

December

2022

BICA



Educate

Protect

Conserve

magazine

inside this issue



SCTLD

10/09/2020

Coral disease

Affects +22 species

spread to Bay Islands

Are the activities that we do on a daily basis to conserve in a participatory, transparent and sustainable way the coastal marine resources and the ecosystem services which they provide for the social and cultural well-being of present and future generations in the Bay Islands.



Come visit us at our offices:
New Airport Road, Utila
Sandy Bay, Roatan
Armadores, G.Uanaja

or learn more about what we do at our
website: www.bicainc.org



ENVIRONMENTAL EDUCATION PROGRAM

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ENVIRONMENTAL EDUCATION

For 2022, the Utila environmental education program team made up of BICA, KANAHAU, FIB and WSORC in collaboration with the Jasper Utila Animal Shelter covered a total of 25 environmental issues in 25 weeks, from March to November 2022. Achieving a total of 575 workshops throughout the educational year, with a total of 310 students attending weekly, and with the support of 16 teachers who provided us with a space in the natural sciences subject to teach environmental issues.



On Roatan, we continued working with students in their senior year in four high schools (Jose Santos Guardiola, Methodist, Church of God and Bay Islands International School); at two community centers (Sandy Bay and Flowers Bay) and conducted 17 of talks in 26 educational centers; attending over 3,228 students.

On Guanaja, we conducted 8 talks to 121 students and 2 target groups (fishermen (15), women and naval officers (20)). We included guided visits to the protected areas on the island of Guanaja (bird watching (26), reforestations, clean ups and more).



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WILL YOU KEEP FEEDING THE GARBAGE MONSTER

In 2022, the graphics for the story of the Environmental Education campaign on waste "Will you keep feeding the garbage monster" was developed by the coordinators of the environmental education and community development programs in the three chapters. Furthermore, they are creating designs for puzzles and posters to be used in the campaign.

The story will be shared online and printed to be shared in schools and communities. As part of the campaign, we began hands-on activities with



students in schools and at community centers; these activities consist of receiving a talk on waste and ways we can make small changes to decrease the use of single use plastics and then activities such as specialized clean ups, signs to place in their communities and games which contribute to increasing awareness.

In 2022, 70 middle school students received talks on solid waste and conducted clean ups in and around their communities.



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COMMUNITY AWARENESS ON SEATURTLES



A pride campaign on sea turtle conservation was implemented in 2022. It consisted of workshops using the 'The whole system in the Hall' methodology. A total of 35 people including tourism groups, the educational sector, and authorities participated. Among the objectives was to collect information from the community in order to develop plans in which all groups in a locality can actively participate.

To increase awareness on sea turtles in Utila, 4 talks were implemented at the educational centers, including the

communities of Los Cayitos. They covered general information on the species, sea turtles in Utila, importance and threats, a total of 505 students participated.

An Ecotourism diagnosis was made with the objective of evaluating if it is possible to develop ecotourism activities in the nesting seasons of sea turtles, 363 national and foreign tourists participated in the survey in which 65% of those surveyed responded that they were willing to pay tourist packages to do activities with sea turtles, where we also found that 40% of those surveyed would be willing to pay \$20, followed by 17% willing to pay \$30.



