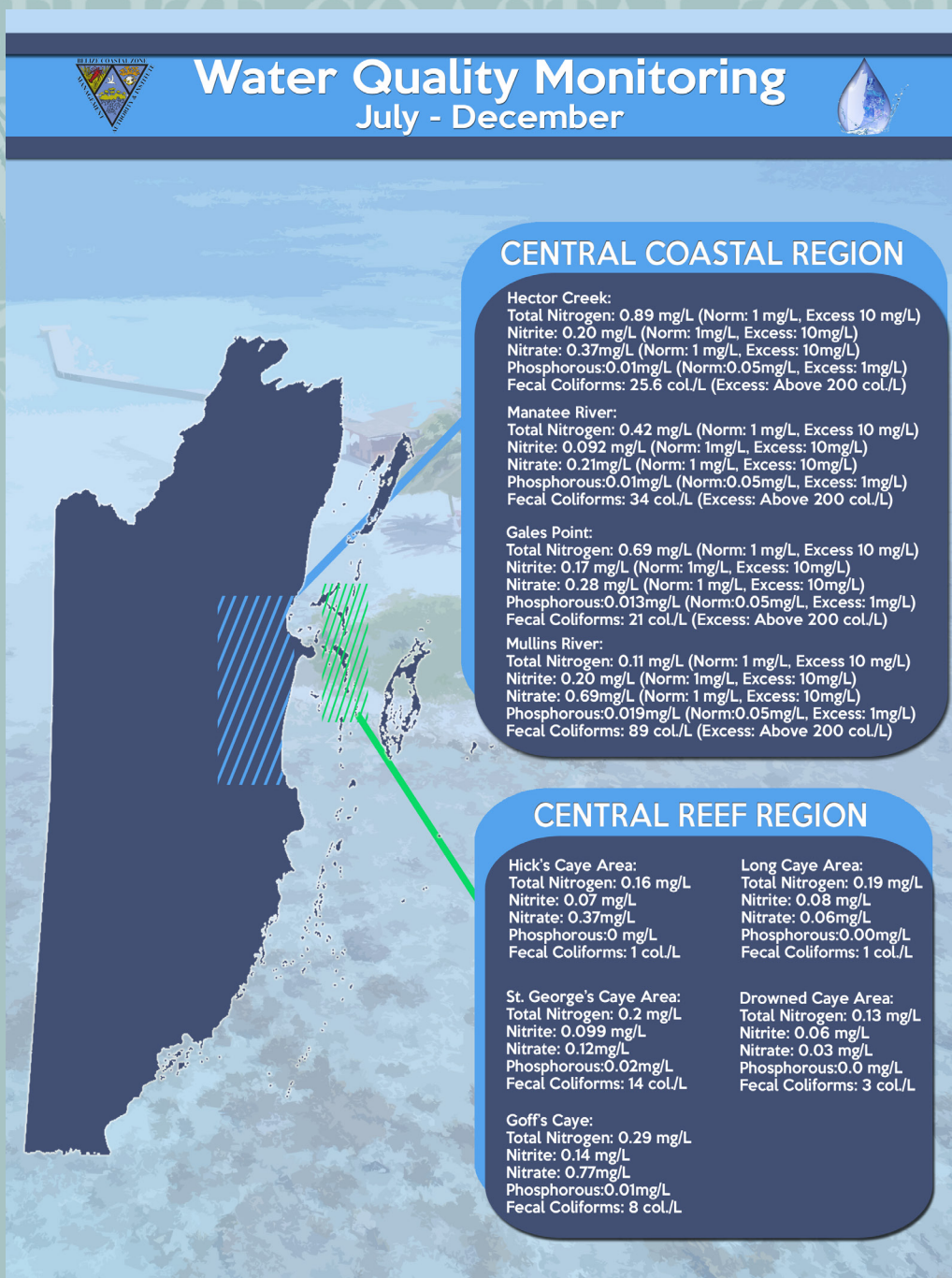
Participants at the first stakeholder training workshop under the IKI Climate-Smarting MPAs Project

In Belize, the project's objective is to increase the adaptive capacity to climate change of selected coastal communities that are dependent on coastal and marine natural resources and protected areas (Northern, Ambergris Caye, Caye Caulker, South-Northern, South-Central and Southern Planning Regions). This will be achieved by the preparation of a continuous climate and ecosystem information database that will feed into climate models, ecosystem assessments and management scenarios to be designed by the project. In Belize, the CZMAI and APAMO were subcontracted to execute project activities over the four (4) years. Local subcontractors will collect and provide data to establish baselines that will be fed into ecosystem service models. Also, to further understand the current effects Climate Change is having on local communities, the project team has been conducting a series of "Climate Talks" designed to collect first hand accounts of the struggles communities are already facing. Additionally, the project team will attempt to get recommendations on ways to utilize existing ecosystems to help mitigate problems identified. At the end of the project one of the identified interventions will be implemented to address a climate change related issue. Communities within the northern and southern areas of Belize can look out for "Climate Talks" that will be hosted in their areas.

Water Quality Monitoring Unit Update

by Samir Rosado, Coastal Planner

The CZMAI WQM Unit conducted monthly water quality sampling trips in the Central Coastal Region from July to December 2018. The averages of the parameters being measured are within the range for normal marine/aquatic ecosystems. It was observed that sample sites near populated areas showed slightly higher averages, however none of them were over or near the threshold that would trigger eutrophication/algal bloom events. With regard to fecal coliforms, however, it was observed that following periods of rain, all sites except Gale's Point had spikes in the number of colonies per Liter. Most noticeable was Mullins River where in several cases the colonies were too numerous to count (TNC). The average of 89 col./L was calculated using the 200 col./L limit since above this value would trigger a TNC.



MISSION STATEMENT:

Our Mission is to lead the sustainable use and planned development of Belize's coastal resources through increased knowledge and the building of alliances for the benefit of all Belizeans and the global community.



Chantalle Samuels
Arlene Young

Chief Executive Officer
Director

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Coastal Planning Technician
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