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BIRDS OF GUANAJA

AVES DE GUANAJA

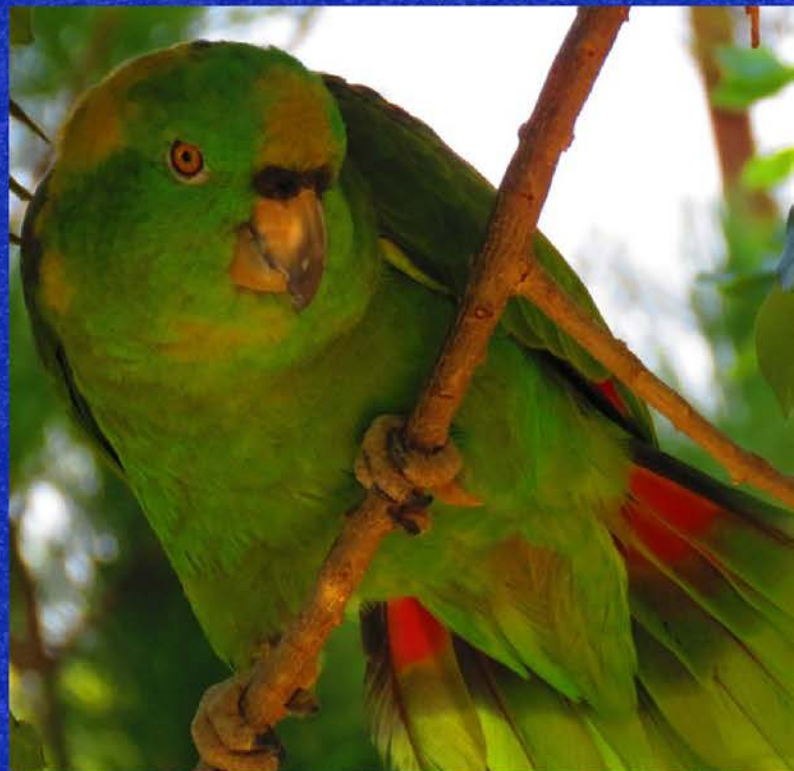


This guide was prepared by the biology interns, Elisa Murillo and Raquel Alvarez, with the objective of having a guide of the avifauna present on the island of Guanaja, and in turn facilitating the identification of the birds of Guanaja for local guides, authorities or visitors interested in learning about the diversity of birds and serve as a tool that helps increase environmental awareness to increase active participation in the protection of vulnerable and endangered species. This guide contains all the species that have been reported over the years for the

Island of Guanaja through the e-Bird citizen science platform, in the 24 Hotspots registered for the Island, of the 774 species that our country houses, Guanaja has 178 species belonging to 40 families between residents and migrants, which represents 23%, however we believe that this number is not exact since more sampling effort is needed throughout the Island to have accurate data.

The list of species used in this document includes their scientific name, common name in English and Spanish, family, habitat, permanence status, IUCN conservation status, and diet.

Visit our website to download the guide.



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FISHING LIVELIHOODS & LIONFISH MARKETS

The Utila Cays have long been dependent on marine resources, this project piloted an alternative source of income for 10 women from the Cays that included training and certifying a small group to safely hunt and dissect invasive lionfish, and a larger team to design and sell jewelry from the fins and skin of the fish, it should be noted that this is the first alternative livelihoods project in the Cays aimed at women (all previous projects were for men). In addition to providing start-up capital and training for the women to



develop their own source of income from lionfish products, the project also trained two women to work as dive masters, an occupation long dominated by foreigners.

In all, ten women received training in lionfish dissection and jewelry making. Four women were certified in PADI Open Water (OW), Advanced Open Water (AOW), Fish, Benthos and Coral Identification and Lionfish hunting. Two women achieved Rescue, Emergency First Responder (EFR) and Divemaster (DM) certification, and received their own diving equipment, completing this stage of the project in August 2022.



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SAVINGS CLUB

The saving clubs began in 2020 on the island of Guanaja with two clubs (Aramacao and Soñadores) and only 30 participants. Since then the initiative has grown to five clubs and 175 members through the leadership and coordination of Alma Zaldivar, the secretary of the Guanaja Chapter board; who has taking the lead on this project since day one.

Through this effort, the members have been able to access low interest loans.

The clubs have saved over 2,000,000.00 Lempiras, of which a percentage is for community projection.



Members of the clubs have shown solidarity through the small donations for community members in need of medication, transportation off island for people with health problems, funeral costs, donation of food and home appliances. As well as materials and equipment for schools and churches.

If you live in Guanaja and would like to be a part of this initiative please contact us at info.guanaja@bicainc.org

We would like to expand this project to the island of Roatan and Utila, if you are interested in supporting these efforts please contact us at info@bicainc.org



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TRAGEDY IN THE CARIBBEAN



In the early morning of October 2, 2021, a fire destroyed more than 40% of the urban area of El Cayo Bonacca, despite the efforts of men and women to put out the fire that was spreading faster and faster; destroying homes, businesses and everything in its wake. Unfortunately, the island of Guanaja does not have firefighters or a fire station. Every effort made were by men and women putting their lives at risk by trying to put out the fire that was consuming their homes and belongings. Luckily, there were no fatalities, and this was thanks to the fact that when

everything was believed to be lost, the firefighters from Roatán, together with the helicopters that flew from the capital, managed to control and put out the fire.

In the afternoon, BICA together with members of the savings clubs began with humanitarian response actions; creating a database of the victims. The results indicated that over 120 homes were affected, and more than 2500 people.

We created a GoFundMe and raised over \$2,625 that contributed to providing essential needs to these families and other institutions such as CASM, an organization that continues to help the victims financially and psychologically, joined this cause.



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BLUE FLAG BEACHES

The Blue Flag is an award that rewards good environmental and hygienic-sanitary practices of the beaches around the national territory. It is led by the Honduran Institute of Tourism. The majority of beaches in the Bay Islands with the award have been submitted by the community boards and work closely with other organizations to keep up with the standards. However, the award is open to any interested parties that is willing to keep up with the standards.



Chepes was the first beach in the country to receive the Blue Flag Beach award and Utila is the first municipality to receive three blue flags in 2022:

- Chepes, Sandy Bay Beach
- Bando Beach
- Neptunes

In addition, in 2022, Half Moon Bay Beach and Camp Bay Beach on the island of Roatan received the Blue Flag for a second time.

If you are interested in submitting a beach to receive this award you can contact dan.mejia@iht.hn.



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MY COMMUNITY : MY RESPONSIBILITY

In 2019, we began a project in the community of Pensacola to improve the management of potable water and basic sanitation. Since then, we have followed this methodology to continue to strengthen the water board and expand to other communities.

By 2023, we expect that the complete potable water network design for Pensacola will be implemented. Phase 2 and 3 are currently being implemented with funds from ZOLITUR. At the end of these phases, every home will have a meter which will improve their consumption.



As part of this program, we have been visiting other communities to collect the socio-economic baseline to be able to apply for funds to improve their potable water and sanitation systems. To date, we have collected baseline data for the communities of Coxen Hole, Sandy Bay, Camp Bay, Diamond Rock and Punta Gorda.

Lastly, when we are implementing these project in the communities; we work closely with the schools carrying out the environmental campaign "Water, every drop counts". That seeks to create awareness on the importance of conserving water.



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PILOT SEPARATION PROJECTS

In 2019, we began surveys in the community of Pensacola on the interest of individuals separating their waste at home. To date, we have 19 homes separating recyclable waste (aluminum and plastic bottles). Over the years we have collected X lbs of recyclable waste (2021-286.82 lbs, 2022-216.26 lbs).

In 2022, through the "Waste, People and Reef Health" project we have expanded this pilot separation project to the three islands (Utila, Roatan & Guanaja). On Roatan, we have added the community of Sandy Bay west of AKR. To date, 20 homes are separating



recyclable waste and we have collected 406.7 lbs. This waste is collected at the community center in Sandy Bay by the Recyclers Association monthly.

In Utila, the community of Los Cayitos implemented a waste separation project in 2021 and this year the community of Camponado will begin their waste separation project.

In Guanaja, surveys have been conducted in the communities of Armadores (15), Pelicano (17) and Vista Hermosa (30); of these 62 homes, 46 are interested in participating in the pilot project.



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WASTE CHARACTERIZATION STUDY

Since 2019, the municipality of Roatan has been taking steps to improve the waste management problem we have through the implementation of bans on some single use plastics. As well, as the purchase of land for a new landfill or other systems to manage waste.

To make informed decisions on waste management for any municipality a solid waste characterization is implemented to have reliable data and information on waste production, separation, recycling, perception from the different economic sectors and so forth.



In December 2022, we spent 16 days conducting a solid waste characterization study in conjunction with the municipality of Roatan (Environmental and Sanitation Departments).

We received training via zoom from the General Direction of the Environment (DGA in spanish). Results from the study will estimate production of waste per day, production of waste per capita, and composition of waste. This will facilitate informed decisions for waste management in the municipality of Roatan.



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CITIZEN SCIENCE: BRAND AUDITS



Brand Audits are specialized cleanups, which means that the garbage is classified according to the type of material and product, if it is recyclable or non-recyclable. This initiative belongs to "Break free from plastic", this is a global movement that envisions a future free of plastic pollution.

We are currently implementing our second phase of the Waste, People and Reef Health Project. As a part of this project we are implementing brand audits in the Bay Islands. In Roatan in 2022, we have implemented six brand audits in four communities (Gravel Bay,

Flowers Bay, Sandy Bay and West End). On Utila, between March and June, 2022, four different brand audits were conducted in Utila in different places, Pumpkin Hill in the Northeast, Airport Beach, and two different schools. The audits revealed that Coca-Cola, Pepsi and Sula are the top contributors to the plastic pollution of Utila's beaches, making up 67% of the total plastic collected (40% Coca Cola, 15% Pepsi, and 12% Sula). The other 33% of plastics found were from other brands. On Guanaja, we conducted two brand audits on who beaches (Armadores and Coral Bay). These activities are implemented with volunteers.

From data to change: single use plastic ban in Roatan Honduras

Walter Johnson¹, Graciela Brady², Laura Ramirez³, Joel Amaya⁴

¹Waste Commission Executive (BICA), ²Environmental Law Alliance Worldwide (ELAW), ³Waste Commission Executive (BICA), ⁴Environmental Law Alliance Worldwide (ELAW)

Introduction

There is an effective institutional or state government in the handling of domestic and industrial waste in Roatan. Existing laws have been developed and implemented, and are generally located near the sea, schools, and religious centers (Figure 1). Furthermore, the waste management system and services, including collection, including the collection of waste, are generally located near the sea, schools, and religious centers (Figure 1). Furthermore, the waste management system and services, including collection, including the collection of waste, are generally located near the sea, schools, and religious centers (Figure 1).

Methods

A systematic approach was used to collect the data on the single-use plastic ban. The data was collected through a series of brand audits. The data was collected through a series of brand audits. The data was collected through a series of brand audits.

Results

From 2018, 10 brand audits were conducted on the island of Roatan. The data from these brand audits indicated that 10% of the total plastic collected was made up of single-use plastic bottles. The data from these brand audits indicated that 10% of the total plastic collected was made up of single-use plastic bottles.

Conclusions

Information gathering has been a positive mechanism to promote proper waste management. The data from these brand audits indicated that the majority of waste was plastic. The data from these brand audits indicated that the majority of waste was plastic.

References

Acknowledgments

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CITIZEN SCIENCE: MICROPLASTIC SURVEY

Through microplastic studies we obtain a baseline of the level of contamination of plastic waste on our beaches, bodies of water and marine organisms. Currently, microplastic surveys are being carried out on the beaches of Utila, Roatan and Guanaja; as part of the Big Microplastic Survey initiative.

The data generated from these surveys will contribute to understanding and finding solutions to the waste problem we have on our islands and allow us to promote changes to the municipal laws.



We do these surveys with students from the schools, kids in the communities and volunteers as a hands-on activity to learn about the effect of waste in our communities.

In 2022, we conducted the following surveys:

On Roatan, we conducted two microplastic survey on two beaches in the community of Sandy Bay and Camp Bay.

On Guanaja, we conducted seven microplastic surveys on five beaches (Dina, Michael Rock, Coral Bay, Sandy Bay and Soldado).



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CITIZEN SCIENCE: BEACHED ANIMALS

On Thursday, June 9, in conjunction with the Institute of Forestry Conservation and Wildlife (ICF) and the municipality of Roatán, a 3.7-meter American crocodile (*Crocodylus acutus*) was collected in the community of French Harbour; which was reported dead earlier that day.

The analyses showed that the individual was an adult male, without any external wounds. However, his stomach was full of solid waste, including: 1 sack 70cm long, 2 plastic bags, 1 plastic fork, 1 plastic straw, 1mm microplastics, fishing line and 3



hooks 10cm long; and even pieces of glass. We believe that all of this plastic was what caused the death of the individual and we want to remind the population of the importance of reducing our daily use of plastic and putting waste in its place. Crocodiles, despite being a species feared by humans, are of great importance in marine ecosystems. They are currently classified as a vulnerable species on the red list of threatened species due to: the destruction of their habitat (which causes us to see them closer to communities), illegal hunting and now we can also say pollution.



Plástico encontrado en estómago de cocodrilo

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WILD & FREE: BIRDS

BICA is a member of the Honduran Association of Ornithology (ASHO); created the 17th of July, 2010 as an initiative of biologists, bird watchers, photographers and conservationists, in order to promote scientific research and conservation of the birds of Honduras. It also seeks to encourage bird watching tourism and promote environmental education among Honduras, ASHO is also made up by different birding clubs throughout the country. We are a part of Club Auropalliata, which is located in the Bay Islands; and created in 2020 by locals



to promote bird conservation and tourism in the Bay Islands. We have been supporting and participating in different bird monitoring activities on the island of Roatan with the Club Auropalliata and Roatan Wildlife.

We have continued monitoring nesting sights for seabirds around the island of Roatan.

To date, we have been able to find three active sites of Least Tern, Bridled tern, Brown Noddy, and Roseate Tern nesting, and with the presence of Royal Tern, Laughing gull, Sandwich Tern and Brown booby.



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REGIONAL MARINE WATER QUALITY

Mid 2021 we implemented a component of a regional marine water quality monitoring in the Mesoamerican reef system (MAR). The sites were in high tourist traffic areas and low tourist traffic areas. Half of all sites were located close to the beach, and the others close to the reef.

Samples were collected in Mexico, Belize and Honduras.

We collected samples from sites around Utila and Roatan.

A total of 10 monitorings were conducted between October 2021 and



July 2022. In each of the sites, the following physicochemical parameters were measured: Temperature, Conductivity, pH, ORP, Dissolved Oxygen and Chlorophyll concentration. In addition to this, the following nutrients were quantified: Total Phosphate, Nitrate, Nitrite and Ammonia; as well as bacteriological samples (Enterococcus and Total Coliforms). The results will be compared between the three countries.



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ECOME



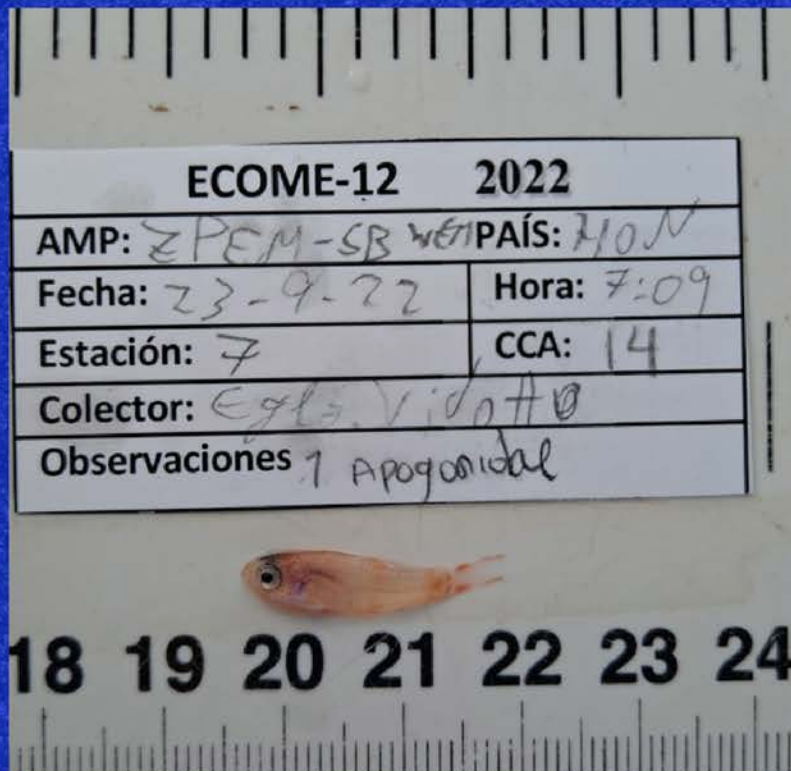
From September 20 to 28, we participated in the ECOME connectivity network. From Mexico to Honduras, NGOs co-managing marine protected areas monitored post-larval fish (baby fish) in order to study the interconnectivity and oceanographic processes of the Mesoamerican reef.

En el Ejercicio de Conectividad Mesoamericana (ECOME), se han colectado 69 ejemplares en la Zona de Protección Marina Sandy Bay -West End en Roatan. Este año se logró obtener mayor biodiversidad; 7 familias de importancia económica y ecológica

(Apogonidae, Tetraodontidae, Monacanthidae, Aulostomidae, Labrisomidae, Scaridae, Sphyraena).

In Utila, ECOME was carried out at Turtle Harbour and Rock Harbour sites, between September 20 and 28, 2022. In total, 90 specimens of larvae and postlarvae of 17 different species were collected, the predominant being the genus Apogonidae and the species Monocanthus tuckery and Ludjanus mohogani.

This year we were not able to implement ECOME in Guanaja.



ECOME-12 2022	
AMP: ZPEM-SB	PAÍS: HON
Fecha: 23-9-22	Hora: 7:09
Estación: 7	CCA: 14
Colector: Egle Vidotto	
Observaciones: 1 Apogonidae	

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INFLUX OF FISH LARVAE

The influx of fish larvae was monitored monthly from January to December 2015 using light traps at two reef sites: 1) lagoon and 2) crest, during consecutive nights associated with the new moon. We collected 2,506 fish larvae and identified 1,829 (73%) belonging to 15 families, with parrotfishes (Scaridae, 38.2%), anchovies (Engraulidae, 12.7%), sardines (Clupeidae, 4.2%), and filefishes (Monacanthidae, 2.3%) being the most abundant. At least 50 taxa (27%) were morphologically recognized but not identified or results demonstrate the high diversity of larvae arriving at the

SBWE-SMPZ to settle in nursery areas. Our findings indicate a significant contribution of Scaridae larvae to the SBWE-SMPZ, a fish family crucial for the proper functioning of reef ecosystems. We will apply efforts to identify these 50 taxa, thus contributing to a better understanding of the use of the reef zone and ultimately to the management and conservation actions of the marine protected area. We also identified trends in larval abundance during an annual cycle, with May, October, and December having the highest abundance of larval and post-larval fish.



Scaridae
Sparisoma sp.

3 mm

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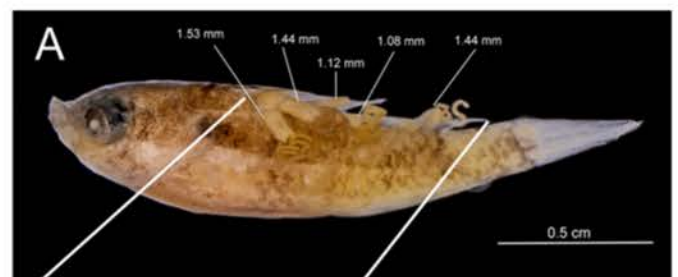
GUANAJA

NEW SPECIES OF COPEPOD

On September 9th, we participated in ECOMEX 11; this study is carried out every year in conjunction with the four countries that make up the Mesoamerican Reef (MAR) in order to know the connectivity of fish larvae in the region. In 2021, an individual in the larval stage of the Scaridae family (Parrotfish), Emerald nicholsina, was obtained in one of the traps from the reef lagoon of the Sandy Bay - West End Special Marine Protection Zone, Roatán, Honduras. The specimen had parasites attached to the body; which could not be identified with the naked eye. We sent



the specimen to the Colegio de la Frontera Sur (ECOSUR) in Mexico for further analysis. MSc Eduardo Suárez-Morales and Dr Lourdes Vásquez-Yeomans managed to identify the parasites. From the parasitological examination of the individual, several ovigerous female individuals of a mesoparasitic penellid copepod were found; these specimens were recognized as representative of an undescribed species of *cardiodectes* Wilson, 1917. The new species from Roatán is the second member of this copepod genus reported in the Caribbean region, after *C. boxshalli* Bellwood, 1981 from outside Jamaica (Bellwood 1981). It is also the second report of *cardiodectes* in a parrotfish.



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FISH SPAWNING AGGREGATIONS

FSAs are a conservation target in the Bay Islands National Marine Park because they are critical phases in the life cycle of fish. These sites are highly vulnerable to overfishing and in many cases have been eradicated, for which effective monitoring and management is necessary.

Species associated with aggregation sites, such as groupers and snappers, contribute significantly to the health of the ecosystems and the economy of our communities. They play an important ecological role, and are considered key indicators of reef health. The high

biomass of these fish is associated with high coral cover and resilience of coral communities.

Identification and monitoring of these sites is crucial to fostering sustainable fisheries and maintaining populations of these commercially important species. As well as our way of life, as islanders. Furthermore, in addition we conducted fish landing surveys in communities near the spawning aggregation sites.

In addition, will monitoring these sites we have picked up other important species on the cameras.

We will continue monitoring these sites to collect data that will allow us to help ICF make informed decisions on their proper management.



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REPORT ENVIRONMENTAL VIOLATIONS

Report environmental illegalities including non-compliance of environmental law, contamination, degradation and depredation in the Bay Islands; as well as in the following protected areas:

- Bay Islands National Marine Park,
- Turtle Harbour Refuge in Utila,
- Port Royal National Park in Roatan and
- Forestry Zone #1 in Guanaja.



You can contact us on each island at the following information:

Utila
Phone: (504)2425-3260
Email: info.utila@bicainc.org

Roatan
Cel: (504)9796-9956
Email: info.roatan@bicainc.org

Guanaja
Cel: (504)9824-3430
Email: info.utila@bicainc.org



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SAVE THE TURTLES

With the aim of promoting the conservation of sea turtle species; we conduct monitoring of nesting beaches since 1992 on Utila. Thanks to the efforts of Shelby McNab co-founder of the BICA Utila chapter and Glen Pedersen, the technician with experience in the management of marine fauna.

The Utila chapter implements annual monitoring of the nesting sites of sea turtles. We are pleased to announce that the 2022 turtle season is listed as the most successful nesting season, registering 74 turtle nests, the largest number of nests recorded in the entire



history of BICAs monitoring program.

All this is due to the great effort and invaluable support of our STAFF and volunteers who work every day to protect our sea turtles.

If you would like to support or volunteer in this monitoring and protection sub program please contact us at info.utila@bicainc.org



Todo esto gracias a nuestro equipo de patrulleros y voluntarios quienes nos ayudaron a monitorear las playas



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PATROL PROGRAM



Marine patrols are carried out throughout the year around the island and with special effort in the Fisheries Restoration Zones and around Turtle Harbor and Pumpkin Hill. Their objective is to monitor and provide greater protection to these sites in order to reduce the pressure on the objects of conservation in the Bay Islands National Marine Park (BINMP). The marine patrols were carried out successfully for eleven consecutive months (January-November), as a result, a total of 181 patrols have been carried out around the island, which is equivalent to 1,080 hours of effort,

covering a total of 2,912.74 km of the linear area covered.

As a result of this patrol effort, a total of 29 incidents have been registered, the activity that has been reported with the highest recidivism is the construction of coastal marine infrastructure such as docks, houses and wave breakers without the required legal permits, followed by illegal fishing and the removal and confiscation of illegal fishing gear and sand dredging.

Simultaneously, the number of sightings of wildlife observed during patrols has been recorded, with sea turtles being the most sighted organisms, followed by the presence of dolphins and the presence of thimble jellyfish colonies in the sea was recorded only once.



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SCTLD

SCTLD is still spreading through the Caribbean reefs. BICA has continued its efforts in combating this disease by applying antibiotic treatments to sick corals. At each site a sampling of coral cover was carried out to determine the most common species found, and which species were most affected by the disease.

On Utila, a training was conducted to increase capacity (12) and awareness.



On Roatan, from October-December 2022, a total of 18 sites were visited around the island, approximately 472 diseased colonies were treated.

On Guanaja, in the same months a total of 20 sites were visited and 250 diseased colonies were treated.

Lastly, we participated in the review and update of the National Strategy to address Stony Coral Tissue Loss Disease, within the framework of the Demonstrative Regional Dialogue Group (RGD) project that is developed in conjunction with the MAR2R Project and MARFUND through the Reef Rescue Initiative, conducted by the General Directorate of Biodiversity (DiBio-SERNA).



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CORALMANIA

Coralmania is an event of massive transplantation of different species of corals, which seeks to contribute not only with the conservation and restoration of marine biodiversity, but also with coastal protection. This initiative emerged in 2016 from the hand of the Dominican Foundation for Marine Studies (Fundemar), Puntacana Group Foundation, Counterpart International, CEBSE and The Nature Conservancy (TNC), with the support of the German Development Cooperation, GIZ. This transplant promotes a regional impact, so it is carried out in 3 countries



simultaneously: Costa Rica, Honduras and Dominican Republic. On Roatan, we participated in Coralmania 2022, on November 8 and 9, 2022, where 190 colonies of *Acropora cervicornis* were transplanted, with the support of 26 people; representatives of Co-managers (BICA, Zolitur, Municipality of Roatan), organizations such as Healty Reef and central government participation with the Institute of Forestry and Wildlife Conservation (ICF) and the General Directorate of Biodiversity (DiBio-SERNA).

On Utila, we supported the efforts of Utila Coral Restoration with this initiative.



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CORAL GARDENS

In an effort to increase our capability to improve our coral nurseries and restoration efforts we participated in trainings to learn new methodologies:

- In June and September 2022, we participated in the training courses part of the Triangular cooperation "Application of Innovative Tools for the Protection and Restoration of Coral Reefs in Honduras" through the General Directorate of Biodiversity (DIBIO-SERNA) with the support of the German Cooperation (GIZ)
 - Two technicians participated in the micro fragmentation course



in Dominican Republic by Fundemar, Fundación Puntacana & Wave of Change.

- Five technicians from BICA were trained in assisted sexual reproduction of corals implemented by the Roatán Marine Park, SECORE International and the California Academy of Sciences
- In November 2022, seven BICA technicians participated in the Coral Restoration Course provided by Fragment of Hope through funding from MARFUND. We learned macro and micro fragmentation techniques for staghorn coral (*A. cervicornis* & *A. palmata*).



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UTILA

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REEF BRIGADES

The reef brigade initiative is coordinated by MAR Fund and TNC, in order to take actions to be taken before, during and after natural or anthropogenic events that may affect the structure of the coral reefs in the MAR.

To date, one BICA technician was certified as an instructor (BICA Guanaja) and four technicians (BICA Utila and Roatan) and four ocean protectors (BICA Guanaja) were trained in the Bay Islands Post Reef Storm Response Brigades course.

Furthermore, as part of the New York Climate Week 2022, Zara Zuniga, BICAs



research associate, presented a video on the reef brigades and their importance in the discussion led by Karen Sack, ORRAA's Executive director on nature-related risks and the protective role of insurance with WTW.

The discussion focused on the role of healthy ecosystems in fighting climate change and building resilience with significant dignitaries like, Gwynne Taraska, Senior Adviser and Managing Director in the Office of the U.S. Special President Envoy for Climate, John Kerry, Simon Young, Senior Director, WTW, Michai Robertson, Advisor, Alliance of Small Island States (AOSIS) and more.



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ONE TREE AT A TIME

In 2022, WWF approved funds to continue our reforestation of Red Mangroves in the Bay Islands National Marine Park, furthermore a small fund from SERNA allowed us to increase those efforts in Guanaja.

The project consisted of two components:

- Reforestation
- Training and Awareness

Red mangrove reforestation was carried out in different communities on the island of Roatán (Santa Elena-16,678, Mud hole- 3,900, Sandy Bay- 300, Punta

Gorda- 51, and Brick Bay-200, Flowers Bay- 27), for a total of 21,156. 54 volunteers participated in the reforestation (32 Females, 22 Males). From two schools and two community centers, one fishermen group and one local business.

On the island of Guanaja, 2.5 hectares were reforested in North East Bight area by direct planting of 25,000.00 red mangrove propagules.

If you would like to participate in reforestation efforts or contribute to this project please contact us at info@bicainc.org



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THERE ARE MANY WAYS YOU CAN MAKE A DIFFERENCE

1. **Small changes make big waves;** avoid singles use plastics, consume sustainable seafood, and use water efficiently.
2. **Volunteer or Intern:** for a week, a month, six months.
 - Roatan: To the left in photo is our intern Francisco Schinder from the University of Plymouth who spent 6 months with us; he said "I would like to thank BICA for this opportunity that I have had, for teaching me to be a better scientist, but first of all, a better person."



- Guanaja: To the right in photo is our intern Elisa Murillo from the National University of Honduras who spent 6 months with us; she said "My experience as an intern at BICA-Guanaja was unique and gratifying as I put theoretical knowledge into practice in favor of the development of communities and marine and terrestrial ecosystems. BICA-Guanaja taught me how teamwork can achieve big goals and how our small daily actions are the change we need to improve our impact on the environment."



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- To the left in photo is our intern Raquel Alvarez from the National Univeristy of Honduras; she said "I carried out my professional internship at BICA - Guanaja Chapter, which meant a great learning opportunity in the marine-coastal area, in addition to the professional growth it helped me forge, I thank the organization and technicians who work there for guiding me and sharing their knowledge with me in addition to the warm treatment they gave me during those 6 months."

3. Support while you shop:

- On Amazon.smile choose Bay Islands Conservation Association
- Search our wishlists on Amazon.smile and purchase much needed equipment for our programs
- On Amavara.com use BICA code BICA15 when purchasing reef safe products

**DONATE TO OUR CAMPAIGN
AND PROTECT THE SEA
TURTLES OF UTILA!**



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we need your **HELP**

BICA ROATAN IS IN NEED OF REPAIRING THEIR VEHICLE (ISUZU DMAX)



GOAL:

L 100,000.00
\$4,081.00

DONATE

BAC L 301104206
BAC \$ 740082461

Asociacion para la Conservacion Ecologica de las Islas de la Bahia



WWW.BICAINC.ORG

4. Support our fundraisers by sharing or making a donation towards them.

- o BICA Utila needs help with maintenance on the building
- o BICA Roatan needs help to repair their vehicle
- o BICA Guanaja needs help with transportation

4. Make a monthly donation to one of our programs <https://bicainc.org/bica-inc-donate/>

5. **Become a Corporate Donor**, you can give a yearly donation which will go to implementing our programs.

6. **Follow our social media** @bica.hon on Facebook and @bica.hn on Instagram



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OUR PARTNERS

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We work closely with partners to meet our objectives for conservation in the Bay Islands, they are made up by central & local government, local & international NGOs, universities and local, national and international networks.



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OUR CORPORATE DONORS

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These are companies which have chosen to give of their success and help us build a better tomorrow for the Bay Islands.



Become a corporate donor, check out our website for more details on how you can contribute to the work we do and what benefits you will receive.

<https://bicainc.org/bica-inc-donate/>



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